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Developing competitive local suppliers for the oil industry in Kazakhstan: governance, policies, and institutions

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Developing competitive local suppliers for the oil industry in Kazakhstan: governance, policies, and institutions

Zhanat Murzakulova

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 groningen**

**Developing competitive local suppliers for the oil industry in
Kazakhstan: governance, policies, and institutions**

PhD thesis

to obtain the degree of PhD at the
University of Groningen
on the authority of the
Rector Magnificus Prof. C. Wijmenga
and in accordance with
the decision by the College of Deans.

This thesis will be defended in public on

Thursday 8 April 2021 at 14.30 hours

by

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Astana, 12th February 2021

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List of abbreviations:

1IIP	-	The First Industrial-innovative Development Plan
2IIP	-	The Second Industrial-innovative Development Plan
API	–	American Petroleum Institute
ASME	–	American Society for Mechanical Engineering
FDI	–	foreign direct investment
GDP	–	gross domestic product
GVC		global value chain
KPO	–	Karachaganak Petroleum Operating
NADLoc		National Agency on Development of local content
NCOC	–	North Caspian Operating Company
MNC	–	multinational company
OEM	–	original equipment manufacturer
PSA		The state entity PSA LLP
Authority		
PSA	–	production sharing agreement
R&D	–	research and development
SDG	–	sustainable development goal
SME	–	small and medium enterprises
TCO	–	TengizChevrOil

Abstract

The purpose of this study is to explore the economic development processes in mineral economies by focusing on the example of Kazakhstan. Like many oil exporters, Kazakhstan faces a development challenge of an undiversified economic structure and it suffers from the *Dutch disease*. The literature suggests that there is a way to pursue economic diversification by fostering development of competitive local suppliers serving the oil industry. The goal of this research is to examine this process with the analytical framework evolving around policies, governance and institutions. The interconnection of policies, governance practices and institutions form an enabling environment for the emergence of competitive local suppliers. Based on primary and secondary data, this study finds that such a facilitating environment in Kazakhstan is not yet in place. On the one hand, there are active private and state policies aimed at the creation of entry point for local suppliers of oil and gas machinery and equipment into the supply chains of oil operators. Such policies are crucial in the presence of market and coordination failures. On the other hand, the scaling up effects of these policies stumble upon weak and uncooperative governance practices on the side of both the state and oil operators. The study reveals that there is a need to move to governance practices based on cooperation, deliberation and accountability. Transition to governance arrangements that rely on these principles is constrained by weak institutions at the national level. This is mostly rooted in political institutions lagging behind those in the economic realm. Hence, the dynamics of economic diversification fails to unfold and keeps the country dependent on oil.

Abstract (in Dutch)

De bedoeling van deze studie is het onderzoeken van processen van economische ontwikkeling in van grondstoffen afhankelijke economieën en daarbij de aandacht te richten op het voorbeeld van Kazachstan. Zoals vele olie-exporterende landen is Kazachstan geconfronteerd met de uitdaging van de ontwikkeling vanuit een niet-diverse, eenzijdige economische structuur en het land lijdt aan de *Dutch disease*. In de literatuur wordt verondersteld dat economische diversificatie nagestreefd kan worden door de ontwikkeling van concurrerende lokale producenten in de olie-industrie te ondersteunen. Het is het doel van dit onderzoek om dit proces te onderzoeken met behulp van een analytisch kader dat voortkomt uit beleid, bestuur en instituties. De interconnectie van beleidsvoornemens, bestuur en institutionele verbindingen maakt het mogelijk de komst van competitieve, lokale producenten te accommoderen. Gebaseerd op primaire en secundaire data laat deze studie zien dat zo'n faciliterende omgeving in Kazachstan nog niet bestaat. Enerzijds bestaat er privaat en staatsbeleid dat gericht is op het scheppen van een entree voor lokale producenten van olie- en gasmachinerie en -outillage voor de bevoorradingsketens van oliebedrijven. Zulk beleid is cruciaal in het licht van voorkomende markt- en coördinatiemissers. Anderzijds stuiten de schaalvergroterende effecten van deze beleidslijnen op zwakke en oncoöperatieve bestuurspraktijken aan de zijde van zowel de staat als de oliebedrijven. Deze studie toont aan dat er behoefte is aan een bestuurspraktijk gericht op samenwerking, overleg en verantwoording. Een transitie naar een bestuursorganisatie die gebaseerd is op deze principes wordt bemoeilijkt door zwakke instituties op nationaal niveau. Dit wordt vooral veroorzaakt doordat de politieke instituties achterlopen bij de ontwikkelingen in het economisch veld. Hierdoor kan een dynamiek van economische diversificatie zich niet ontwikkelen en blijft het land afhankelijk van olie.

Executive Summary

The central objective of this study is to understand the drivers and challenges of industrialization in Kazakhstan. The motivation behind this research is to gain insights on how development of competitive local suppliers for the oil industry drives the economic diversification of the country. Kazakhstan is struggling to capture this goal and in the presence of low oil prices it is becoming an even more pressing item in the national development agenda. The leading research question is:

To what extent has the industrialization strategy of Kazakhstan since its independence in 1991 been in line with the concept of unbalanced growth as suggested by Hirschman?

The research question is inspired by the controversial growth experience of Kazakhstan after its independence. As Chapter 1 shows, despite the gloomy transition years Kazakhstan managed to embark on high levels of economic growth. This was mainly achieved with increased exports of oil. Though oil revenues offered the *fast lane* to development, Kazakhstan failed to reap its benefits fully. The reasons for that are explained with the application of the unbalanced growth theory, as proposed by Hirschman, to the industrialization strategy of Kazakhstan. In particular, the unbalanced growth theory offers executing the sequential approach to economic development: fast growing industries can form a basis for development of other industries. Hirschman provides a clear theoretical framework for such dynamics to unfold – the building of productive linkages between industries. The practical implication for oil exporters of this theoretical framework is to build strong linkages between resource and non-resource industries.

Based on the literature review Chapter 2 demonstrates that the positive synergy between oil extraction and development of non-resource industries is achieved through expansion of local suppliers, i.e. backward linkages. As globally operating multinational companies dominate the oil industry, procurement of local inputs is expected to contribute to operational efficiency through reduced costs and improved flexibility of operations. Despite the seemingly obviousness

of the argument, in practice the emergence of such a backward linkage is not happening by default. Development of the linkage depends on many factors on both the demand (size and nature, entry barriers to supply chain, preferences for local sourcing, etc.) and supply (technological capability, costs parameters, etc.) side. Thus, both sides should be willing and ready for a business partnership. This is not always the case and many resource-rich countries became very interventionist (and the local content policy is the most striking example) in fostering development of backward linkages. The increased state activism is justified since the oil industry offers fewer opportunities for employment due to its capital-intensive nature, while setting high technological standards for suppliers of inputs. Chapter 2 draws on the experiences of Malaysia, United Arab Emirates, Norway and Brazil on economic diversification efforts through development of local industries and promotion of local suppliers to the oil industry.

Country experiences show that a successful economic diversification strategy relies on a set of strong long-term policies, consistent political leadership, commitment to development, supportive governance and an appropriately functioning institutional framework. Not all resource-rich countries possess these prerequisites for success. Chapter 3 brings to the discussion theoretical explanations on why some countries are winning from the resource wealth while others lose. This discussion starts with the *resource curse* theory, which received its prominence from the strong empirical evidence capturing the weak economic performance of resource exporters relative to other countries. Hence, resource-rich countries are cursed by the natural wealth to underdevelopment. However, by looking closer at the genesis of the resource curse and the channels through which it transmits to economic, political and social systems of the country, it becomes apparent that it centers on the effective management of resource rents. Countries that escaped the resource curse were capable of introducing management system to control the harmful effects of rents while capturing the positive spillovers through the distribution of rents to a larger number of agents. Such a management system arrives from the institutional setting of the country, its ability to induce transformational change, the intention of the state to support the development process and its capacity to implement developmental policies, and the presence of *growth-enhancing* governance arrangements. The resource curse manifests itself when the country

fails to develop new local industries other than extractives, meaning that the system of rents distribution is not functioning well.

Promotion of new industries and economic diversification has always been on the development agenda of Kazakhstan. The political leadership was aware of risks that resource wealth places on development. In order to avoid the fate of a mono-product economy, the state has been very active in introducing its industrialization strategy. Visionary long-term strategies and numerous planning documents were adopted with the goal to foster the national economy and to promote new non-resource industries. Industrial policy efforts targeted both export-promotion and import-substitution through the list of priority sectors. The oil and gas industry has always been given a strategic role due to the perceived strong potential for import-substitution and support for the emergence of supplying industries. To approach the universal research question, Chapter 4 refines the question further to narrow down the analysis on backward linkages development to a specific manufacturing industry – oil and gas machinery and equipment. Such a zoom-in benefits the analysis as it shows that the more inputs are sourced locally the more the country benefits from the resource extraction. The oil and gas machinery and equipment sector represent a good case to indicate the technological readiness, human capital quality and availability of financial, and physical capital for manufacturing industries to comprehend their capabilities. The basic intuition behind this idea is that if one manufacturing industry managed to ascend, then there is an enabling environment in place, which is not limited to the specific characteristics of the firm, but reflected in the general business environment under which the firm operates. Chapter 4 provides the conceptual framework to analyze the enabling environment. Based on the literature (Chapter 2) and the discussion of theories (Chapter 3), it is determined that an enabling environment is driven by *governance, policies and institutions*. Chapter 4 then explains the choice of the qualitative research method, how the data were collected and analyzed, as well as limitations of the research.

For local suppliers to improve their competitiveness, they need to have the means to do so: access to markets, availability of skilled labor, finance, innovations, infrastructure, etc. These to the most extent represent a wider country context. Improving the local context to do business in the country is approached with a development framework. The development framework is dynamically evolving in Kazakhstan

and is driven by the aspirations of the political leadership to reach the ambitious national development vision. At the horizontal dimension it includes a set of strategic actions aimed at general improvements of living and working conditions in the country: health, education, well-being, security, etc. Among the horizontal policies ensuring the resilience of the financial system, improving the general access to finance, development of the private sector and SMEs are gaining importance. The horizontal policy is combined with vertical efforts to promote specific sectors. With regards to local suppliers to the oil industry a crucial role is given to local content policy. Though evolution of the development framework is supported by the intention of oil operators to connect with local suppliers, still, embedding local suppliers in the framework is accompanied by periods of resource nationalism. As Chapter 5 shows, the reasons for that are the contractual frameworks existing around oil-extraction operations. International oil operators rely on the stable rules and norms set out in their contracts. These also refer to the general sourcing principle based on price and quality. Hence, it is important not only to find an optimal level of local content, but also to ensure the competitiveness of local suppliers in terms of price and quality. Chapter 6 finds that local suppliers face strong market and coordination failures, which lead to a weak absorptive capacity. At the same time, there are transaction costs for local suppliers and oil operators associated with entering into business relations. In this setting, it is highly unlikely that backward linkages will emerge solely as the outcome of market forces.

To support local competitiveness and to create an entry point into the supply chain of oil operators, the set of tailored policies are in place. The important finding of Chapter 7 is that both private and state policies are of equal importance. Still, to scale up the effects of these policies, new approaches to governance are required. It is highly important to open the access for arenas, not only for networking but also for discussions about possible solutions to industry- development challenges. Though there is an organizational network in place to facilitate exchange of ideas, the change to collaborative governance is not yet fully realized. Chapter 8 explicitly argues that the wider engagement of stakeholders, sound deliberation and accountability practices need to be enhanced to efficiently address market and coordination failures. The reason is that competitiveness grounds not only on the cost profile but also on other intangible sources of efficiency, like culture, devotion, beliefs, leadership and many other

factors, which could be denoted as institutions. Chapter 9 provides an analysis of institutions at the firm, industry and national level. It finds that supportive institutions are still in shortage and mostly at the national level. The reasons for that are the political institutions that fall behind the economic ones and, as a result, suppress the entrepreneurial drive by opening the gate to informality, favoritism, non-transparent rent-allocation and a general high level of uncertainty. Chapter 10 concludes that an enabling environment for the emergence of competitive local suppliers in Kazakhstan is not yet fully in place. This implies that Kazakhstan failed to release the dynamics of unbalanced growth despite active state interventions and the economic diversification remains modest keeping the country dependent on oil.

Executive Summary (Nederlandse samenvatting)

De belangrijkste doelstelling van deze studie bestaat erin de drijfveren en uitdagingen rond de industrialisering in Kazachstan te begrijpen. Het motief voor dit onderzoek is gelegen in het streven naar inzicht in hoe het ontwikkelen van een competitief potentieel aan lokale leveranciers voor de olie-industrie kan leiden tot een economische diversificatie van het land. Kazachstan worstelt ermee dit doel te bereiken en bij de huidige lage olieprijsen is dit thema van een nog groter belang geworden voor de nationale ontwikkelingsagenda. De centrale onderzoeksvraag luidt:

In welke mate is de industrialiseringsstrategie van Kazachstan sinds de onafhankelijkheid van 1991 te begrijpen aan de hand van het concept van unbalanced growth, zoals geformuleerd door Hirschman?

Deze onderzoeksvraag is geïnspireerd door het controversiële groeiproces van Kazachstan sinds zijn onafhankelijkheid. Zoals hoofdstuk 1 zal tonen, lukte het Kazachstan om – ondanks de treurige overgangsjaren direct na de onafhankelijkheid – tot een niveau van grote economische groei te komen. Dit kon vooral gerealiseerd worden door een toenemende export van olie. Alhoewel de olieopbrengsten een *fast lane* tot ontwikkeling boden, wist Kazachstan hiervan toch niet volledig te profiteren. De redenen daarvoor worden uitgelegd aan de hand van de *unbalanced growth* theorie, zoals die door Hirschman is opgesteld, ten aanzien van de industrialiseringsstrategie van Kazachstan. In het bijzonder levert de *unbalanced growth* theorie de mogelijkheid de sequentiële benadering van economische ontwikkeling uit te werken: snel groeiende industrieën kunnen een basis vormen voor de ontwikkeling van andere industrieën. Hirschman voorziet in een helder theoretisch kader voor de ontplooiing van zulke dynamiek – het aanleggen van productieve verbindingen tussen industrieën. De praktische uitwerking hiervan voor olie-exporteurs is het opbouwen van sterke verbanden tussen grondstof- en niet-grondstofgebonden industrieën.

Gebaseerd op een literatuuroverzicht laat hoofdstuk 2 de positieve synergie zien die tussen oliewinning en de ontwikkeling van niet-grondstofgebonden industrieën kan ontstaan door een toename

van lokale leveranciers, i.e. *backward linkages*. Aangezien globaal opererende multinationals de olie-industrie domineren, wordt verwacht dat lokale input operationele efficiëntie zal bevorderen door lagere kosten en meer flexibiliteit in de uitvoering. Niettegenstaande de ogenschijnlijke voordehandliggendheid van dit argument, geschiedt het ontstaan van een dergelijke *backward linkage* niet vanzelf. De ontwikkeling van zo'n contact hangt van vele factoren af, zowel in de vraag (naar maat en aard ervan, ook wat betreft entree-barrières in de bevoorradingsketen, en voorkeuren voor lokale bronnen, etc) als in het aanbod (technologische capaciteit, kostenparameters, etc). Met andere woorden, beide zijden van het spectrum moeten genegen zijn tot een dergelijk zakelijk partnerschap. Dit is niet altijd het geval en vele grondstofrijke landen werden zeer interventionistisch van aard (cf. het *local content* beleid als meest opvallend voorbeeld hiervan) in het bevorderen van de ontwikkeling van zulke *backward linkages*. Het toegenomen staatsactivisme kan gerechtvaardigd geacht worden, aangezien de olie-industrie minder kansen biedt voor werkgelegenheid, veroorzaakt door haar kapitaal-intensieve aard, en omdat ze hoge technologische eisen stelt aan de leveranciers van haar hulpmiddelen [*inputs*]. Hoofdstuk 2 beschrijft de ervaringen van Maleisië, de Verenigde Arabische Emiraten, Noorwegen en Brazilië waar het gaat om de pogingen tot economische diversificatie door de ontwikkeling van lokale industrieën en de bevoordeling van lokale leveranciers aan de olie-industrie.

Deze ervaringen laten zien dat een succesvolle economische diversificatie-strategie gebaseerd moet zijn op een sterk, op de lange termijn gericht politiek beleid, op consistent politiek leiderschap, en op een engagement voor ontwikkeling, ondersteunend bestuur en beheer en een passend functionerend institutioneel kader. Niet alle grondstofrijke landen beschikken over deze voorwaarden tot succes. Hoofdstuk 3 behandelt theoretische overwegingen waarom sommige landen winnen bij hun grondstoffenrijkdom, terwijl andere eraan verliezen. Deze discussie begint met de *resource curse* theorie, die in zwang kwam door het sterke empirische bewijs voor de relatief zwakke economische prestaties van grondstoffen-exporterende landen in vergelijking met andere landen. Met andere woorden, grondstofrijke landen zouden gedoemd zijn tot economisch onderpresteren door hun natuurlijke rijkdom. Echter, wanneer we preciezer de oorsprong van de *resource curse* bekijken en de kanalen waarlangs die *curse* zichtbaar wordt in de economische, politieke en sociale systemen van het land,

dan wordt duidelijk dat ze te maken heeft met een effectieve beheersing van *rent-seeking*. Landen die erin slaagden aan de *resource curse* te ontsnappen, bleken in staat te zijn geweest managementsystemen te introduceren, die de schadelijke effecten van *rent-seeking* bleken te kunnen beheersen, en die tegelijkertijd positieve effecten creëerden door de distributie van *rents* over een grotere groep van actoren te verdelen. Zulke managementsystemen ontstaan uit de institutionele structuur van een land, uit zijn vermogen veranderingen daarin te bewerkstelligen, verder uit de intentie van een staat om het ontwikkelingsproces te ondersteunen en zijn vermogen zulk ontwikkelingsbeleid uit te voeren, en uit de aanwezigheid van *groei-bevorderende* bestuursbeschikkingen. Daarentegen wordt de *resource curse* merkbaar wanneer een land faalt in het ontwikkelen van nieuwe lokale bedrijvigheid van een andere aard dan grondstoffenwinning, wat betekent dat het systeem van pachtregeling en -distributie niet goed functioneert.

De bevordering van nieuwe industrie en economische diversificatie heeft altijd op de ontwikkelingsagenda van Kazachstan gestaan. Het politiek leiderschap was zich bewust van de risico's rond grondstofrijdheid in het kader van economische ontwikkeling. Om het lot van een mono-productgerichte economie te vermijden, is de staat zeer actief geweest in de ontwikkeling van zijn industrialisatiestrategie. Visionaire lange-termijn strategieën en vele beleidsplannen werden ontwikkeld met het doel de nationale economie te stimuleren en nieuwe niet-grondstofgebonden industrie te bevorderen. Industriële beleidsontwikkeling was gericht zowel op exportbevordering als op importvervanging met behulp van een hele lijst geprioriteerde sectoren. De olie- en gasindustrie had in dit alles altijd een strategische rol vanwege het veronderstelde sterke potentieel voor importvervanging en -ondersteuning voor het optreden van toeleveringsbedrijven. De algemene onderzoeksvraag in deze studie dichter benaderend, wordt in hoofdstuk 4 die vraag verder verfijnd door een analyse van *backward linkage* ontwikkeling binnen één bepaalde bedrijfstak – die van de olie- en gasmachinerie en –uitrusting. Zo'n focus aan te brengen is van voordeel voor de analyse, aangezien die laat zien dat hoe meer overige industrie lokaal gevestigd is en de olie- en gaswinning ter plekke bedient, hoe meer het land wint bij de grondstofwinning. De sector voor olie- en gasmachinerie en –uitrusting vormt een goede casus om fabrikanten hun mogelijkheden aan technologisch kunnen, kwaliteit in *human capital*, en fysieke en

financiële capaciteiten te doen inzien. De basis-idee hierachter is dat als het een dergelijk bedrijf is gelukt om hogerop te komen, economisch gezien, dat dit een soort faciliterende context of omgeving vormt, die niet specifiek is voor alleen dit bedrijf, maar dat deze context zich meedeelt aan de gehele zakelijke omgeving waarbinnen het bedrijf opereert. Hoofdstuk 4 beschrijft het conceptuele kader voor de analyse van deze faciliterende context. Gebaseerd op de literatuur (hoofdstuk 2) en de behandeling van theorievorming (in hoofdstuk 3) wordt beschreven dat een dergelijke faciliterende context bepaald wordt door *bestuur, beleidsvorming en instituties*. Hoofdstuk 4 geeft een uitleg van de keuze voor de *qualitative research* methode, van de wijze van dataverzameling en -analyse, en ook geeft het hoofdstuk een indicatie van mogelijke beperkingen deze methode.

Als lokale leveranciers competitiever willen kunnen optreden, dan hebben zij middelen daartoe nodig: toegang tot de markten, beschikbaarheid van geschoolde arbeidskrachten, financiële middelen, innovaties, infrastructuur, etc. Voor het grootste deel gaat het hier om factoren bepaald in een ruimere landscontext. Het verbeteren van de lokale context om zaken te doen in het land wordt benaderd vanuit een ontwikkelingsperspectief. Dit evolueert op dynamische wijze in Kazachstan en wordt gedreven vanuit de aspiraties van de politieke leiders om een ambitieuze visie op de nationale ontwikkeling te realiseren. Wat de horizontale dimensie betreft gaat het om een bundeling van strategische voornemens gericht op algemene verbetering van de leef- en werkomstandigheden in het land: gezondheid, scholing, welstand, veiligheid, etc. Wat de horizontale beleidslijnen betreft die de veerkracht van het financiële systeem moeten waarborgen, worden factoren als algemene toegankelijkheid tot de financiële wereld, ontwikkeling van de private sector en SMEs allengs belangrijker. De horizontale beleidslijnen worden gecombineerd met verticaal gerichte ingrepen, waarin bepaalde sectoren worden gestimuleerd. Wat lokale leveranciers aan de olieindustrie betreft, wordt een cruciale rol gespeeld door zgn. *local content* beleid. Hoewel de ontwikkeling van dit hele kader doorgaans gesteund wordt door de olie-exploitanten, in hun streven lokale leveranciers te betrekken in hun activiteiten, toch komen ook periodes voor waarin lokale leveranciers naast het net vissen. Zoals hoofdstuk 5 laat zien, kunnen de redenen hiervoor gevonden worden in de contractverplichtingen die binnen de oliewinning bestaan. Internationale olie-exploitanten houden zich aan de regels en normen

die in hun contracten voorgeschreven zijn. Die hebben ook te maken met algemene energiewinningsprincipes van prijs en kwaliteit. Derhalve is het belangrijk om niet alleen een optimaal niveau van *local content* te realiseren, maar ook om de concurrentiemogelijkheden van lokale leveranciers qua prijs en kwaliteit te versterken. In hoofdstuk 6 wordt beschreven hoe lokale leveranciers geconfronteerd worden met ernstige markt- en coördinatiefouten, wat leidt tot een zwakke capaciteit tot verwerking daarvan. Tegelijkertijd zijn er transactiekosten verbonden aan het onderhouden van zakelijke relaties tussen lokale leveranciers en olie-exploitanten. In deze context is het onwaarschijnlijk dat alleen *backward linkages* voort zullen komen uit de krachten in de markt.

Om lokale concurrentie mogelijk te maken en zo entree-mogelijkheden binnen de aanleveringsketen van olie-exploitanten te creëren, is een op maat gesneden beleid nodig. Een belangrijke uitkomst van hoofdstuk 7 is dat het particuliere en het overheidsbeleid even belangrijk zijn hierin. Niettemin is het nodig nieuwe beleidsvoornemens te formuleren, om het effect van bestaand beleid te versterken. Het is zeer belangrijk de weg naar andere arena's te openen, niet alleen om te netwerken, maar ook om te discussiëren over mogelijke oplossingen voor de uitdagingen waar de industriële ontwikkeling voor staat. Hoewel er een organisatorisch netwerk voorhanden is voor de uitwisseling van ideeën, is toch de overgang naar een samenwerkend bestuur en beheer nog niet volledig gerealiseerd. In hoofdstuk 8 wordt expliciet beargumenteerd dat bredere betrokkenheid van de belanghebbenden en gedegen overleg- en verantwoordingspraktijken nodig zijn om markt- en coördinatiefouten efficiënt aan te pakken. De reden hiervoor is dat concurrentievermogen niet alleen gebaseerd is op het kostenprofiel, maar ook op andere ongrijpbare vormen van efficiëntie, zoals cultuur, toewijding, overtuigingen, leiderschap en vele andere factoren, die als instituties kunnen worden aangeduid. Hoofdstuk 9 bevat een analyse van instituties op bedrijfs-, industrieel en nationaal niveau. Hier wordt vastgesteld dat er nog steeds een tekort is aan ondersteunende instituties en dat dan vooral op nationaal niveau. De reden hiervoor is dat politieke instituties achterlopen op de economische instituties en als gevolg daarvan ondernemingsdrang frustreren door de deur te openen voor informaliteit, voortrekkerij, niet-transparante pachttoewijzing en in het algemeen een hoog niveau van onzekerheid. In hoofdstuk 10 volgt als conclusie dat er nog geen volledig faciliterend

klimaat is voor het ontstaan van concurrerende lokale leveranciers in Kazachstan. Dit betekent dat Kazachstan er niet in is geslaagd de dynamiek van een onevenwichtige groei los te laten, ondanks actieve staatsinterventies, en dat de economische diversificatie bescheiden blijft en dit het land hierdoor afhankelijk houdt van olie.

Chapter 1. Introduction: problem statement and research outline

The purpose of this study is to understand challenges and drivers of industrialization in oil exporting countries, in particular – Kazakhstan. The motivation behind this research is threefold.

Firstly, understanding of how development of competitive local suppliers for the oil industry supports the wider economic diversification. The study is interested in exploring the drivers and challenges of this process. Specific conceptual framework (discussed in details in Chapter 4) is employed to derive this knowledge. As we gain greater understanding of how natural wealth could contribute to industrial transformation in resource-rich countries, we are able to develop sophisticated theories and tailored policy advice for resource exporters who are still looking for effective ways to take-off in their development. It is envisaged that insights of this study could help policymakers to see *a bigger picture* while formulating industrial policies from the informed perspective and, hence, control the outcome of such policies. At the same time, the desired effect of this study is to evoke a feeling that even a small effort to support development of domestic manufacturing firms taken by individuals at any level of governance matters. Hence, this study calls for creation of enabling environment to turn those random individual efforts into systemic response to promote economic diversification in oil exporting country.

Secondly, in many oil exporters fast economic growth could be decoupled from the economic development and Kazakhstan is not an exception. This study is keen to explore theoretical foundations for such disconnect. The resource curse theory (discussed in Chapter 3) clearly states that natural wealth harms development by inhibiting other than extractive industries. In contrast, Hirschman offers clear framework how developing countries could arrange their industrialization strategies. In this study the unbalanced growth theory (discussed in this and next chapter) offered by Hirschman forms a theoretical foundation of the analysis. Application of Hirschman's theory is called to help structuring the analysis in an orderly way and enlighten areas of

practical and theoretical knowledge on how to prevent manifestation of the resource curse.

Third, most importantly this study seeks to offer the reader a descriptive narrative story about Kazakhstan's experience in pursuing its industrialization agenda. To tell this story the qualitative research method (discussed in Chapter 4) is chosen and the primary data is derived from unstructured expert interviews. Experiences of different actors, lessons they have learned and challenges faced over the last decades are powerful source of historical data. By interviewing people who directly work in the industry or engage in industry development allows gathering vivid and detailed information from witnesses of the process. Recording such knowledge captures deep insights about the reality and how things actually are happening. Hence, economic development is recorded not only with statistical data but also with individual stories behind the numbers. This study attempts to combine those divergent experiences to offer the reader perspective from different angles. The chosen conceptual framework guides the analysis and sequences the data in a logical order for coherent story to emerge. It is hoped that at the end of this study the reader will have more knowledge about Kazakhstan's experience in harnessing its resource wealth for development and challenges it faced.

Oil is one of the major internationally traded goods and has a direct impact on the global economy and development patterns of particular countries both in the past and in the foreseeable future (Stevens, 2018). Kazakhstan is not an exception in this case as it is among the countries with the largest proven oil reserves in the world. There are many oilfields along Kazakhstan's spacious territory, however, the biggest, not only in the national context, but on a worldwide scale, are concentrated in the Caspian Sea region, which has its own 100-year long history of oil operations.

Natural wealth has allowed Kazakhstan – a former Soviet Union republic - to remove strong development constraints, such as lack of financial and physical capital in the first instance and achieve high levels of economic growth. In nominal terms, the country entered the ranks of the upper-middle income category¹ as defined by the World

¹ The World Bank introduced classification of all economies into four income groups. The upper-middle income group is as of July, 1, 2020 refers to per capita income in current US dollars and is between 4,046-12,535.

Bank in less than two decades, after its independence in December 1991. The country attracted the world's biggest international oil companies to operate its major oil and gas fields. High economic growth backed by oil exports supported the government's programs for poverty reduction and development of basic infrastructure. While reducing poverty, the growth led by resource exports has brought with it development constraints of another dimension. The economy has become highly dependent on oil revenues and is vulnerable to external shocks from oil price fluctuations. Large capital inflows from oil exports resulted in a consumption boom, expansion of external borrowing by commercial banks and appreciated the exchange rate making local manufacturing weak to compete on prices with imports. Failures in strategic macroeconomic management of oil revenues eroded dramatically the local conditions for the development of competitive non-resource industries while service industries (e.g. real estate, trade and retail, logistics, etc.) were booming (Esanov and Kuralbayeva, 2008; Esanov, 2011; World Bank, 2013, 2014, 2018).

Industrialization efforts have resulted in slower than expected growth of non-resource tradable sectors while non-tradables expanded. The private sector, overall, has not reached a sufficient level of development. State-owned enterprises, even today, represent the main market players and are active in all industries. The state has substantial control over the economy. As a result of strong dependence on oil revenues, *Dutch disease* has trapped the economy – a phenomenon that describes the situation in a mineral economy in which the tradable sector (manufacturing), apart from resource extraction, squeezes while the non-tradable sector (services) expands. The symptoms of this process can be masked by high export-led growth accompanied by generous public social expenditures that create a sense of prosperity in a society. However, in reality the country produces and exports a very limited variety of goods. As van Wijnbergen (1984) argues, the impacts of increased resource revenues differ – advanced economies suffer from decline in manufacturing while developing countries struggle to diversify the economy. For countries at an earlier stage of industrial development the Dutch Disease would inevitably lead to crowding out of accumulation of technological progress in manufacturing industries. In this situation, a policy intervention in the form of subsidy is

employed to support such industries during periods of high oil revenues. This argument is in line with the idea of supporting economic diversification with active state policies (van Wijnbergen, 1984; Baldwin and Venables, 2015; Stevens et al., 2015; Badeeb et al., 2017).

Despite state efforts to promote economic diversification, overall, the institutional structure in Kazakhstan has been supportive for resource extraction and siphoning off financial resources to booming consumption and service industries but not to productive forces, i.e. local manufacturing. As a result, local manufacturers and supply chains remain underdeveloped, especially when it comes to technology-intensive industries like machine building. The conventional wisdom is that the emergence of strong manufacturing industries opens the path for deeper industrialization and economic diversification – a goal that many resource exporters are aiming to achieve (Auty, 2002; Rodrik, 2007; Altenburg, 2011; Lin, 2012). Though economic scholars from various schools addressed the underpinnings of the development process of local manufacturers, this research is largely driven by the ideas of Hirschman (1958, 1981) and more recent scholars who applied his theory to the case of resource-rich countries (Dietsche, 2014; Morris, Kaplinsky, and Kaplan, 2011; Baldwin and Venables, 2015). Hirschman argued that having competitive local suppliers could serve as the most direct path to industrialization (discussed in details in the later sections and Chapter 2).

This research aims to apply the linkage concept proposed by Hirschman to the case of the industrialization process in Kazakhstan. In particular, this concept suggests that fast growing industry could contribute to development of the other if these are linked through inputs and outputs. Based on this concept and primary data, this work explores the process of developing competitive local suppliers in Kazakhstan with special reference to local producers of machinery and equipment for the oil industry – the largest exporting industry in the country. It is envisaged that this approach allows a more focused understanding of the industrialization process in Kazakhstan and more specifically its primary drivers and constraints. With further generalization the research findings can be instructive to other oil exporters and it is expected to contribute to existing knowledge on the growth process in mineral economies and provide insights on strategic approaches to industrialization in such countries.

This introductory chapter provides an overview of the economic conditions Kazakhstan was facing and what role its oil wealth has

played in its economic development. The goal of this chapter is not only to present the research outline but also to derive the research question based upon the overview of the development process of the resource-rich country and issues associated with the resource-led growth. This chapter has three main parts. It starts with a brief historical overview of the oil industry in Kazakhstan and describes the main industry actors and the contractual framework that has guided the operations of foreign investors in the oil industry and remains valid today. It then proceeds to review the macroeconomic development patterns of Kazakhstan in its early days of independence up to the most recent oil price plunge in 2014-2015. The final part describes the problem statement and universal research question, the methodology of the current research and presents the research outline.

1.1. Economic development patterns in Kazakhstan: from independence (1991) to the last financial crisis (2007) and oil price plunge (2014)

This section provides brief overview of economic developments in Kazakhstan. In a relatively short period following harsh recession years after the independence in 1991, Kazakhstan managed to achieve remarkable growth levels. As a former Soviet republic, its early days of independence were ruptured by economic and social turmoil. However, it eventually achieved high economic growth by utilizing its rich hydrocarbon reserves located in its part of the Caspian Sea region. Exit from the painful transition period is strongly associated with the fast and strong economic growth based on exports of crude oil and long-term plans for the development of the country's vast hydrocarbon reserves in partnership with international investors. Expansion of the oil industry formed new challenge to development – increased dependence on oil exports.

Discovery of big Kazakh oil

Apart from other oilfields, there are three giant oil and gas fields – Tengiz, Karachaganak, and Kashagan – that comprise the major

production of oil and gas in the country and all three are located in the Caspian Sea region.

Early discoveries of the first Kazakh oil in the Pre-Caspian basin began at the end of the 19th century. Imperial Russia was regularly sending geological campaigns to the Ural-Emba oil-bearing district of the Pre-Caspian basin. At this time, the oil-bearing conditions of the region were examined in a broad sense and geological maps of several oilfields were created. The commercial extraction in the Emba area began with the discovery of the Dossor and Makat oilfields (Cherdabayev, 2018).

The first oil spring at Dossor field was obtained on April 29, 1911, and the oil was ascending for 30 hours, bringing 273.5 tonnes of *black gold* to the surface. The Dossor oil discovery attracted the attention of the international business community, especially British investors, and led to the emergence of a number of joint-stock companies during 1910-1913. After some trials, on May 15, 1915, the 18-hour oil spring at Makat field signaled the discovery of the second commercial oilfield in the region. At that time, the technology for oil extraction was simple: *oil-men* were mostly hunting for oil springs and when it was depleted they moved to other areas. For example, the primitive free flow method of oil extraction combined with the use of pumps has been utilized in the Emba site for 20 years. Apart from Dossor and Makat other areas of the Ural-Emba region remained largely unexplored. However, during the Soviet Union time between 1923-1952 there was a revival of the geological exploration in the region and application of new extraction technologies. During 1920 to 1929, oil production increased by 19 percent in physical terms compared to the entire pre-revolution period of 1911- 1917 (Cherdabayev, 2018).

A new impetus to the development of exploration research on the territory of Western Kazakhstan was given with the task to explore structures with signs of oil and gas on an area of the Northern Emba territories. New deposits were discovered and explored. Rotational drilling on the Emba was used for the first time in the Soviet Union. The acceleration of exploration and discovery of a number of new fields in the 1930s was dictated by the need to create a solid raw material base for the development of an oil and gas industry. In the 1930s, oil development issues in the region called for the introduction of a comprehensive scientific approach to the development of oil resources

and the production process. By 1941 the Emba oil-bearing area became important to the country due to its high quality oil.²

During the Second World War the Emba region played a strategic role as a supplier of petrochemicals to the Soviet Army and compensated for the suspension of fuel transportation from major oil producing regions in the Soviet Union – Baku, Groznyi and Maikop. At that time, the boosting of oil production in Kazakhstan became the first priority. Various new technologies were introduced and several new oilfields were discovered while specially created production trusts were organized to intensify construction and exploration works. New pipelines were constructed and the first oil refinery plant was created in Atyrau in 1943³.

After the war further advancements in the methods and techniques of exploration and extraction of hydrocarbons were introduced. Capital investments in the fleet of drilling wells in the region increased substantially together with the capacity of wells to go deeper under the surface. Scientific research was aimed at overcoming the industry constraints and a number of big academic names arrived to lead the research in the area. The significant advancement of seismic explorations and methods of exploratory drilling during the post-war period opened the path to the largest oil discoveries on a global scale in the Caspian Sea region. Thorough geological studies, advanced engineering technologies, leading specialists employed in the search of the *big oil* have delivered the focused geological, geophysical studies and valuable data about the structure of the Caspian subsoil.⁴

Over 30 years of studies preceded the discovery of the giant Tengiz oilfield in 1979 that is now among the top-30 largest oilfields in the world and is the major oil producer in Kazakhstan. The exploration work at Tengiz was intense by the mid 1980s and ended in 1992. The geological complexity of the field, the lack of appropriate technology and the limited experience of drilling under abnormally high pressure, together with the high sulfur content in the oil, influenced the lengthy timeline of Tengiz's further development. In addition, Tengiz was

² http://emba.kz/rus/press-centr/smi_o_nas/intervyu/?cid=0&rid=807, accessed on 15 July 2020

³ https://online.zakon.kz/m/Document/?doc_id=30423487, accessed on 15 July 2020

⁴ Magazine article “Kazakh oil - 120 years”, Oil and Gas of Kazakhstan, Issue 4, 2019, pp.6-12

located in the deserted, under-populated and economically underdeveloped territory of Guriev region (currently Atyrau – the contemporary oil capital of Kazakhstan). The development of oilfields of the size of Tengiz is a very complex process and has its risks. One of the most disastrous accidents happened on the night of June 24, 1985 during drilling works at Tengiz and received the name “accident at well number 37”. A powerful oil and gas gusher appeared at well 37 and during the next 399 days all attempts to close it failed. This accident resulted in the spillage of 3.4 million tonnes of oil, 1.7 cubic meters of gas and 900 thousand tonnes of soot to the atmosphere. The environmental damage covered a radius of 400 km and the related health issues experienced by the people living in the area were devastating ⁵. The accident demonstrated the inefficiency of technologies for the use at the highly complex Tengiz field. Further development of the oilfield required capital investments and new technologies.

Apart from Tengiz there are Karachaganak and Kashagan fields that are also among the world largest oilfields. Karachaganak oil and gas condensate field was discovered in 1979 in the Pre-Caspian basin in the Uralsk region. Production commenced in 1984. The giant Kashagan field is among the largest oil discoveries of the past four decades in the world and is the largest oilfield outside the Gulf region. It is the first major offshore oil and gas development project in Kazakhstan. It is located 80 km offshore of Atyrau and is more than 4 kilometers deep.

Table 1 provides information on the size of these oilfields in comparison to proved oil reserves of some of the major oil producing countries.

⁵ <https://rus.azattyq.org/a/caspian-see-muftah-diarov-ecologist/2072113.html>, accessed on 15 July 2020

Table 1: Oil proved reserves in Kazakhstan and other countries

Country	Oil reserves, thousand million barrels
Kazakhstan, of which:	30, of which:
Tengiz and Korolev together	7.1 – 10.9
Kashagan	9 - 13
Karachaganak	13.3
Russia	106.2
US	50
Canada	168.9
Saudi Arabia	266.2
United Arab Emirates	97.8
Kuwait	101.5
Qatar	25.2
Iran	157.2
Iraq	148.8
Nigeria	37.5
Libya	48.4
Norway	7.9

Source:

BP Statistical Review of world energy. 2018.
<https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2018-full-report.pdf>, accessed 23 December 2019

Corporate web-sites:

KPO:

https://kpo.kz/fileadmin/user_upload/Past_Reports/eng/2016_KPO_SUSTAINABILITY_REPORT_EN_Final_spread.pdf, accessed on 23 December 2019

TCO:

http://www.tengizchevroil.com/docs/default-source/publications/ru/2018-corporate-responsibility-report.pdf?sfvrsn=8372c45c_4, accessed on 23 December 2019

NCOC:

<https://www.ncoc.kz/ru/ncoc/about>, accessed on 23 December 2019

Development of large oilfields was taking place in an atmosphere of political and economic crisis in the aftermath of the collapse of the Soviet Union in December, 1991. Within the centrally planned economy of the former Soviet Union, Kazakhstan was specializing in raw materials (oil and metals), heavy industry (metallurgy) and agriculture. This made the country very much dependent on technological inputs, intermediate goods and raw materials from other Soviet republics. The collapse of the planned economy of the Soviet Union in 1991 left independent Kazakhstan's oil

industry with no technology: "... not a single plant in their own country which would produce and manufacture equipment and spare parts for oil industry, not a single piping plant, not a single plant which would manufacture drilling machines, machines for capital repairs of wells, or deep well pulsers. Production was falling. It even happened so that operation drilling on Kalamkas, where about 270 wells were drilled on an annual basis before the start of the 1990s, had to be stopped! Absence of timely financing made its contribution too. During this period, the workers of the industry were not receiving salaries for years." (Cherdabayev, 2018, p. 122)

On becoming an independent state, Kazakhstan was facing a difficult task to build its economic system for the new state from scratch. Its rich natural resources supported not only the process of a tough transition from a centrally planned Soviet economy to an independent market-oriented state, but also became a source of remarkable economic growth later on. The overall growth process of the country was and continues to be driven by the attraction of foreign direct investment (FDI) in the hydrocarbon sector, and specifically to the three largest oilfields that the country could offer to international investors.

FDIs landing at major oilfields

Oil and gas resources were the only goods that the country could offer as part of its competitive advantage in international trade during the early harsh years of economic transition. The oil industry needed large-scale investments to upgrade its production and technological capacity to enter the global market. Given the circumstances and the size of the three main oilfields, consideration was given to possible partnerships with foreign companies. Subsequently, the country's first President Nazarbayev started the policy of opening up the oil industry, that was historically under the state's management, to foreign capital and signaling to global investors and oil companies to turn their attention to Kazakhstan's rich oil reserves. In his national address in October, 1997 President Nazarbayev announced: "The people of Kazakhstan and the government of Kazakhstan should direct all their efforts to create a tolerant and liberal economic field for a large transnational capital, and encourage the creation of a *"warm climate"* for long-term investments in the country." (Nazarbayev, 1997).

For foreign investors, the incentives to invest in the Caspian region at that time were many. First, international lead oil firms constantly searched for new deposits while the Caspian region was not fully accessible for international capital under the Soviet Union. Second, the region has a world-class potential of oil reserves given the size of the oilfields. Third, unleashing this potential required a level of capacity that existed only within international oil firms. Last, the produced oil will be largely exported while internal consumption is low, and that allows the extracting of profits at international prices (Ebel, 2000, p.9).

In Kazakhstan the leading international private oil companies arrived to invest in the industry in early years of independence. It is important to note that at that time in the global oil and gas industry, privately owned companies remained the largest owners in terms of foreign assets globally. In 2005 the foreign locations of the top three private oil multinational companies (MNCs) accounted for 70 percent of production indicating a high degree of internationalization in their operations and concentration in the global oil industry (UNCTAD, 2007).

The governance of foreign involvement in the oil and gas industries of host economies assumes the use of various contractual agreements: concessions, joint-ventures, production-sharing agreements (PSAs), and service contracts. The economic effects of a contract depends on its negotiated contents in relation to royalties, taxation rates, local content, training, the extent of host-country control in the decision-making process, environmental issues, and human rights (UNCTAD, 2007).

There is widespread opinion that at the time of signing of the first agreements with foreign investors, the Kazakh state did not have enough expertise and sufficient bargaining power given the economic and political circumstances when they were negotiated. The national legislation underlying the first contracts was mostly missing as well as any experience working with foreign investors. Despite the downsides, contract parties have reached the agreements that still regulate the relationships between foreign investors and the Kazakh state in the oil and gas industry (Cherdabayev, 2018).

For the early contracts there was no legal framework regulating the relationships in the area of subsoil use. These contracts were negotiated case-by-case in specific agreements with foreign investors. The first major agreement with international investors was on the development of the Tengiz field and it also received a name as *the*

contract of the century (Nazarbayev, 2006). It was based on the earlier agreements concluded during the time of the Soviet Union. In 1990, the joint venture SovChevrOil was formed and comprised of oil production company Tengizneftegaz, the regional administration and the American Corporation Chevron Overseas Company. The field camp of Tengiz was created under extreme climate and environmental conditions and accommodated around 12,000 workers on a rotating basis. However, there was a delay in production and constant disruptions to development plans due to many reasons: technology violations, failures in supply of equipment, accidents, serious errors of technological and project solutions, etc. Signing of *the contract of the century* was preceded by a couple of years of preliminary negotiations. On 6th April, 1993 President Nazarbayev and President of the Management Board of Chevron Corporation Kenneth Derr signed a general 40 year agreement on the establishment of Tengizchevroil Joint Venture (TCO) with equal shareholding by each side. For the independent Kazakh state, it was its first agreement of a global contract and it had to learn-by-doing. This agreement was important to Kazakhstan's image in front of foreign investors. It was a successful experience as new global investors subsequently joined the agreement in later years. The current structure of TCO shareholders is as follows: Chevron Overseas Company – 50%, ExxonMobil – 25%, National Oil Company (NOC) Kazmunaigas – 20%, and LukArco – 5%. TCO is not only the largest oil producer in the country but is also the biggest contributor to the budget through its tax payments. According to corporate factsheets between 1993 and 2017 direct financial payments (in form of taxes, royalties) from the TCO to the country exceeded 125 billion US dollars⁶.

The next important international contract between the Kazakh state and foreign investors was signed for the development of the Karachagank field. However, this contract is of a different nature as it is in the legal form of a PSA, which was signed in 1995 with BG Group and ENI after negotiations started in 1992. In 1997 Chevron and LUKOIL entered the venture and the agreement was finalized in November of the same year. Current shareholders of the joint venture Karachaganak Petroleum Operating (KPO) resulted from the agreement to include four international oil and gas companies operating around the world and the national oil company with the following share structure: ENI –

⁶ <http://www.tengizchevroil.com>, accessed on 3 June 2018

29.25%, Royal Dutch Shell – 29.25%, Chevron Corporation – 18%, LUKOIL – 13.5%, and NOC Kazmunaigas – 10%.⁷

In 1997 the next PSA for the development of Kashagan was signed. Apart from its huge size, Kashagan is also known as the most expensive field ever developed worldwide. Kashagan field is operated by the consortium of shareholders: ENI – 16.807%, ExxonMobil – 16.807%, Royal Dutch Shell – 16.807%, Total – 16.807%, Kazmunaigas – 16.877%, CNPC – 8.332%, and Inpex – 7.563%. For operational purposes the special entity – North Caspian Operating Company (NCOC) – was created.⁸

These agreements laid the foundation for building a friendly investment climate for FDI into the future, though there were rounds of resource nationalism (discussed in Chapter 5). Reaching an economic growth rate based on an open market economy with a high level of foreign investment was a main pillar of economic policy of the newly independent state. The country's leadership set a goal of achieving high levels of FDI as a way to overcome the transition crisis (Nazarbayev, 1997). With the arrival of FDI in oil extraction Kazakhstan achieved remarkable volumes of crude oil production, turned to international oil exporter and the hydrocarbon sector became a major source of growth over the years of economic transition.

Tough economic transition in early years of independence

In the initial years of independence Kazakhstan experienced severe economic recession that lasted for almost a decade. Reasons for such a prolonged and deteriorating output performance were manifold. Economic structures rooted to the flawed system of central planning were too weak to endure the hardships of the transition process and accommodate the unlucky sequence of harsh external shocks (Asian crisis of 1997, drop in oil prices and Russian crisis in 1998). It has been estimated that during 1991-95 total output in Kazakhstan dropped by around 40 percent while domestic prices experienced hyperinflation. A gradual loss of competitiveness of the Soviet economy as a whole had begun in the 1980s and physical disintegration of the production chains

⁷ <https://www.kpo.kz/en/about-kpo/parent-companies.html>, accessed on 3 June 2018

⁸ <https://www.ncoc.kz/en/ncoc/ncoc-governance>, accessed on 3 June 2018

between former Soviet republics after the collapse of the Soviet Union led to persistent output decline in Kazakhstan across almost all industries that themselves suffered from structural distortions inherited from the planned economy. Output decline was accompanied by excessive emigration of the population resulting in a *brain-drain* and a lack of internal sources to finance the capital accumulation that was always high during the Soviet time. All these taken together contributed to deterioration in total factor productivity. By the end of 1995 total output dropped to around 60 percent of its 1990 level while aggregate employment declined by 16 percent and aggregated investments sunk to less than 10 percent with respect to 1990 values. The fall in total output exceeding the decline in the inputs of capital and labor is explained by the combination of the following destructive processes that took place during the transition: disorganization of production and trade links, sectoral misallocation of resources, credit contraction and a decline in aggregate demand. The disorganization of production and trade arose because the traditional input and output channels (especially in relation to raw materials and intermediate inputs) were largely disrupted: what previously were simply domestic transactions became cross-border trade flows. The collapse of the Soviet Union dissolved most of these industrial linkages as they were either highly interrupted or disappeared. This in turn led to the negative swing in total output. At the same time, exposure to world prices unleashed sectoral price distortions and created incentives for labor and capital to move towards underpriced sectors – power generation, oil and gas, and nonferrous metallurgy. Despite this reallocation of labor and capital between sectors, the overall capital stock continued to decline mainly due to sharp credit constraints and the eroding profitability of enterprises. Negative real interest rates called for tightened monetary policy that led to declining credit to the economy (IMF, 1998; Collier and Goderis, 2008; Esanov, 2011; Farooki and Kaplinsky, 2014).

In 1996 and 1997 there were some signs of economic recovery backed by the dynamic growth of the hydrocarbon industry. Opening up the economy attracted substantial FDI into the extractive industries and supported the economy during the transitional recession. During 1992-1997 FDI per capita for Kazakhstan reached US\$276, for Azerbaijan US\$280, and US\$143 in Turkmenistan. These are three countries that remain as major oil and gas exporters in Central Asia. For comparison, for the same period, FDI per capita for the Kyrgyz Republic was at US\$48 and for Uzbekistan US\$16. Despite the fact that the

hydrocarbon sector at that time was seen as the main source of future long-term economic growth, though some uncertainty on transportation routes and future prices remained, sustainability of that growth was highly dependent on how wisely these resource windfalls would be managed and invested, i.e. the capacity to avoid the Dutch disease was essential (IMF, 1998).

Table 2: Growth performance in Kazakhstan, 1991-2000

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
GDP:										
in current US\$ billion	-	-	11.4	11.9	16.7	21	22.2	22.1	16.9	18.3
% to previous year	89	94.7	90.8	87.4	91.8	100	102	98.1	103	110
% to base year	100	94.7	86	75.2	69	69.3	70.5	69.2	71.1	78.1
Industry output:										
% to previous year	96.2	85.7	86.3	72.0	90.2	100	102	93.8	106	122
% to base year	100	85.7	74.0	53.3	48.0	48.1	49.3	46.2	49.1	59.9
Extractive industries output:										
% to previous year	96.4	92.1	85.1	87.4	100	102	111	100	109	125
% to base year	100	92.1	78.4	68.5	68.7	69.9	77.6	77.6	84.9	107
Manufacturing output:										
% to previous year	95.9	79.1	83.7	69.2	83.7	96.4	100	86.9	108	123
% to base year	100	79.1	66.2	45.8	38.3	37.0	37.0	32.2	34.8	42.7

The base year is 1991

Source: <https://stat.gov.kz> official web-site of Statistics Committee of Kazakhstan, accessed 15 July 2018.

The Russian ruble crisis in August 1998 reversed the positive trend of recovery sending the economy backwards (see Table 2). To support the stable exchange rate regime as a way to keep the inflation to a one-digit value and aid the output recovery, the National Bank of the Republic of Kazakhstan (the central bank) lost a vast amount of its

foreign reserves: during the period from August to December 1998 the cumulative sales of foreign currency amounted to 43 percent of the gross reserves at the end of July 1998. Unable to resolve the protracted pressure on the national currency – tenge – the central bank allowed the nominal exchange rate to depreciate by about 37 percent by the end of April 1999 compared to its July 1998 level. Eventually, in April 1999 the central bank announced the switch to a more flexible exchange rate regime. However, the level of exchange rate flexibility was controlled by the central bank. The nominal depreciation of the national currency during the Russian crisis brought some positive effects, including a real exchange rate and price competitiveness against the Russian ruble restored to the pre-crisis levels by the end of 2000. Still, when it comes to economy-wide export competitiveness, one can conclude that it was worsening due to declining FDI in the non-energy sectors, deteriorating labor productivity and an economy-wide nominal wage increase in all sectors as the negative outcome of the booming hydrocarbon industry. Together, all of these constrained the development of a more diversified export structure (Pastor and Damjanovic, 2001).

Fast growth of the 2000s and growing resource dependence

The period of weak macroeconomic performance and difficult transition ended in 1999 with world oil prices starting to climb. Kazakhstan demonstrated remarkable growth rates during the 2000s. The commodities boom of the 2000s triggered by China's solid growth and demand for resources firmly positioned the country on a resource-led economic growth path. Between 2000-2006 the average annual growth rate of the economy was around 10 percent. Extractive industries played a major role in delivering high levels of economic growth. Between 2000 and 2005 the oil and gas industry contributed half of real GDP growth, and still remains the main contributor to the state budget and the major exporting industry. Oil-led growth produced high incomes and poverty fell dramatically between 1998 and 2007 from 47 percent to 2 percent of the population. General well-being and living standards have improved considerably, which allows discussion of inclusive growth while oil revenues are seen as a blessing for the country (OECD, 2016).

Open economy, high FDIs and adherence to freely moving capital have been at the center of economic policy since the early days of

independence. Government created supportive conditions to let FDI flow into the extractive industries and facilitated the initial big oil projects. The launching of oil production and emergence of the new oil transportation routes allowed the country to become an internationally known oil exporter. Oil production grew from 25.6 mln tons in 1998 to 79.5 mln tons in 2015, and 90 mln tons in 2018⁹, making Kazakhstan one of the world's top oil exporters.

This increase in oil production was accompanied by rising oil prices and in combination with the country's weak governance capacity to deal with resource profits formed deep traps in the economic structure. The terms of trade windfalls flooding the country did not create the urge for political or economic reforms and concealed the momentousness of economic diversification. Non-traded sectors were the main drivers of economic growth while manufacturing was being squeezed. The share of real estate in total capital investments during 2001-2007 grew from 5.1 to 21 percent and in construction from 2.2 to 12.2 percent while the share of manufacturing remained less than 10 percent with the share of mining being at 24.4 percent (Esanov, 2011). The demand switched toward consumption and service industries while the tradable sectors were contracting. In general, during 2000-2007 the share of manufacturing value added as a share of GDP declined from 17.7 to 12.4 percent. Within the same period, the share of manufacturing declined from 18.9 to 14.4 percent of total merchandise exports while the share of fuel exports grew from 53.8 to 66.6 percent (WDI, 2016). The rise of the oil economy was happening as agriculture and manufacturing were collapsing (Pomfret, 2005).

Expansion of oil revenues has inflated the wage without improvements in the productivity. As Figure 1 shows the nominal wage (left axis) was climbing steadily until the recent plunge in oil prices. The nominal exchange rate (left axis) was relatively steady for almost a decade meaning that it was appreciating in real terms. Strengthened purchasing power of the national currency triggered growing wages and contributed to a consumption boom. As the next section shows, the excess demand landed to non-tradables – banking, real estate, services, trade, etc. As result, manufacturing output continuously declined (right axis) and recovered only with the start of industrialization campaign (discussed in Chapters 4 and 5). Active state interventions to promote

⁹ <https://stat.gov.kz> official web-site of Statistics Committee of Kazakhstan, accessed 13 July 2019

manufacturing are the responses to challenges of the global financial crisis and oil price drop.

Figure 1: Nominal monthly average wage, nominal exchange rate and share of manufacturing in industrial output value (in %), 1991-2019

Source: <https://nationalbank.kz/ru> official web-site of National Bank of Kazakhstan, accessed on 4 February 2021;

<https://stat.gov.kz> official web-site of Statistics Committee of Kazakhstan, accessed on 4 February 2021

The expansion of resource exports also erodes conditions for inflow of investments in manufacturing. For example, the empirical evidence in the literature reveals that on average oil related booms in FDIs are accompanied by stagnation in non-oil FDI. For existing oil producers, a doubling of the resource rent is associated with a 12.4 percent fall in non-resource FDI while for countries with new oil discoveries the fall in non-resource FDI reaches 16 percent in the short-run and 68 percent in the longer term. The final outcome is that aggregate FDI falls by 4 percent with a doubling of oil related revenues harming development of the rest of an economy in the longer run as

contraction in non-resource FDI might outweigh the boom in oil-related FDI (van der Ploeg, 2016).

Overall, despite Kazakhstan's economy has undergone a deep transformation since its independence, turning from a centrally planned economy to an open market-based economy, it has generated deep structural traps. Economic activity relocated to the extractive industries while leaving agriculture and manufacturing behind and resulted in a much narrower economic (and industrial) base. The share of extractive industries in gross value-added increased from 20 percent in 1990 to 33 percent in 2010. In particular, the share of value-added from oil, gas and mining rose from 8 percent to 20 percent during this period (OECD, 2016). Increased dependence on oil wealth is one of the major traps hampering the development of other industries and constrains the long-term economic growth due to the volatility associated with natural resources led development, i.e. *boom-bust* cycles.

Boom-bust cycles: channels of transition and lessons learned

According to the World Bank, for mineral economies in Eurasia,¹⁰ resource wealth contributed to development in many ways. These economies succeeded in attracting foreign investments and accumulating capital from resource revenues. Increased resource revenues during the commodities super-cycle of 2000's improved the living standards in the region substantially, while general poverty levels halved on average. Oil wealth contributed to infrastructure development as well as created grounds for integration to global markets by increased foreign trade, both through exports and imports. Production structures benefited from moving away from a planned to a more market-based economy and experienced the emergence of new industry, primarily services. Despite all these positive aspects of the rapid development of the mineral economies in Eurasia, there is a trend towards increased resource dependency with declining manufacturing, volatility of economic growth and slow institutional reforms (World Bank, 2014).

¹⁰ These are oil and gas producing countries like Russia, Azerbaijan, Turkmenistan and Kazakhstan

When external oil price shocks transmit to domestic economy, oil exporters experience *boom-bust* cycles. An ability to prevent these cycles is crucial in delivering sustained long-term growth. In Kazakhstan resource rents released a range of transmission channels for oil price volatility to the domestic economy. These transmission channels included: the fragile and underdeveloped banking system that was highly reliant on foreign savings; the pro-cyclical fiscal policy that cut expenditures as oil revenues drop; the appreciated exchange rate that harmed the competitiveness of non-resource industries; the relocation of labor and capital away from the tradables sectors; and the expanding oil rents that opened the way for corruption and rent-seeking (OECD, 2016).

In Kazakhstan the economic growth prior the last financial crisis, despite its remarkably high levels, was missing a quality component and has not been mirrored in the improved institutional framework but largely driven by increased oil rents. Corrupt bureaucracy, an inefficient financial sector, flawed privatization of large enterprises, lack of competition, and limited protection of property rights, all hindered the promotion of non-oil industries and the development of new private enterprises while political development has been characterized by rent-seeking and weak checks and balances from civil society (Pomfret, 2005).

The last financial crisis and the recent dramatic drop in oil prices disclosed the hidden vulnerabilities. Ample oil export revenues were coupled with a boost in domestic asset prices while the exchange rate appreciated by 18 percent in real terms during 2006-08. At the same time, large capital inflows undermined financial prudence in the banking sector allowing extreme borrowing on international markets. As the global financial crisis unfolded, the financial turmoil soaked into the country through its fragile banking sector and revealed structural imbalances that were covered by high oil rents. The financial crisis affected the economy in many ways, resulting in declining export revenues due to a dramatic drop in the oil price and the weakening world economy; and economic growth falling to 3.3 percent in 2008 from 8.9 percent in 2007, and 10.7 percent in 2006. The economy changed from a *boom* to a *bust* cycle as the domestic banking system faced an international liquidity crisis: local banks were heavily exposed to short-term funding on the international financial markets while domestic savings remained low. Weak banking supervision and regulation relied heavily on liberal international regulatory practice

and did not restrain excessive external borrowing. Local private banks funded the consumption boom that the country experienced in the mid-2000s. Banks borrowed from abroad as domestic savings remained small and provided credit to finance booming consumption in the country. High economic growth rates and improvements in the country's credit ratings backed by growing resource revenues allowed the local banks to borrow heavily against the good macroeconomic performance indicators of Kazakhstan's economy. The external debt of the banking sector grew quickly from US\$8 billion to US\$46 billion during 2005-2007 reaching 42 percent of GDP. Banks directed the credit to sectors with fast returns – housing construction, real estate, and consumer credits – and by the end of 2007 such lending amounted to 30 percent of GDP contributing to the emergence of severe asset bubbles in the economy (World Bank, 2013). Fiscal policy was prudent in introducing modern institutions to manage resource wealth and avoid pro-cyclicality in fiscal spending. The National Oil Fund by the end of 2008 accumulated US\$27 billion, equivalent to 21 percent of GDP. The government of Kazakhstan was prudently saving resource rents in the National Oil Fund and kept public debt low. Still, it overlooked the impact of extensive borrowing by private banks on the economy, which jeopardized any presence of prudence on the part of the government. Esanov and Kuralbayeva (2008) named this scenario the *Ricardian curse* of the resource windfall.

When external credit dried up local banks failed to roll over their liabilities, freezing the provision of credit in the face of a dramatic fall in the quality of the credit portfolio while the consumption bubble collapsed. To avoid the complete breakdown of the banking system the state reacted with its generous anti-crisis plan funded from the National Oil Fund. The stimulus package totaled US\$21 billion (World Bank, 2013), equivalent to 14 percent of GDP. In turn, bailing out the banking industry opened the doors for using public funds for every emergency case and as the economy faced the new shock of low oil prices such cases became widespread while the state turned to a major provider of financing as the banking sector remains fragile and small¹¹.

Though the ample stimulus package that aimed at capital injection to banks, economic sectors (mainly construction) and small

¹¹ Total bank assets at the beginning of 2019 are around 43% of GDP – much lower than the pre-crisis level – at 87% of GDP at the beginning of 2007 (National Bank statistical data)

business enabled a fast recovery – the average growth rates during 2010-2013 returned to about 6.5 percent – the oil price plunge in 2014 followed by continuing decline in world oil prices had more dramatic consequences for all the oil exporting economies. The oil price dropped by a half in 2014-2015 indicating the end of the commodity super-cycle that began in the late 1990s.

The underlying factors for such a dramatic price drop are rooted to a change in fundamental supply and demand conditions: the rise in the supply of unconventional oil due to technology advancement; and a change of the Organization of Petroleum Exporting Countries (OPEC) policy to maintain production levels as its members were challenged by growing supply from non-member states. Overall, lower oil prices will shift the real income from oil-exporters toward oil-importers. By some estimates, the decline in the oil price by 45 percent could bring around 0.8 percent growth in global GDP in the medium-term and a 1 percent temporary decline in inflation in the short-run. Still, due to price rigidities, the positive impact of low oil prices will take time to materialize in oil-importers while oil-exporters will experience immediate impact. There are various channels through which lower oil prices affect oil exporters. The most direct channels are loss in export revenues that in turn affects the fiscal and monetary stance of the country through budget spending and the exchange rate and impacts demand in the economy. Lower oil prices call for policies to redouble efforts for economic diversification in highly vulnerable oil-exporters (Baffes et al., 2015).

The extent of the vulnerability of oil exporters to oil price fluctuations is proxied by scholars using a composition of indicators: quality of institutions reflected in aggregate indices such as the Human Development Index, political stability index, etc.; the size of the readily available financial buffer (i.e. sovereign wealth funds that accumulate oil related revenues, for example, in Kuwait and the United Arab Emirates such funds amount to 300 percent of GDP); and the role of oil in the economy (i.e. share of oil exports in GDP or government revenues to indicate the state budget dependence on oil revenues). Using these accumulated indicators Vandyck et al. (2018) find that for oil-exporters, on average, the elasticity of GDP and government revenue increases with respect to the oil price for those countries with a higher dependence on oil exports, i.e. there is a strong co-movement between macroeconomic performance and oil prices. The authors find, however, that for oil exporters with more diversified economies – e.g. United

Arab Emirates – the elasticity is lower. Moreover, they also estimated the macroeconomic impacts of a 60 percent drop in the oil price¹² for the world and oil exporting regions. The impact varied: in Central Asia and the Caucasus GDP declined 15.2 percent; in North Africa 2.8 percent (explained by low economic structure and low oil dependence in consumption); and in the Middle East and Sub-Saharan Africa 8.5 percent. The authors conclude that countries with a high share of oil exports are vulnerable to short-term oil price declines and given such sensitivity these countries will gain from a range of policies aimed at limiting the exposure to oil price fluctuations that include: establishing a sovereign fund; improving fiscal and monetary policy capacity; a fairer distribution of rents; and economic diversification.

The call for active policies and structural reforms in oil exporting countries becomes apparent in the presence of three major threats: low oil prices that are about to persist in the longer-run; climate mitigation policies gaining force around the world; and technological innovations to substitute fossil fuel as a primary source of energy. These threats can strongly depress oil prices for long periods and affect oil companies by changing their investment incentives and elevate the risk of stranded assets in oil exporting countries. Oil exporters that failed to create buffers (i.e. financial, physical and human wealth) during the resource windfalls will be hit the most and how they should respond to such threats remains an open question. Many oil exporters have exploited unsustainable economic policies during resource windfall periods (i.e. inefficient import substitution favoring uncompetitive local producers; *white elephant* projects; excessive welfare benefits and inflated public sectors) and are ill-prepared to deal with these three threats making them worse off by being in a position from where it is very hard to open the way for sustained growth. One durable solution is offered by investing in sound institutions, economic infrastructure, and human capital to build a more resilient economic structure capable of delivering growth without much reliance on oil revenues (van der Ploeg, 2016).

In this respect Kazakhstan is not an exception. Resource-led growth was not accompanied by a change in the quality of institutions to solidify the growth momentum. Industrial policy failed to achieve its

¹² That actually happened when oil prices dropped from 100-120 US dollars per barrel to less than 50 US dollars in mid-2014 and reached 26 US dollars per barrel in March 2016)

main goal – creation of a diversified economic structure – as the economy became highly vulnerable to external shocks. Under-investment in manufacturing with FDI concentrating in extractive industries, weak administrative capacity to implement economic policies, and unfavorable conditions for expansion of the private sector are the main sources of diversification policy weakness. Despite active state interventions there was an under-supply of appropriate institutions for economic diversification in the period of high oil prices. As the outcome, building of a resilient economic structure through arrival of strong and competitive non-resource industries is constrained.

The failure of Kazakhstan to deliver diversified industrial structure at the macroeconomic level is captured in the remained high share (more than 50% on average) of oil exports in total exports. Political leadership has always put a great emphasis on the importance of oil exports for formation of income. In 2012 after successful and fast recovery from the financial crisis, President Nazarbayev announced a new long-term development vision – to become one of the Top-30 advanced economies by 2050. The vision is reflected in a state-planning document called Strategy 2050. Among ways to achieve this vision special attention is given to natural wealth. In anticipation of any future crises it is justified to expand the production of oil and gas in order to save as much revenue as possible before prices drop (Nazarbayev, 2012).

However, after the recent plunge in oil prices the rhetoric has changed. With low oil prices, the growth rate decline continues and affects even the long-term national growth aspirations – these are now much more modest despite the ambitious vision in place. It is now recognized that it is critical moving to a new qualitative model of economic growth that categorically discards the domination of quantitative growth intrinsic to times of high oil prices. The Strategic Plan 2025 adopted in 2018 as a way to incrementally implement Strategy 2050 puts an emphasis on industrialization and diversification via promotion of new manufacturing industries – e.g. high-tech, machinery, and chemicals. To support development of new local industries, structural reforms are envisaged to create favorable conditions for the development of competitive firms, expansion of the private sector, boosting productivity, promoting manufacturing exports and increasing the level of export complexity. It is expected that the emergence of new highly competitive industries will diversify the

economy away from the current dependence on oil exports, increase the level of economic complexity and deliver a more resilient economic structure backed by expanded non-resource exports and capable of withstanding external oil price shocks (Strategic Plan 2025). Thus, the lesson learned from resource-led growth after several rounds of external shocks is importance of arrival of strong manufacturing industries to deliver economic diversification and reduce vulnerability to oil price fluctuations.

This brief review of macroeconomic development of Kazakhstan shows that it failed to link expansion of oil extraction with general development and increased sophistication of the economy. Political leadership has always justified attraction of FDI in oil industry with the economic benefits that this will bring to local industries and proliferation of local economic activity (as discussed in details in Chapter 4). This study strongly believes that maximizing the positive impacts of FDIs at macro-level is dependent on capturing the benefits at the micro-level. As the next section and Chapter 4 show, there is an inducement mechanism, which allows the growth process to transmit from the oil industry to other industries. This happens at the level of enterprises when they start to do business with each other. When the larger numbers of local firms are capable to economically link-up with the FDI client, gains are accumulated at the macroeconomic level in the form of increased domestic production and income. At the same time, capacity of a local firm to enter in business relationship with FDI client is driven not only by its individual characteristics but also by the external environment in which the firm operates. This is the area where linking micro to macro becomes plausible.

1.2. Research Question and Problem Statement

The discussion above has emphasized the leading role of oil exports in the growth process in Kazakhstan and highlighted the shortcomings of such resource-led growth. The literature reveals that mineral economies need to be active in promoting economic diversification to create a more resilient industrial structure. The academic debate on how this could be achieved evolves around discussion of two strands of thought in the development economics -

the balanced and unbalanced growth theories. Examining such a prominent debate would help in the formulation of the research question of this study.

The debate originates from the structuralist scholars focus on structural disequilibrium and the process of economic development. As Chenery (1975) notes, in the structuralist approach the growth process is explained by the properties of demand and production functions and other specificities of economic behavior. Though classics of the development economics discipline placed an emphasis on the importance of economic transformation, i.e. diversification of the economic structure, there were different views on its transmission mechanism.

Rosenstein-Rodan (1943) and Nurkse (1957) pioneered balanced growth theory and put arguments for a large-scale planned industrialization based on the complementarity idea. While Rosenstein-Rodan (1961) argued that industrialization policy should be driven by simultaneous and synchronized investments across all basic industries, i.e. the *big push*, Nurkse strongly advocated for a large-scale domestic industrialization program by stimulating both the demand and supply side, i.e. promotion of balanced growth. As Nurkse puts it, the mechanics of balanced growth in a nutshell is as follows: "... a low-income country through a process of diversified growth can seek to bring about upward shifts in domestic demand schedules by means of increased productivity and therefore by increased real purchasing power. In this way, a pattern of mutually supporting investments in different lines of production can enlarge the size of the market and help to fill the vacuum in the domestic economy of low-income areas." (Nurkse, 1957, p. 334)

The balanced growth theory with its emphasis on expansion of domestic output, removal of imports from the domestic market, and enforced savings received its wide application as import substitution industrialization (Cypher and Dietz, 2004). Furthermore, contemporary models highly utilized by international donor organizations (like the World Bank) rely on ideas of balanced growth in providing policy advice for developing countries for poverty-reduction programs assuming simultaneous improvements (i.e. investments) in many areas and, thus, promote structural change (Bass, 2009). Vishny, Murphy and Shleifer (1988) discuss balanced growth and argue that *no-industrialization trap* could be avoided by developing countries with coordinated investments across sectors through various state

interventions. The authors conclude that a simultaneous industrialization program is associated with lower explicit costs compared to piecemeal industrialization "... because of potentially large implicit subsidies flowing across sectors." (p.29).

The balanced growth doctrine despite its prominence has also received strong criticism. Such criticism builds upon the arguments that the balanced growth model fails to deliver the structural change in the economy as it reproduces the same structure but of a larger size. Hence, balanced growth models require modification to grasp the phenomenon of structural change. For example, Kongsamut et al. (2001) propose a generalized balanced growth model that retains the features of the balanced growth model and is compatible with structural change.

According to Kuznets (1971) one of the distinct characteristics of modern economic growth is the high rate of structural transformation. Kuznets explicitly notes that structural transformation relates not only to the shifts from agriculture to industry and services but most importantly to rapid change in structures of society and ideology. Hence, rapid economic growth of today's industrialized countries was driven by the change in economic structures (i.e. economic diversification) and organization of economic activity that in its turn was backed by the fast institutional and ideological transformation. Kuznets points out that for economic advancement to take place in developing countries, most of the innovations need to happen in social and political structures through long periods of experimentation with those structures to arrange the setting most compatible with economic growth. Most importantly, such innovation needs to offer ways to adjust and minimize social and economic costs, which arise during the structural change, that drive the productivity and lead to economic growth (Kuznets, 1971). Kuznet's ideas suggest that the development process, especially at the initial stage, happens with a high degree of imbalances.

Though the balanced growth theory had a lot of supporters, the unbalanced growth theory, proposed by other prominent economist - Albert Hirschman, provides an alternative view on the process of economic development. Nurkse himself contributed to the debate by arguing that economic advancement through *isolated* sectors promotion is also possible but "... may be a snail's pace of progress", which is evidenced by "... the frequently observed fact that foreign direct investments in extractive export industries have created high

productivity islands in low-income areas and have had little impact on the level of productivity in the domestic economy.” (Nurkse, 1957, p. 334). The strongest argument for balanced growth provided by Nurkse is that developing countries tend to have smaller domestic markets and this weakens incentives for investments in capital formation. The other important point is that Nurkse argues for import restrictions to stimulate domestic production of import substitutes, though this might result in expensive and inefficient domestic substitutes. In his discussion of balanced and unbalanced growth, the latter is more associated with international specialization. Though Nurkse was pessimistic about the export-led growth, according to him balanced growth is still compatible with comparative advantage but the transmission of growth should go toward diversification and growth of domestic output.

On the other hand, in his influential book *The Strategy of Economic Development*, Hirschman proposes clear views on the development process. First-of-all, he strongly argues that there should be an inducement mechanism in place to deliver developmental decision-making process: “each development move requires “its” decision” (Hirschman, 1958 p.27). With this idea in mind he then offers effective inducement mechanism for developing countries or as he names them - *underdeveloped* countries. His view is based on a strong and valid assumption that the development process in underdeveloped countries is constrained by resource scarcity in all kinds of areas – lack of capital, skills, including entrepreneurial and managerial – that holds back the development. Given those rampant market and coordination failures existing in underdeveloped countries, their development is seen as “... the process of change of one type of economy into some other more advanced type.” (p.51-52). This, however, cannot happen simultaneously on many fronts, i.e. in a *balanced* growth style. For such a change to take place there should be a more efficient inducement mechanism in place and Hirschman suggests that it is more of an *unbalanced* (or sequential) nature. The concept of unbalanced growth is based on the following critique of balanced growth doctrine. As Hirschman argues, the balanced growth doctrine departs from the idea that reaching the balanced demand is possible in underdeveloped countries. Balanced demand means that there is a simultaneous development of many industries that support each other’s growth by mutual demand and drives industrialization. However, this situation is highly unlikely due to the mentioned resource scarcity. Bringing the

demand in balance could be achieved through centralized planning of the economy and policy interventions but this is again an unrealistic scenario since large-scale developmental decision-making is in scarce supply in underdeveloped countries. Thus, neither market forces nor the state are strong enough to induce large-scale simultaneous growth across many industries. As Hirschman simply puts it with regard to the development process: "At any one time the available developmental skills of a country set some kind of a ceiling on the number of projects that can be undertaken simultaneously." (p.55)

Based on these observations Hirschman proposes to look at development as a sequence of misbalance on the supply side: "with growth being communicated from the leading sector of the economy to the followers, from one industry to another, from one firm to another." (p. 63). To him this sequence seems to be more realistic as it offers considerable scope for induced investment decisions – the ones that arise as a response to the appearance of new projects and ventures (p.71). This inducement mechanism works mainly through two effects: (1) input-provision, i.e. "every nonprimary economic activity, will induce attempts to supply through domestic production the inputs needed in that activity" (p.100) – backward linkage; (2) output utilization, i.e. "every activity that does not by its nature cater exclusively to final demand, will induce attempts to utilize its outputs as inputs in some new activities" (p.100) – forward linkage. Linkages are capable of providing guidance to decision-makers (both private and public) on the direction of development action and economize on those scarce resources in underdeveloped countries. Due to this inducement mechanism, Hirschman sees unbalanced growth as the most realistic and appropriate development strategy. Thus, under unbalanced growth the spurt in one sector with high linkages potential (e.g. iron and steel as mentioned by Hirschman) generates investment decisions in satellite industries with strong locational advantage (p.102) and opens the prospects for the process of industrialization.

The distinction of sectors by their linkage potential as well as developmental potential of the type of linkage is important to discuss. Hirschman argues that industrialization through backward linkages is much more agile compared to forward linkages. Backward linkages arise as a result of demand pressure and work as an independent inducement mechanism while forward linkages are less likely to appear in a pure form but rather in combination with backward linkages (p.116). At the same time some industries exhibit much stronger

potential for linkage creation, e.g. manufacturing compared to mining and other types of primary production. This is why Hirschman explicitly mentions the undesirability of complete specialization in underdeveloped countries in primary production as these industries tend to operate as enclaves, especially if owned by foreign operators. In this case such industries become “enclave export industries” and offer very few developmental opportunities or effects. However, at this point Hirschman makes an exceptional explanation that is highly relevant to this research. Specifically, he argues that: “The grudge against what has become known as the “enclave” type of development is due to this ability of primary products from mines, wells and plantations to slip out of a country without leaving much of a trace in the rest of the economy. Naturally, hostility to the profits earned by foreign companies plays an important role in such attitudes; but the absence of direct linkage effects of primary production for exports lends these views plausibility that they do not have in the case of foreign investment in manufacturing. I say plausibility rather than validity, for while as such the primary production activities leading to exports may exert few developmental effects, they do finance imports which can become very powerful agents of development...” (Hirschman, 1958, p. 110)

This is a strong message allowing us to conclude that in countries specializing in exports of primary goods, including extraction of minerals, it is still possible to catch-up in the industrialization process through the desire of local entrepreneurs to produce goods and services that are imported at a large scale. Thus, the backward linkage effect works as a development mechanism through import-substitution. Indeed, Hirschman confirms that this channel could be a powerful development strategy as soon as imports pass the threshold of minimum economic size (p.113) that is sufficient to trigger domestic entrepreneurs to enter new activities based on the pressure of existing demand. In this respect, imports play a catalytic role in development and “... countries tend to develop a comparative advantage in the articles they import.” (p. 122). This means that if there are substantial trade inflows of specific goods, underdeveloped countries can utilize unemployed capital and labor resources to specialize in domestic production of those imports (p.123). In this sequence, there is no particular alternative of developmental impacts between export-promotion and import-substitution: exports are needed to create income for imports while the latter create and map the demand for the next development move (p.124). Overall, Hirschman sees the

industrialization process in underdeveloped countries as driven by three major factors: (1) developmental role of imports; (2) pivotal role of backward linkages; and (3) coexistence in one economy of modern industries with handicraft and cottage industries (p. 125). The last feature makes it rational for underdeveloped countries to focus on fostering capital-intensive industries with broad product horizon and potential for installment of linkages (p.131).

Thorbecke (2007) argues that similarities between the balanced and unbalanced growth concepts are more important than the difference in their prescriptions. In particular, both emphasized the importance of inter-sectoral linkages in the development process, and, thus, contributed to expansion of the analytical framework based on the dual-economy model to a multi-sectoral approach. In particular, Hirschman strongly believed that industrialization in developing countries should be pursued by promotion of a set of key (in particular, capital-intensive) sectors first. The reason for that is, firstly, there are limited resources in developing countries that demand prioritization, and, secondly, the entrepreneurship drive will address those imbalances (i.e. overcapacity) created by uneven growth of specific sectors and generate growth (Cypher and Dietz, 2004).

Streeten (1959) in the overview of balanced growth agrees that the doctrine is right when applied to the case of unwanted production, however, it is wrong if it points that unbalanced growth would necessarily delay growth. He explicitly demonstrates that the critical assumption of balanced growth – complementarity – also holds for the unbalanced growth. Still, in taking the decision in which order to organize investments, the unbalanced growth theory could be more instructive by pointing at the spots for action and, thus, economizing on scarce resources. The strong case for unbalanced growth is that *growing points* will provide a powerful impetus to the cluster of complementary investments and activities. Such dynamics may not unfold: “Only if the forward flow of energy is impeded in all directions by a successions of bottlenecks (if these were logically admissible), and if the backward pull of the passive sectors is stronger than the forward push of the active sectors, is balanced advance indicated.” (p. 183).

Acemoglu and Guerrieri (2006) provide a theoretical model to demonstrate that there are natural supply-side reasons for economic growth to follow the unbalanced path. Such dynamics arrive from differences in factor proportions across sectors accompanied by capital deepening efforts: capital investments in capital-intensive sectors will

raise output more in those sectors. Consequently, the resulting economic growth is always of unbalanced nature irrespective of the source of growth and the accumulation process.

Sachs and Warner (1999) discuss whether resource booms could provide a solid ground for a big-push type of industrialization since such booms are associated with a dramatic expansion in demand – one of the major pillars of the big-push doctrine. With the help of a theoretical model, the authors show that a resource boom helps to set in motion the big-push dynamics and supports industrialization.

Based on the discussion above a conclusion could be made that any resource abundant country could follow either a balanced or unbalanced pathway to development, since natural wealth is compatible with both of them. Within resource rich countries there are those that managed to successfully industrialize and set up a diversified economic structure. However, a number of developing countries are still trying to sow the seeds of development backed by commodities exports. The empirical evidence also shows that such a relationship is possible (Brunnschweiler, 2008). Massive development of extractive industries in the last 60-70 years opened the way for emergence of the new approach for analyzing the relationship between natural resources and economic development. There was a new wave of thinking on the resource-led development through building of inter-sectoral linkages (Andersen et al., 2015). The experience of industrialized resource abundant countries and the academic literature support the view that the dynamics of resource-based industrialization in the era of globalization unfolds in an unbalanced growth pattern. More specifically, economic diversification in resource abundant countries relies extensively on the active promotion of linkages between extractive and non-resource industries (Kaplan, 2016). Hence, it is viable to apply Hirschman's ideas on unbalanced growth to the process of industrialization in a resource abundant country, in particular to Kazakhstan.

The overview of the growth dynamics above suggests that despite the policy efforts, it looks like Kazakhstan ended-up with a highly unproductive industrial structure due to the domination of the oil industry. However, such a conclusion might be premature given the positive impact of the oil industry on growth inducement as discussed above. In order to understand how to move forward on the industrialization agenda for mineral economies facing lower oil prices, it is important to reflect on what went right and wrong during the past

period. Hence, it makes sense to analyze the progress in Kazakhstan's industrialization strategy from independence to the last oil price crisis (2014-2016) and apply economic theory to understand this process. There should be an underlying process that transfers the growth in one industry to the rest of the economy and specifically helps to achieve higher industrialization. If such a process is not in place, the decoupling of economic growth from the industrial structure will be observed making the oil exporting country prone to Dutch disease and hinder the process of development. Economic theory offers a concept of such an underlying process. Through the application of economic theory, this research aims to understand the industrialization dynamics in Kazakhstan. In particular, this research aims to address the following universal research question:

To what extent has the industrialization strategy of Kazakhstan since its independence in 1991 been in line with the concept of unbalanced growth as suggested by Hirschman?

This research is attempting to apply the concept of unbalanced growth and Hirschman's views to the industrialization process in Kazakhstan. As Hirschman revisits *The Strategy* in his later works and provides further interpretation on what unbalanced growth means for commodity exporting countries, Hirschman still serves as an advocate for his concept with some additional explanations. In particular, he argues that the linkage concept is a powerful instrument in understanding and explaining the industrialization process in commodity exporters in greater detail. This is achieved with further theoretical expansion of the linkage concept itself. To apply the linkage concept with special reference to primary goods exporters, he introduces fiscal and consumption linkages in addition to backward and forward linkage to capture the dimensions and better reflect on the ways through which resource exports can induce economic growth. It turns out that different types of commodities generate different types of linkages or their constellations – some are more supportive to the emergence of backward linkages while others offer conditions for occurrence of fiscal linkages through taxation and royalties. As a result, based on the abilities that exist in the country it is possible to utilize these linkage opportunities and follow the export-led growth (Hirschman, 1984, p.98). Most importantly, the unbalanced growth concept assumes that forces that restore the balance and bring the system to a new equilibrium are strong enough to do so. According to Hirschman, those forces are not only market forces (*invisible hand*) but

also the role of the state, political resources, and societal and mental constructs that exist in the country. As he explicitly argues, the unbalanced growth process should be seen as “... something fueled and justified by the “energy which holds together” the various sectors and branches of the economy and which would ensure that the various imbalances would be approximately self-correcting.” (1984, p. 105). In this respect, the application of the concept of unbalanced growth for the case of a specific commodity exporter is essentially valid in combination with the analysis of the institutional setting of the country, development policies in place as well as governance capacity and social, economic and political context that surround the export-led growth. This research is attempting this approach and it does so on the example of one industry, oil and gas machinery and equipment production in Kazakhstan. The overarching research question will be further refined and operationalized in Chapter 4 to guide the analytical process in a more structured way.

As Chapter 4 suggests, the task is to explore the following dynamics of the unbalanced growth:

Figure 2: Research question explained with unbalanced growth sequence

Source: Adapted from Hirschman (1984)

As suggested by Hirschman, a boom in one sector will set in motion an inducement mechanism to initiate investments in other (in

particular, supplying) industries and deliver output growth in such industries. Hence, the interest is to explore the shaded area on Figure 2. This area is the simplest depiction of the linkage effects. There is an underlying process that calls the backward linkage effect to manifest itself and transfers the growth in one industry, e.g. oil, to another, e.g. oil and gas machinery and equipment. If Kazakhstan was successful in utilizing the unbalanced growth sequence, then we should see expansion in local industries, especially the ones that supply the oil industry. Overall, this would lead to emergence of the more diversified economic structure. The task of this research is to explore this process, its drivers and bottlenecks.

The rationale for such explorations is explained by the following underpinnings. Kazakhstan has one of the largest oilfields in the world operated by international investors and operations at these oilfields largely rely on special equipment and machinery, most of which are imported at a very large scale given the size of the oilfields. For example, Tengiz - the world's deepest super-giant oilfield, operated by TCO, is currently under expansion and the investment project, called the Future Growth Project, is one of industry's seminal projects in the world with total costs at US\$36.8 billions. At Karachaganak there are capacity expansion plans to increase production with capital investments around US\$7 - 9 billions. In the next five years around US\$5 billions will be invested in the expansion of Karachaganak, with the drilling of new wells to maintain a long-term high level of production at the oilfield¹³. Kashagan, the biggest off-shore oilfield in the country operated by the consortium of leading international oil firms comprising Shell, Total, ENI, ExxonMobil and CNPC, is believed to be one of the highest development costs in the world, around US\$55 billions, due to its technical complexity.¹⁴ Kashagan is developing in phases due to its size. The technical complexity of the field, its size, safety, environmental, engineering and logistical challenges of the offshore location have increased the development cost. It is one of the largest and most complex industrial hydrocarbon projects ever developed. The development of Kashagan alone requires construction of various drilling and production facilities as well as supporting infrastructure that includes drilling centers, offshore processing hubs

¹³ <http://expertonline.kz/a15114/>, accessed 18 October 2019

¹⁴ <https://www.reuters.com/article/kazakhstan-kashagan/update-2-kashagan-oil-field-starts-commercial-output-idUSL8N1DM1QP>, accessed 5 September 2020

and gas plants, a large-scale onshore processing facility, hundreds of kilometers of infield pipelines, power cables, and trunk lines, etc.

Given their size, these three projects alone create a huge demand for a wide range of industrial goods and potentially could exhibit strong positive spillovers (i.e. linkages) to local industries. The important point to note is that the oil industry is highly capital intensive and consequently does not generate much employment. For example, the total number of workers in extractive industries (mining, oil and gas together) in 2010 was 198 600 people (around 2 percent of total employment) and in 2018 it was 286 200 people¹⁵ (around 3 percent of total employment). Although the industry is expanding, it is not providing more employment opportunities due to its capital-intensive nature. Consequently, most opportunities for externalities from oil extraction operations arise through value-addition from local sourcing of goods, works, and services. As an example, Figure 3 illustrates the oil and gas value chain and types of goods required for upstream activities.

The Caspian Sea is seen as one of the top areas for oil and gas equipment markets due to the large upstream projects in Azerbaijan and Kazakhstan. In 2015, the world market was estimated at US\$168 billion.¹⁶ In Kazakhstan demand for oil and gas equipment in 2018 for the coming three years is estimated at US\$2 billion. Local producers could potentially cover this demand for industrial goods but it is not happening. For 2019, the total value of procurement of goods, works and services in the oil industry is estimated at US\$13.5 billion with the share of goods at US\$1.46 billion. However, it is estimated that only 11 percent of this value of goods could be sourced locally, i.e. US\$170 million, while the rest will be imported.¹⁷

Procurement of goods and services in the oil industry is remarkable by its size. For example, NCOC operating at Kashagan oilfield reported cumulative payments to local suppliers for goods, works and services in 2017 of US\$13.7 billion since the start of operations in 2004. In 2017 NCOC spent US\$328 million for local procurement, or 32 percent of total expenditure. KPO, which operates Karachaganak oilfield, spent US\$530 million in 2016 on local

¹⁵ <https://stat.gov.kz> official web-site of Statistics Committee of Kazakhstan, accessed 15 July 2019

¹⁶ <https://www.trade.gov/topmarkets/oil-and-gas.asp>, accessed on 5 May 2018

¹⁷ Reported at the Machinery Forum in September, 2018

procurement, or 51.6 percent of total expenditure. The largest amount of local procurement of US\$3.5 billion in 2018 is at Tengiz oilfield due to its ongoing expansion. The share of local procurement in total expenditure in 2018 at Tengiz reached 36 percent¹⁸.

Figure 3: Upstream oil and gas value chain

Upstream value chain	Goods
<ul style="list-style-type: none"> • Exploration (1-5 years) <ul style="list-style-type: none"> • Geological surveys: aerial and satellite photography; seismic suveys • Limited opportunities for local suppliers • Appraisal (4-10 years) <ul style="list-style-type: none"> • Exploratory drilling • Development (4-10 years) <ul style="list-style-type: none"> • Building of infrastructure for site access • Commercial viability check • First oil and gas produced at the end of the phase • Limited opportunities for local suppliers • Production (20-50 years) <ul style="list-style-type: none"> • Full-scale drilling • Infrastructure development. Oil and gas reserves are extracted and transported for processing and distribution • Better opportunities for local supplies. Once major production facilities are in place, the demand for inputs declines relative to the value of output produced. • Decommissioning (2-10 years) <ul style="list-style-type: none"> • Returning the site to original state as close as possibly 	<ul style="list-style-type: none"> • Subsea equipment: Wellheads, Sub-surface Safety Valves, Compressors, Meters, Separators, Risers, Umbilicals • Downhole equipment: Casing hardware; Completion Equipment, Drilling tools, Wireline Logging Tools, Perforating Systems • Tubes: Drill Pipe, Casing, Tubing, Manifolds • Rigs and Platforms: Land Rigs, Offshore Fabrication, Vessel Conversions, Rig Equipment, Unit Manufacturing • Rotating equipment: Compressors, Blowers, Turbines & Pumps • Static equipment: Surface Equipment, Columns & Exchangers • Pipes, Valves & Fittings • Electrical equipment: Transformers & Switchboards, Drive Motors, Cables • Control: Sub-surface Sensors, Surface Production Monitoring (e.g., Separators, Multi-phase Flowmeters) • Fluids and Chemicals: Drilling & Completion Fluids, Upstream Specialty Chemicals • Other materials: Drilling & Completion Fluids, Upstream Specialty Chemicals

Source: Adapted from Tordo et al. (2013) and Darko (2014)

Overall, in 2018 total procurement of goods and services in the oil industry in Kazakhstan was estimated at US\$16 billion, or 9.4 percent of GDP and the share of three major projects in total

¹⁸ Corporate web-sites of oil operators: <https://www.kpo.kz>, <https://www.ncoc.kz>, <http://www.tengizchevroil.com>, accessed on 3 February 2020

procurement was 77 percent. At the same time, the share of locally sourced goods, not counting services and works remains low at around 7-12 percent. In 2018, the biggest share of locally sourced goods belongs to electricity, gasoline and construction materials.¹⁹

Despite the large total volumes, the share of procurement of local industrial goods remains low, especially when it comes to technologically complex goods, like oil and gas equipment and machinery. Major oil and gas equipment is imported mainly from Germany, Japan and the United States. For example, in 2018 the share of imports for pipeline tubes was 79 percent, pumps – 69 percent, generators and compressors – 97 percent, and valves – 91 percent.²⁰ The general problem is that despite the fact that oil operators at the three major oilfields spend substantial amounts on procurement of locally sourced goods, these are mostly the goods with very low value-added or of low technological complexity.

Examination of the reasons for the weak competitiveness of local suppliers relative to imports of technologically complex goods to the three major oilfields is a useful exercise as it explores the process of technological, organizational and institutional development of local suppliers. Oilfields are not only a source of rents paid to the state budget but also more importantly provide a potential platform for the emergence and growth of local industries as suppliers of manufactured goods. Fulfillment of the ambitious national vision to be in the top 30 countries by 2050 requires development of local industries, including machinery and technological industries that are capable of serving the main oilfields in the country. Hence, it is fruitful to explore why the growth of oil production has not been associated with an increase in locally sourced technological goods, i.e. oil and gas machinery and equipment, as predicted by Hirschman's unbalanced growth concept and what are the causes for such a disconnect.

For some reason, local suppliers are not able to *absorb* in the ample demand for high value-added goods at big oil projects in contrast to what is envisaged by the concept of linkages. To date they have missed the opportunity to internalize as much value as possible from the ongoing oil extraction in the country. High levels of imports of oilfield equipment do not dynamically transform to local production as

¹⁹ <https://petrocouncil.kz/en/how-much-did-kazakhstani-companies-earn-providing-services-to-oil-and-gas-operators/>, accessed on 25 October 2019

²⁰ Magazine "Oil and Gas of Kazakhstan", issue 3, 2019, pp. 138-143

suggested by unbalanced growth. As a result, the in-country value that is potentially available from extractive industries to a wider economy is very much constrained. High levels of imports of machinery and equipment for the oilfields are also reflected at the national level, with oil and machinery equipment imports being main items in total imports. This situation keeps the country on the dependent development path. Tracing the roots of weak local absorptive capacity and reasons for low participation of local suppliers in the procurement of technologically complex goods for the oil industry is the focus of this research. Such a qualitative study of the development process of competitive local suppliers provides insights on the industrialization process and economic diversification in oil exporting countries.

Based on the academic literature, this research views the oil industry as a source for the development of domestic manufacturing industries through demand for local industrial inputs. This research aims at exploring how the development of local suppliers of technologically complex goods is related to maximization of the positive effects of FDIs and benefits industrial upgrading. The unit of analysis is the exchange transaction to supply oil and gas equipment from local suppliers to international oil operators. This unit of analysis is placed in the framework of relationships that exist around: economic, social and political processes beyond the oil industry but inherited in the market conditions, policy decision making processes, governance approaches and overall institutional quality of the country. The focus on the oil machinery and equipment sector is called to capture crosscutting constraints that exist on the side of technological readiness - a major long-term driver of development convergence. This sector is employed as an indicator of the preparedness for industrial transformation given the ambitious national vision. Industrial transformation is perceived as extremely institutionally-sensitive and requires strong governance practices for policies to reach their objectives when these are introduced to address market failures, i.e. weak backward linkages.

This research is not only focused on local content policy but goes beyond it. This research is positioned on a borderline between policy-oriented local content studies and development studies examining long-term development drivers of a country. In contrast to local content studies exploring the extent to which extractive industry benefits the rest of the economy and how this could be achieved through regulation, this research is extended to analyze the process of development of

competitive local suppliers that emerge or don't emerge not only as a result of regulatory requirements but as a product of the combination of country-specific factors that drive competitiveness of local businesses overall and incentives of international oil firms to contribute to local industries.

1.3. The Argument

Harnessing the natural wealth (oil, in particular) for economic development and industrialization is a challenging task. The literature on development patterns in resource-rich economies evolves around solving the dilemma of the negative impact of natural wealth on industrial structure. Many developing resource-abundant economies have lagging economic performance due to a combination of factors: unfavorable macroeconomic conditions that arise from large capital inflows from sales of extracted resources; policy failures to manage resource rents efficiently at fiscal and industrial policy levels; and political factors, including corruption and rent-seeking (Morris et al., 2012). The expansion of primary goods exports brings a resource-rich country back to its *natural Ricardian position* and contributes to further de-industrialization (Palma, 2005). De-industrialization is the outcome of resource industries operating as *enclaves*, without much contribution to employment, as resource extraction is extremely capital-intensive, and fosters non-tradables industries through demand for services. Thus, the main development challenge for a resource rich economy is to pursue industrialization and avoid falling into dependence on its natural comparative advantage by becoming a resources exporter with weak or absent non-resource industries. Economic diversification, that is creation of a more varied structure of the economy, is achieved by fostering other industries, with manufacturing being of higher importance as its development ensures high social gains in the form of employment.

Academic theory offers insights on how resource industries could contribute to the growth of local manufacturing and supply industries and, as a result, lead to economic diversification. Hirschman (1981) in particular, suggested that inter-industry linkages could foster development of markets for input-goods, i.e. backward linkages.

Backward linkages trigger development of input markets that in their turn trigger the next level of input goods, and this process continues. Hirschman's ideas are rooted to economic historians who introduced the *staples thesis* that relates to the export-led growth of Canada as it matured from a producer of staples to an industrialized economy (Hirschman, 1981). More specifically, Hirschman suggests that linkages generated from production of staples can take various constellations and result in different development experiences of countries. This argument is rooted to the varying nature of underlying processes that exist within the type of linkage relationship: in contrast to direct backward and forward production linkages, fiscal linkages evolve through taxation of resource extraction while consumption linkages unfold through import-substitution activities. Depending on the socio-economic settings of staples exporting countries, some types of linkages might prevail and define the development trajectory during the export-led growth. Hirschman argues that it is highly unlikely for an ideal situation to emerge with all three types of linkages being strong. Hirschman explicitly identifies backward linkages as the most growth-inducing type of linkage. At the same time, the existence of one type of linkage is conditional on the absence of other types: fiscal linkages emerge at the back of missing productive backward and forward linkages. However, the existence of linkages is not straightforward and not always linear to development. For example, he notes that the fiscal linkage could be weak and problematic if collection of rents is not properly matched with strong investment decision-making and expenditure planning practices. The consumption linkage could be very negative as resource rents are spent on imported goods while import-substitution efforts take time to settle down and are not always efficient. Overall, Hirschman's generalized linkage theory presents economic development as a sequence of interdependent processes – “one thing leads to another” (p. 75). Thus, the type of linkage offered by the staple creates the bridge between existing and new economic activities. For example, if fiscal linkage is strong it might be that the state will use the resource taxes on infrastructure or other projects within its interest. The specific linkages that arrive capture characteristics of the productive activities in place at a certain period of time and depending on these characteristics they invite economic agents to engage in new activities. Based on this generalization, Hirschman argues that linkages can offer an economic structure that

results in a country being either on a development or underdevelopment path.

Some later works by Ciccone (2002) and Jones (2011) also offer additional theoretical models to show that established intermediate-input chains explain large income differences across countries and contribute to industrialization. Research by Morris, Kaplinsky and Kaplan (2012) focuses on examining the development of backward linkages from the extractive industries in the set of countries in Africa and argue that globalization has favored outsourcing practices by lead firms operating in developing countries. This offers prospects for the development of local suppliers of goods and services.

These ideas are the result of a gradual change of focus in the academic debate on development patterns in mineral economies since the 1980s. The economic policy consensus of the 1980s and 1990s evolved around capital accumulation economic models that advised mineral economies with small domestic savings to make efforts to attract FDI in the extractive industries. This approach was supposed to bring in the much-needed capital for the development of resource extraction and new technologies. In the mid-1990s, empirical evidence emerged that demonstrated the harmful effects of the expansion of extractive industries and suggested the existence of a *resource curse*: countries very rich in natural resources on average end-up being very poor. In this period the policy advice turned to searching for ways to avoid the *resource curse*. Given that many developing countries are resource exporters and the commodities boom of the 2000s contributed to growing resource dependence, the academic debate moved to the more logical question of how to build the linkages from FDI in extractive industries to local industries and foster industrialization and economic diversification (Dietsche, 2014). This question is relatively new despite the longstanding debate on the *resource curse* and earlier works of structural economists examining the process of structural transformation, with Hirschman being one of them.

The experience of successfully industrialized resource-rich economies suggests that there is a resource-based path toward economic development. At the same time, the knowledge about mechanisms that make countries lose or win from resource abundance is quite limited (Torvik, 2009). The outcome of policies in extractive industries is still one of the research puzzles that should be addressed in order to provide evidence-based policy advice for the increasing

number of developing countries that expected to become oil and minerals exporters, especially in Africa, in the near future (Ross, 2015).

The increasing academic literature on institutions has added more understanding on the nature of the *resource curse* (Badeeb et al., 2017; Gelb, 2011; Collier and Goderis, 2008). From an institutional perspective, the backwardness of a resource-rich country is seen as a policy failure to supply institutions that manage resource rents and support industrial transformation. The presence of vast resource rents adds strain on governance capabilities since there is a need for the establishment of institutions and the introduction of policies for effective management of resource rents and transferring them to the rest of the economy to foster economic diversification. The *producer friendly* institutions that created incentives for entrepreneurs to enter new activities and allowed moving away from primary exports characterize successfully industrialized resource-rich countries. Conversely, countries with *grabber friendly* institutions failed to transfer resource rents to support development of new manufacturing exports (Mehlum et al., 2006). Hence, economic diversification relies on the institutional setting in place, which is affected by the effectiveness of the policies, and the strength of the governance practices and eventually leads to the emergence of new institutions that support the linkages from the extractive industries to non-resource manufacturing.

Industrial policy has a special role in fostering the emergence of linkages. Modern industrial policies are becoming more complex and exhibit new features. The particular new theme that emerged in modern industrial policies relates to the promotion of participation in global production networks – global value chains (GVCs). The design of new industrial policies assumes the need to promote international competitiveness in the first instance given the globalized nature of contemporary production processes. In this sense, investment policy becomes an integral part of modern industrial policies and policies to attract FDI focus on generating increased potential to build business linkages and stimulate development of local enterprises (UNCTAD, 2018).

The localization of the supply of goods is an area where political expectations face the reality of economic conditions. Governments in many developing countries have strong expectations on creating as much value from resource extraction. However, the reality could be such that there are gaps in local capabilities that constrain the value creation for the host economy. These gaps arise because the oil

industry itself is an international industry, it follows the international oil price movements, there is international competition and it affects the way the industry is governed, including procurement, that have to ensure international competitiveness and operational efficiency. It is likely that lead oil companies might be willing to engage in the development of local suppliers as a potential source of improved operational efficiency. However, when the capacity gaps are wide the government has a greater role to play in providing incentives for MNCs to support the development of local industries. Eventually, the ultimate task of the state in developing the country is much broader than is the task of MNCs in reaching operational efficiency. Hence, there is considerable scope for partnerships to foster the emergence of competitive local suppliers.

The presence of a strong local supply industry indicates that the resource enclave has been successfully embedded in the economy and has become an integral part due to a network of local suppliers and, thus, benefits the wider economy. In this study the competitiveness of local suppliers is seen as the way to achieve a resilient (i.e. diversified) economic structure. Hence, it signifies that the country managed to utilize the unbalanced growth sequence. The emergence of competitive local suppliers is viewed as a dynamic process of creation of a new competitive advantage in the economy. In this respect, this process is highly sensitive to a country's conditions that are inherited and explicitly reflected in market conditions, policies that are being introduced, governance practices in place and institutions that frame the entire process. This study decomposes this process in order to track not only the channels through which resource extraction creates value in the wider economy, but also to discover the stumbling blocks in the process. This decomposition is undertaken at three levels of the analysis: (1) policies, (2) governance, and (3) institutions. Such decomposition is fruitful to capture features of each variable and explore them in action. It is anticipated that in the case of frictions and misalignment between variables (e.g. when policies do not reach their objectives due to weak governance practices or institutions) it might result in slow progress in the development of competitive local suppliers. It is also highly likely that institutions might be more persistent than the transformative power of production forces and work as a hurdle for the development of competitiveness. At the same time, it makes sense to explore not only the impact of each variable separately but also view them as a holistic system and when coupled

together they constitute the country context. Hence, the main argument of this research is that emergence of competitive local suppliers to oil industry contributes to general economic diversification. A supportive environment needs to be in place. This is represented by appropriate horizontal and vertical state policies, private policies that are complemented by strong private and public governance mechanisms and supported by institutions that foster productive activity.

1.4. The Method and observable implications of the research

This research is driven by the generalized linkage theory offered by Hirschman and is inspired by the ideas of new institutional economics scholars (Coase, 1960; Williamson, 1979; North, 1991). Hirschman's ideas provide strong insights and a foundation for understanding the development pathways in modern oil exporting countries. Following Hirschman's linkage theory one can argue that extraction and exporting of natural wealth is associated with economic development only when such productive forces exhibit strong linkages. However, linkages are not straightforward and are inherited in the country's context as well as in the type of staple. Hirschman himself is very skeptical about linkage endowments of petroleum. He points at the enclave nature of petroleum extraction and the most likely linkage that might arise is fiscal. Still, he notes that when the state develops the ability to tax resource rents ahead of investing skills, there is a great chance that increased budget revenues will lead to expanded consumption and booming imports, but over time. A timespan before this happens largely depends on a country's context, which is reflected in the quality of its bureaucracy, long-term planning and macroeconomic management. A consumption boom might eventually lead to import substitution and the rise of the consumption linkage. Hirschman defines this development path as *orderly unbalanced growth*. According to Hirschman, this sequence gives the state a sense of direction for interventions and this situation is more beneficial than the one in which the state is engaged in the promotion of investment projects not related to the staples industry (i.e. balanced growth). The state might engage in assisting industries to grow at the back of resource extraction by the provision of public goods (e.g.

infrastructure) or active policies (e.g. price stabilization, technical regulations, etc.). For this to happen, Hirschman points to the features that the state itself needs to possess: it needs to be *developmental-minded* in the first instance and be concerned with the missing production links to resource industries. Under these conditions the state will be willing to exhibit developmental behavior, apart from the income distribution function through taxation, and change from the detached observer to a game player. By intervening in the economy, the state is guided by the needs of local industries and Hirschman defines this as an *outside linkage*. The outside linkage appears when new economic agents undertake new activities: fiscal linkages are by their nature an outside linkage, while backward and forward linkages could be either inside, when the same agents expand to perform new economic activities, i.e. vertical integration, or outside. The outside linkage allows for diffusion of economic power across a larger number of economic agents (Hirschman, 1981).

Following Hirschman's linkages concept and reflecting on oil exporting country experiences, one can assume that oil exporters in their development can follow an orderly unbalanced growth through building of strong linkages. The researcher is eager to apply this concept to the case of Kazakhstan as discussed in Chapter 4. The choice of Kazakhstan is justified by the fact that the country is struggling to embark on a sustained growth path. As Hirschman's linkage approach suggests the root cause for such a struggle lies within weak outside production linkages. In this respect, it is important to explore why this is the case and studying the development process of competitive local suppliers for the oil industry is instrumental to the analysis. The application of the linkage approach to the case of Kazakhstan is guided by the following intuition: local suppliers are outsiders to the oil industry, particularly, to international operators of the three major oilfields; and the emergence of competitive local suppliers mobilizes new economic agents in the economy, opens the way to overcome the enclave nature of oil extraction and builds a more diversified economic structure. Given that backward linkages are seen as the most direct channel to induce growth from primary goods, it is worthwhile to explore what challenges this process faces in the context of Kazakhstan as an oil exporting country. In particular, studying how outside backward linkages unfold in the form of the emergence of competitive local suppliers, what are the mechanisms behind the process, what role does the state play, and how do institutions shape the process, offers

access to general knowledge on the sources of long-term economic growth in resource-abundant countries.

In turn, the orderly unbalanced growth and the evolution of outside linkages is highly sensitive to the country context. The existing institutional setting is reflected not only in the state's capacity to distribute resource rents across the wider economy and its capacity to create favorable investment conditions for new economic activities to emerge, but also in the prevailing production practices, conventions on doing business and overall governance practices in place. Thus, the emergence of outside backward linkages are very much dependent on the institutional framework in place. In this respect, the researcher believes it is highly beneficial to combine the ideas of Hirschman on economic structures with the evolutionary vision on economic development of new institutional economists (like seminal writings of North, Coase, Acemoglu, and other scholars) and take a *holistic approach* to explore the entire governance framework that exists around the process of emergence of competitive local suppliers for the oil industry in an oil exporting country.

A specific analytical structure is employed that evolves around three major explanatory variables – policies, governance mechanisms and institutions. In this analytical setting, the development of competitive local suppliers is seen as the dependent variable, while the policies, governance mechanisms and institutions serve as interlinked explanatory variables. Examining each of these variables in the existing setting *in action* and understanding how it adds motion or acts as a stumbling block for the development of backward linkages is the main task of the research. The holistic approach assumes that examining each of the elements independently is important but does not provide the complete answer. Instead the holistic approach starts with the observation of the existing process of transacting and then explaining it, including how it is affected by each element – policy, governance and institutions – and how interactions between these elements shape the process of transacting. Following this approach allows one to understand the interaction between the elements and how they shape each other to provide the outcome that is in place. It shows that the process of development of backward linkages is dynamic but there are hurdles that exist within each element and in combination with other elements it lowers the dynamism of the entire system. As a result, the existing governance setting does not provide an immediate outcome;

instead the change evolves over time as the whole system overcomes its own rigidity in small iterative steps.

There are some important constraints that exist within this system inherited from the nature of each element and the nature of the exchange process itself. Fostering the development of competitive local suppliers is a policy agenda shared by disintegrated groups of stakeholders. The particular governance issue that stakeholders face in addressing the search for better policy outcomes is a collective action dilemma when they fail to coordinate on their actions to provide optimal solutions. The central idea to solving the collective action dilemma is to introduce the coordination mechanism and overcome transactions costs of interaction. Holahan and Lubell (2017) provide an intellectual retrospective on the transformation of economic thought on solving the collective action dilemma from a top-down approach to a bottom-up, self-governance process. They show that with the arrival of new institutional economics, a neoclassical view that rational actors can always deliver socially optimal outcomes becomes doubtful. Scholars of new institutional economics observe that the exchange process does not happen in a frictionless manner. Coase (1937, 1960) in his seminal writings indicated that the interaction between economic agents involves costs – *transaction costs* – the cost of time spent for searching, administering, communicating, gathering, etc. Transaction costs define how resources are allocated. Transaction costs could be so high as to prevent interactions between agents and lower economic efficiency. Given that transactions costs are a real phenomenon, which takes the form of costs of gathering, negotiating, bargaining, costs of administrative arrangements, etc., the chief solution is offered by the development of institutions to control uncertainty and predict the behaviors of economic agents. North (1991) defines institutions as rules of the game, which are both formal and informal. These rules guide economic actors according to belief systems and the perception of reality that these actors have. Institutions play a role to create a commonly shared perception of the reality and reduce uncertainty that each stakeholder faces in the exchange process. Thus, when agents interpret existing rules in the same way, and when the law is applied equally, transaction costs become lower as the general level of uncertainty faced by agents decreases. Collective interaction and coordination is an institution that could address the collective action dilemma. Whether this institution emerges from a top-down design or bottom-up evolutionary process is the function of transaction costs

associated with each (Holahan and Lubell, 2017). Hence, collective action incurs transactions costs and stakeholders are aware of such costs and if the costs are high the status quo is retained. However, one particular actor that might take the role of facilitator of collective action is the state. The rationale for state action is that private actors fail to organize for joint action and coordination, some of them might be free-riders while others are unwilling to incur any costs, etc. In this setting, the state becomes a supplier of new institutions that mostly are of a formal nature since the state has the authority for rules creation and coercive action. In turn, incentives of the state to act as a supplier of institutions largely depend on its capacity and beliefs and commitments of its political leaders. With interventions the state could improve market coordination.

Coase argues that removing deficiencies from the system incurs costs of action and corrective measures may well produce more harm than initial deficiency. What he offers is the change in the approach to problems of welfare economics. As Coase (1960) puts it: "It would clearly be desirable if the only actions performed were those in which what was gained was worth more than what was lost. But in choosing among social arrangements within the context of which individual decisions are made, we have to bear in mind that a change in the existing system which will lead to an improvement in some decisions may well lead to a worsening in others. Furthermore, we have to take into account the costs involved in operating the various social arrangements (whether it be the working of a market or of a governmental department) as well as the costs involved in moving to a new system. In devising and choosing among social arrangements we should have regard for the total effect." (p.44).

Hence, in an attempt to induce any policy change to address a sub-optimal situation, examining the total effects of such change is an appropriate strategy. In turn, the change itself is associated with costs as already discussed above. Thus, the process of change is highly multi-dimensional and it happens at different levels of governance, and involves a wide range of stakeholders. Simply a change in one area affects the status quo in other areas. All these features make this dynamic process very slow and sometimes even controversial, especially when policies do not bring expected outcomes due to constraints that exist in other parts of the entire setting. These considerations provide grounds for exploring the unbalanced growth process from a holistic point of view by analyzing policies, governance

and institutions all together. This research applies the unbalanced growth theory to explore how the development of competitive local suppliers of oil and gas machinery and equipment contributes to economic diversification in Kazakhstan.

This research employs a qualitative method of analysis, as it is the best approach to capture the contextual insights of the explanatory variables – policies, governance, and institutions – and better reflects the causal mechanisms and perceptions of the economic agents about the phenomenon under examination. Quantitative tools would not allow the capture of these perceptions that are crucial to understanding the situation in Kazakhstan. The case study as a strategy of qualitative inquiry calls for an in-depth examination of the process. The exploration of one single case is viewed as a valid scientific method as it is capable of producing a tacit or exemplary knowledge – the *phronesis* - based on practical reasoning and judgment within the given context (Thomas, 2011). The chosen method for data collection is through unstructured expert interviews. The validity of the results is achieved through direct referencing of the primary data and is supported by the literature review, desk review of key documents and of relevant macroeconomic statistical data. The research has two parts. The first part is mostly theoretical and is dedicated to the conceptualization of the analysis and the argument of the research, while the second part provides the analysis based on the collected data and research conclusions.

1.5. Overview of the dissertation

This research is divided into nine further chapters. Following this introduction, Chapter 2 discusses the literature and experience of countries that managed to use extractive industries as a basis for economic development and industrial transformation. The main argument is that building the local absorptive capacity through increased competitiveness of local suppliers contributes to maximization of positive spillovers from MNCs operations in resource extraction and supports economic diversification. Positive spillover effects from the MNCs operations increase with the degree of local capabilities and skills. One important message is that capturing the

spillovers from extractive industries and transmitting the benefits to the wider economy is the task that cannot be left to market forces only. The state plays a role as a facilitator, regulator and information provider by use of sectoral policies as well as provides supportive macroeconomic conditions for doing business locally. The host country context also matters as it indicates the quality of institutions that maintain the process of linkage creation. Based on the literature review the chapter concludes that though there are some blueprints in the process of local supplier development, the success of any depends heavily on the country specific context. In this sense, exploring the process at country level is still a fruitful academic area and a promising source of knowledge on economic growth in mineral economies.

Chapter 3 provides a theoretical understanding of the process of economic growth. This chapter aims to review theories of economic development with reference to resource-abundant countries. The chapter starts with the discussion of the *resource curse* theory as conventional wisdom to explain the growth process in resource economies. The genesis of the *resource curse* is explained with institutional theory and theories of institutional change. The discussion then moves to ways of avoiding the curse. In this part the focus is to outline the theoretical views on the role of the state in economic development, institutions, industrial policy and the concept of governance in economic theory. In this respect, the growth process in resource-rich economies does not differ from other economies and hinges of fair distribution of rents. The chapter provides the theoretical framework of the research that is used to build the main concepts of the current research.

Based on the literature review and theories of economic growth, Chapter 4 examines the empirical research agenda and methodology of this research. It offers a refined research question, discusses data sources and methodology, as well as reveals limitations of the current research. The refined research question is to link the micro-level foundations of firms competitiveness upgrade with the general improvements in economic structure at aggregate (macro) level. The refined research question explores the process of development of competitive local suppliers of industrial goods (i.e. oil and gas machinery and equipment) for international oil operators in Kazakhstan. This research question is based on the view that the oil industry is a source of demand for industrial inputs, especially capital and technology intensive ones, and the oil equipment and machinery

sector represents a good case for exploration. This sector has emerged as the outcome of oil extraction in the country and exploring its development process helps to understand ways for oil projects to contribute to industrialization. This chapter discusses primary data sources, which are unstructured interviews, and how the data was analyzed.

Chapter 5 opens the empirical part of the research. The chapter provides an outline of the general macroeconomic context of the country and driving factors and constraints of manufacturing growth in Kazakhstan. The aim of the chapter is to reflect on the evolution of the development framework and how the idea on promotion of local suppliers is embedded in it. It shows that the inclusion of local suppliers in the development process is associated with economic resource nationalism and increased state activism. The state is actively engaged in industrial policy to create an entry point for local suppliers through local content policy but also addresses market failures outside the oil industry with horizontal policy tools. At the same time, international operators are protected from enforcement by the contractual framework. Under the rules of international operators, local suppliers are forced to operate under strong international competition, thus competitiveness becomes an imperative. In this setting, local suppliers fail to satisfy the demand of extractive industries, as local absorptive capacity is weak. As a consequence, local suppliers are trapped in catching the *low hanging fruit* only, where local firms by and large are not engaged in critical supplies and are employed only for maintenance or provision of services or works.

Chapter 6 is dedicated to the focus of this case study, the oil and gas machinery and equipment industry in Kazakhstan. This new industry emerged as a result of oil extraction. However, in its development process it faces various challenges. The chapter demonstrates what the market and coordination failures are and how they constrain development of the industry.

Chapter 7 provides the analysis of the first explanatory variable, policies. It first examines the current policies to deal with market failures. One may note that the micro-foundations of failures of some individual firms to form business relationships with international operators reflect industry level challenges. The chapter discusses the targeted *policy tool-box* to help local firms increase their competitiveness in terms of price and quality. This chapter indicates that development of local capacity is driven not only by state policies

but also with a valuable input from international oil operators. This is a very important feature of the process as the state has limited capacity for coercion and influencing the internal procedures of oil operators. The chapter demonstrates how the combination of private and state policies addresses the issue of building the competitiveness of local suppliers. The overall finding of the chapter is that a comprehensive set of policies is in place to support development of local suppliers.

Chapter 8 extends the discussion to the next explanatory variable, governance, to understand how policies are implemented, what is the approach to policymaking and most importantly, what are the governance arrangements to deal with market transactions. Here we find that both private and state governance are important. The international operators through the use of their governance mechanisms control the opportunistic and rent-seeking behavior of local suppliers and engage, through their procurement process, with only those that have proven capability. Oil operators apply their strict internal rules and procedures to areas of operations. The main governance principle employed by operators toward relationships with local suppliers is based on competition. In the presence of strong international corporate governance practices of operators, the state in turn introduced governance arrangements to ensure that those corporate governance practices do not discriminate against local suppliers. So, the state has an overseeing or supervisory function despite its limited coercive power. As a result, there is a pilot agency with the function of a watchdog. The state has to impose control on the rent-seeking behavior of operators by use of the regulatory framework. In more broad terms, the role of state governance is to ensure adherence to principles of fair competition by all economic agents. This is the point where we start to observe some weaknesses. As the state targets promotion of the industry it becomes crucial to introduce new governance arrangements. Those arrangements are called to make policy decisions more informed and efficient. To improve the quality of policymaking, the state is taking actions to install cooperative governance arrangements by increasing the role of accountability, collaboration and deliberation. The chapter finds that though there is a move to increased interaction between the state and private agents, the overall governance practice still remains weak. Overall, stakeholders of the process find it challenging to move from competitive governance arrangements to collaborative governance since transaction costs are high.

Chapter 9 discusses the institutional setting and the reasons why the process of development of local suppliers has been slow. The chapter observes institutions at the firm, industry and country level. Fostering local suppliers requires change in the attitude and mindset of all stakeholders, which happens at the level of individuals, including the owner of local business, procurement engineer working at the international operator, and the bureaucrat dealing with localization policy, etc. Such change, however, is nurtured from the general external environment, which in the case of Kazakhstan still allows the application of personalized rules, informality and rent-seeking. Addressing these issues again requires state actions but the capacity of the state is limited and it cannot overcome the myopic attitude of bureaucrats and political leaders. As a result, the political will and state capacity are strong enough to create the organizational framework, but it is not enough to improve governance mechanisms and ensure efficient policy implementation. In this setting, the state strategy is to supply organizations rather than institutions. The general country context combined with high production and transactions costs constrains the emergence of a large number of creative entrepreneurs to increase the speed of change. As a result, linkages are developing rather slowly.

Chapter 10 provides an interpretation of the findings and offers areas for future research. It argues that achieving deeper localization levels in the supply of oil and gas machinery and equipment faces strong obstacles in Kazakhstan. The strong set of policies is not complemented by strong governance practices that in their turn are rooted in weak institutions and high transactions costs. In the existing system, weak institutions hinder development of entrepreneurship. At the industry level institutions that support collaboration and collective action among stakeholders remain formal and not effective in practice. When it comes to country level institutions, political development falls behind economic development making growth less sustainable. The limited synergy between economic, political and social organization constrains the change and removes the dynamism not only from the framework of development of local suppliers, but more generally, from the growth process of the entire country.

Chapter 2. The pursuit of diversification in resource-rich countries: localizing in the globalized world.

Literature review

Since the Industrial Revolution the world has experienced the growing usage of commercial energy, particularly fossil fuels. Energy demand between 2017 and 2040 is expected to expand by 27 percent across the globe. Most of the demand will be from developing countries and their share is forecasted to increase during this period from 64 percent to 70 percent. Hydrocarbons are going to remain a major source of energy until 2050. By 2040, the combined global use of natural gas, petroleum and coal will grow by 16 percent. The share of hydrocarbons in the energy mix, though slightly declining as other alternative sources of energy like clean electricity and renewables expand, is expected to account for 74 percent in 2040 compared to 81 percent in 2017 (IEA, 2018).

Over the last two decades the rise in extractive industries has been associated with increased FDIs in developing countries. The rapidly growing demand for natural resources in developing countries caused prices for minerals to peak during the 2000s. In turn, the booming mineral markets spurred investments in exploration and extraction of minerals while the share of extractive industries in global FDI increased. The share of developing and transition economies as destinations for FDI in extractive industries between 1990 and 2000 more than doubled, and increased again by half by 2005. As a result of these trends, the share of global inwards FDI in extractive industries in the developed world declined from 90 percent in 1990 to 70 percent in 2005 (UNCTAD, 2007).

For many mineral-rich developing countries the attraction of FDIs in resources extraction became a critical development strategy. The underlying expectations from resource extraction evolve not only around increasing the export levels of minerals but also around opportunities to leverage FDIs to bring in new technologies, expertise, and know-how to the country, and build domestic industrial capacity and infrastructure. Extractive operations have the potential to create a huge domestic market for goods and services for years to come while offering opportunities for local industries to cover at least part of that demand depending on the existing local absorptive capacity. The

operations of multinational firms in extractive industries can offer positive spillovers to domestic industries (learning, competition, technology transfer, etc.). This chapter focuses more on the positive externalities while the next Chapter dives into adverse effects of the resource extraction on the broad economy and polity.

Extractive industries are and will remain important for developing countries in the foreseeable future and the potential for further exploration of natural wealth in the developing world is high. There is an observed statistically significant trend for the increase in the level of dependency on exports of extractives industries for 63 out of the 72 low and middle-income countries between 1996-2012. Increased dependency on the extraction of natural resources in the developing countries strongly suggests the need to address this issue in development debates (Roe and Dodd, 2017).

A pragmatic approach to leveraging resource wealth for economic development assumes installing strong linkages between extractive ²¹ and non-resource industries to foster economic diversification. MNCs operating in host economies are an important entry point for the creation of business linkages. In resource rich economies industrial policy efforts are directed to creating the conditions for the emergence of competitive local suppliers for lead firms in extractive industries. Industrial policy becomes especially important when local absorptive capacity is weak, which is the case in many developing countries. At the same time, the surrounding institutional context of the country and complementary governance mechanisms drives the success of industrial policy.

This chapter provides a review of the literature on how resource extraction has affected the development of non-resource domestic industries. Both the theoretical literature and studies on the experience of selected countries that managed to use extraction industries as a basis for development of local supply industries are examined.

²¹ The extractive industry consists of any operations that physically remove metals, mineral and aggregates from the earth.

2.1. Is there a link between extractive and non-resource industries?

It can be argued that there are multiple ways to produce goods. Entrepreneurs search for the most cost-effective techniques to produce their goods including the ones that use goods of other entrepreneurs as inputs. At each stage of the value chain firms will aim either to improve technology or find suppliers of cheap inputs in order to reduce the costs of their output. At each point in time there are competing possibilities to create supply chains based on known production techniques to produce each final good and the choice is mediated by prices. Policy interventions can change the incentives and affect choices. In a supply chain, firms become technologically interdependent, open to flows of ideas, mutual learning, and creating input-output structures that drive both firm and aggregate level productivity. If intermediate goods are important in the production process, firms with the lowest cost have greater chances to become a *superstar* supplier. Aggregate productivity is driven by the capacity of lower cost producers to become important suppliers in the economy. Through the network structure of production, aggregate productivity is distributed to the main economic variables - aggregate output and welfare (Oberfield, 2012).

Linkages between firms through intermediate goods and their complementarity offer one way to explain large differences in various country performances. For economic development it is crucial to have a low cost and wide customer base for intermediate goods. Intermediate goods generate multipliers that could be very large and induce virtuous circles of aggregate output expansion. The share of intermediate goods in gross output is estimated at around 50 percent across economies. Misallocation of resources at micro-level is aggregated at macro-level in the form of differences in total factor productivity at country level. Vertical integration cannot avoid distortions of the first-order conditions of the economy (i.e. customs, taxation, etc.) and ensure the timely delivery of parts in the right quantities to the right place. Complementarity of intermediate goods plays a role for local sourcing. If relevant substitutes are missing in developing countries it makes them excluded from the supply chains (Jones, 2011).

Industrial upgrading is related to increased capacity to produce industrial goods (both intermediate and final) and is one of the driving forces of economic growth. With globalization and the emergence of global value chains it became possible to split the production process

across countries and borders. Lead international firms, mostly MNCs, became the driving force of globalization. Contemporary industrialization policies evolve around the creation of entry points to global value chains and global competitiveness is at the heart of the development agenda for many developing countries (Farole and Winkler, 2014; Amendolagine et al., 2017; Addison and Roe, 2018).

For developing countries with abundant natural resources the task of economic diversification is even more challenging as they are following their natural competitive advantage in extraction industries and it makes them locked in as producers of raw materials. Mineral economies face many challenges in moving beyond their initial focus on extractive industries. This is due mainly to the capital intensiveness of extractive industries and their operations as enclaves, so there are no positive spillovers to the broader economy. Large inflows of foreign exchange from exports of minerals result in the appreciation of the domestic currency, further limiting the competitiveness of domestic manufacturing in international terms. Under these conditions, the economy of the mineral exporter is skewed towards expansion of non-tradables, while the traded sector remains highly underdeveloped and mono-oriented to resource extraction – a condition known as the Dutch disease, which is discussed in more detail in the next chapter. Apart from the Dutch disease, mineral economies can experience macroeconomic *boom-bust* cycles that follow volatile international commodities markets. Political elites in these countries can exhibit strong rent-seeking behavior, patronage, bribery, and corruption. These actions in turn can lead to social unrest and conflicts. All these aspects together with empirical evidence from cross-section data on the poor performance of resource-rich countries in relation to resource-poor ones contributed to the emergence of the *resource curse* theory (Auty, 2002 Sachs and Warner, 1997). In a series of seminal works by Sachs and Warner (1995, 1997, 2001) they provided empirical evidence on the negative relationship between natural resource abundance and economic growth. In their view, resource extraction can be a source of chronic low growth if manufacturing exhibits positive externalities. They conclude on backward and forward production linkages to be limited for extractive industries (Sachs and Warner, 1995).

In turn, the dependency theory literature generated strong arguments of the harmful effects associated with MNCs operations in extractives industries and called for protectionist policies in host countries. Dependency theory argues that there is an unequal

relationship in a global exchange between developed and developing countries. Under this setting the latter are seen as a source of raw materials and a market for the supply of technological goods. MNC operations in extractive industries in developing countries led to state capture by vested interests, environmental degradation and a tendency to operate as economic enclaves through highly internalized value chains.

To harness the resource wealth for development, the task is to capture positive externalities - linkages to the wider economy - from the lead industry in the form of demand for inputs. This argument originates from the linkage theory offered by Hirschman (1981) with special reference to staples. Through linkage theory Hirschman argues that staples production potentially could generate positive spillovers in the form of three types of linkages with the wider economy: fiscal, in the form of rents from resource extraction that accrue to the state via taxation and other direct payments to the budget; consumption through the demand for output of other sectors; and production through backward (supplying) and forward (processing) linkages. Although the extent to which these linkages could benefit the wider economy is conditional on many factors (i.e. fiscal linkage requires capacity to efficiently spend public sources), backward and forward linkages are believed to be the most direct channel through which higher levels of industrialization and economic diversification can be achieved via input-output relationships between industries. Hirschman assumed that backward and forward linkages provide policymakers a *hint* on directions for their interventions.

Hirschman (1981) notes that exploring the various characteristics of staples and ensuing linkages presents an ample source of knowledge on development mechanisms of export-led growth. Hirschman explicitly discusses the close relationship between the staples thesis and linkages approach. He suggests that the latter offers deep insights in understanding the former and is particularly useful for exploring the frustrating development paths undertaken by many staples exporters. According to Hirschman, the linkage approach is more instrumental than explanations offered by neo-Marxist scholars in explaining the devastating effects of capitalism and imperialism on developing countries that export staples, i.e. impoverished population, destroyed local industries, depleted soil and subsoil, and corrupt local elites. Such development outcomes are defined as “development-of-underdevelopment”. Hirschman sees the periods of “development-of-

underdevelopment” as a failure within the development process when one thing *did not* lead to another. He argues that from the point of view of the linkages approach, exports of staples could indeed lead to an impoverished population and exhaustion of natural resources in developing countries as long as linkages are weak. In this respect, the linkages approach is valid for explaining how development is happening as well as to account for the lack of development. At the same time, the linkages approach views development as a dynamic process during which new types of activities could emerge, including increased state capacity for policy-making and the provision of public goods. In the linkages approach the micro-dimension of productive forces - the product and technology of its production - influence economic development since socio-economic processes (i.e. taxation) emerge in response to productive forces and historical circumstances, e.g. fiscal linkages arise as a result of missing direct productive linkages shaping the state’s incentives to tax resource extraction and invest revenues elsewhere in the economy. Economic development includes social and political components and is shaped by the type of economic activities in place. In the linkages approach institutions have an important role to play and are shaped by the production forces: differences in socioeconomic developments are traced back to differences in the structure of the productive forces. Institutions emerge in response to economic activities depending on the country context, time and place: the same staple could generate different social and developmental outcomes in different countries. Hirschman (1981) explains this in a simple way of arguing that staples do not determine the sociopolitical environment but “... will imprint certain patterns of its own on whatever environment happens to be around and that is possible and worthwhile to study the imprinting process.” (p.96) He concludes that the degree of compatibility of some economic activities with a variety of socioeconomic environments could be scaled from high to low. Thus, some countries inherit socioeconomic frameworks for development of new non-resources industries while others do not. In other words, in some contexts production forces might generate supply of new institutions while in others it will not.

The new literature on the development process in mineral economies started to gain weight with the globalization era and global commodities boom. In contrast to resource curse literature, the growing literature on resource-led growth argues that positive synergy could be achieved between resource extraction and non-resource

industries if there are strong inter-sectoral links and proposes the logical question: how these linkages could be built? With the era of globalization, import-substitution policies were replaced by outward-looking export-oriented policies. The academic and policy debate on leveraging natural wealth for development experienced a change in approach, with the emphasis moving away from the attraction of FDI in primary sectors (1980s-1990s) to avoiding the *resource curse* (1990s-2000s) and finally to building the linkages (2010s - onwards) (Dietsche, 2014).

FDIs were incorporated into the development plans of the nations while MNCs experienced change in the organization of their operations with reliance on networks and global value chains. The process of resource extraction is driven by international and national governance arrangements and assumes a high degree of collaboration and coordination among multiple stakeholders (Addison and Roe, 2018). Globalization has pushed deeper MNC-government cooperation with greater awareness on the government side about opportunities offered by the extractive industries and increased attention to building the essential linkages. MNCs were called to incorporate objectives on local social, economic and environmental development in their strategies and go beyond their usual profit-maximization approach. The role of MNCs in extractive industries has gradually transformed from maximum rent extraction and enclave existence towards greater embeddedness and cooperation with the host country (Narula, 2018).

Exploring FDI spillovers via backward linkages outside manufacturing is a relatively new area for empirical studies. Currently the evidence is limited to a few earlier and a number of recent country case studies. The research by Morris, Kaplinsky and Kaplan (2012) covers qualitative case studies from Sub-Saharan Africa to explore the extent and drivers of linkages from commodities. In their analysis of the extent of these linkages they expand Hirschman's model by adding new dimensions to the analysis. The breadth of linkages determines the range of inputs that could be acquired locally (i.e. the share of expenditure that is local). The depth relates to accretion of value added to local inputs. Horizontal linkages appear when value addition takes place in other sectors related to commodities (e.g., machinery and equipment, engineering, etc.). The linkage analysis should have a holistic approach and consider how much local value is added along the whole value chain and how far up and down the analysis can reach. In relation to the main drivers of linkages, they identify ownership,

infrastructure, capabilities, and policy. Although the authors mention their failure to collect the data on all these dimensions, they managed to capture the general dynamics of linkage creation across countries and types of commodities.

Forward and backward linkages are seen as the most direct channels to link up extractive industries with other sectors but they are not straightforward. Backward and forward linkages connect sectors through input-output relationships of firms and influence the competitiveness of product-specific value chains. Backward linkages are demand-driven: the wider the range of domestically produced goods the wider is the range of domestically produced parts, while forward linkages are supply-driven. The speed with which these relationships emerge depends on three of factors: market size, economies of scale, and technological capacity (Hirschman, 1981).

Globalization is one of the driving forces that opened up prospects for industrial development via backward linkages. Backward linkages emerge through local sourcing strategies of MNCs. Extractive activities require the use of a wide range of intermediate goods and services, specific technology and knowledge. Lead firms are willing to outsource their non-core activities to reliable, low cost and high-quality suppliers. Outsourcing activity unfolds in stages as the lead firm searches first for reliable global suppliers with strong competence and might extend further to proximate local (*follower*) supplier, especially in places where uncertainty about logistics is high (Morris et al., 2011).

Exploring the nature and mechanics of externalities arising from MNCs' operations opens the way to the analysis of whether local firms are able to capture these benefits and what are the pathways for the emergence of backward linkages. MNCs can stimulate the development of local economies via a range of externalities (technology transfer, skills building, and backward and forward linkages) and lead to productivity spillovers for local firms. Spillovers (especially those associated with learning and technology transfer) contribute to the extent of linkages. Local firms benefit from MNCs superior knowledge of the product or process technology or the market. Productivity and efficiency improvements arise from the demonstration or emulation effects, competition effect, and complementarity effect for intermediate inputs.

In industries with technologically complex inputs (oil and gas, and mining) first-tier suppliers are almost always accredited global suppliers holding long-term contracts with lead firms. For local firms it

is very difficult to target that stage of the value chain. For example, the World Bank study of economic links generated by oil and gas industry in 48 countries finds that the sector relies extensively on global supply chains that are so well organized (in terms of costs, quality standards and supplier reliability) that local suppliers may be locked out even if domestic capacity exists (Tordo et al., 2013). However, second-tier local suppliers could benefit from co-location with first-tier suppliers that are based in the country of operations (Farole and Winkler, 2014).

Although the process of backward linkage creation is complex, there are some generic drivers explaining the patterns of their development across all sectors and country contexts. Given that extractive industries in developing countries are dominated by MNCs, the main generic factor relates to the institutional role of lead commodity firms and the strength of demand they create for domestic intermediate inputs. Lead firms might be willing to outsource their *non-core* activities to local suppliers and have corporate incentives to build the heritage behind their operations, i.e. develop the local suppliers' industry. Another generic factor is that possibilities for linkages are differentiated by sectoral and technological capabilities (production of equipment compared to supply of vegetables generate different degrees of production processes). Next, conditions to do business in different countries create different operating environments for lead firms. And finally, commodity sectors with longer histories of operations exhibit deeper levels of linkages development (Morris et al., 2011).

Market size, local content rules, technological capability and size of local firms influences the extent of linkages too. Empirical evidence is not always supportive and shows a negative impact of a firm's size on local sourcing as bigger firms internalize production with vertical integration (Amendolagine et al., 2017). The absorptive capacity of local firms plays a crucial role and depends on the level of the technological gap of the host country: the higher the gap the lower will be the quality of technologies for transfer and, thus, the lesser are the potential gains from spillovers (Glass and Saggi, 1998). Local suppliers in their turn need to adapt to the high quality standards of MNCs and improve on their operational reliability, speed of delivery and influence improvements in their own supply chains. Thus, a nascent domestic sector needs to exist outside the extractive industry in order to absorb opportunities stemming from these industries. Compliance with international standards allows high-productivity firms to join the global

value chains of lead firms. Involvement in global value chains fosters development of local supply further and over time the process becomes self-sustaining while the share of local inputs tends to increase as more local firms establish various contracts with MNCs. Factors that support this process over time include: expansion of production processes; autonomous emergence of new suppliers due to growth of the manufacturing sector; and deliberate intention of MNCs to develop local suppliers. Host country characteristics also play a role in the extent of linkages and spillovers. Local conditions contribute to the scope and magnitude of spillovers. The absorptive capacity of local firms is higher when local competence and a competitive environment are in place (Blomström and Kokko, 1998; Görg and Greenway, 2004, Farole and Winkler, 2014; Narula, 2018; Amendolagine et al., 2017).

In turn, MNCs have their own incentives to engage with local suppliers. Many MNCs launch supplier development programs in host countries as a part of their corporate social responsibility initiatives or as a response to local content regulations. Apart from market forces (to control and lower costs), these programs are driven by the need to use location-specific knowledge or specialized equipment for local conditions. MNCs may have incentives to offer local firms assistance in setting up production facilities, improving the quality of product or support of innovations, in purchases of inputs, management and organization, and help search for new customers. Technological dynamism is peculiar to the extractive industries (e.g., *shale revolution*) and induces changes to operations while opening up ways for upgrading capabilities and knowledge-intensive supplying industries. Sometimes the institutional setting of home countries affects the behavior of MNCs in host countries to cooperate with local firms. There is also some pressure from supranational institutions (for example, United Nations and its agenda on Sustainable Development Goals (SDGs) that call for rent sharing, inclusive growth and sustainability (Morris et al., 2011; Farole and Winkler, 2014; Narula, 2018). Building linkages remains on the radar of international development organizations. For example, the United Nations provides funding for UNCTAD-led technical assistance to enhance linkages in three oil rich Central African States. The project sees backward and forward linkages promotion as the main development advice for these countries. Several country related weaknesses challenge the building of linkages: limited access to finance, lack of skills, weak institutions, lack of infrastructure, constrained information flow, low involvement of civil society and

weak bargaining power of governments compared to lead firms. Policies are required to support the building of linkages and addressing these challenges, while the technical assistance aims at building the capacity of policymakers in formulating and implementing policies and improving information sharing among the main stakeholders (UNCTAD, 2017).

Alternatively, it is possible that local firms may fail to establish linkages and negative effects of FDI on the productivity of local suppliers occur. These effects occur as demand is diverted from local to imported inputs. Indeed, evidence shows that although MNCs might be keen to increase the local content and help local suppliers, the globalization era did not lead to greater production linkages. There are many explanations why this happens. On the one hand, MNCs could operate as enclaves and exhibit strong ownership advantages related to: (1) technology that drives their competitiveness; (2) superior ability to organize themselves across borders; (3) *deep pockets* as they have better access to finance; and (4) strong political ties. On the other hand, the origin of MNCs also plays a role in the creation of linkages. For example, Chinese and Indian MNCs exhibit an enclave nature in their operations in Africa, while Canadian or Australian lead firms tend to be more open to cooperation with locals. The MNCs home economy's culture combined with the weak domestic absorptive capacity limits the extent of potential benefits of MNCs operations for economic diversification in the host country. Only countries that managed to build local absorptive capacity and fostered domestic firms capable of competing with international competition captured all the advantages associated with entering the supply chain of MNCs in extractive industries (Narula, 2018).

Thus, forward and backward linkages could and should be nurtured, promoted and encouraged to expand, especially in countries with weak absorptive capacity in order to overcome the enclave nature of commodities. Capturing the potential for spillovers in extractive industries demands considerable effort to build domestic supply-side capacity and to improve the location advantage of the host country by increasing the competitiveness of domestic firms. This task is hard to achieve and cannot be left to market forces. In capturing the potential of FDIs' spillovers to the wider economy, state policies at different levels could play a role. The generation of backward linkages requires horizontal policies that create supportive conditions to do business in the country while targeted policies (e.g. local content) could focus on

information sharing and the creation of a regulatory regime that favors local suppliers (Farole and Winkler, 2014).

Overall, linkages development is a long-term initiative requiring a substantial upgrade in domestic capacities, consistent policies, and supportive institutions. This task is beyond the institutional role of lead firms but relies on extensive interaction between major stakeholders – lead firms, the state and the domestic private sector. Governments in resource rich countries aimed at industrialization and diversification need to find ways to embed local firms into the value chains of oil MNCs. Countries that escaped the *resource curse* nurtured inter-industry linkages and deliberately avoided over-specialization in extractives. Overall, policies to promote a competitive environment could provide better alternatives to policies on various direct requirements aimed at capturing the benefits of FDIs (e.g. technology transfer clause, local content rules, etc.)(Farole and Winkler, 2014; Narula, 2018). The focus on the depth dimension of linkages requires management of the input chains in order to localize value-added. Thus, state interventions may speed up the process if performed wisely and contribute, in particular, to the depth of backward linkages – the extent of value added by domestic inputs (Morris et al., 2012).

Various trade and industrial policy decisions affect linkages and could foster industrialization. For example, Baldwin and Venables (2015) examine the effects of import tariffs, export and production subsidies, local content rules, and value-chain policies on domestic production. The effect of import tariffs on parts depends on the elasticity of substitution between domestic and foreign parts and on the size of demand for domestic parts created by such protectionist policy. If the elasticity is small then the range of goods produced domestically will shrink because of the tariff. On the other hand, a production subsidy will create extra demand for parts and affect the competitiveness of final goods. Policies to directly support local parts production relate to reducing the costs of production and domestic price or to help parts producers meet the minimum efficient scale. Under a local content policy, prices are not distorted but the quantity in the input mix of domestic and foreign components is affected. Demand for domestic parts shifts upwards inducing an increase in the range of final goods produced. Local content policies need to be accurate and target parts that are new to domestic producers as they can increase production costs over time. Thus, policy interventions could change the incentives and affect choices of economic agents. Policies on building

linkages are discussed in the next section and provide evidence that backward linkages do not happen by default and are intrinsically linked to the context of the particular country.

2.2. Policies on building linkages

As discussed above, backward linkages from extractive sectors are determined by both public and private policies. Though linkage creation is mostly a market-driven process, government involvement could help to capture opportunities for linkage building. Morris et al. (2012) argue that these opportunities are defined according to time, complexity and scale. The first type is *low hanging fruit*, which could be obtained locally at lower or close to import costs. The second set consists of “suppliers who have the embryonic capacity to be competitive, but who need time and support in order to grow their capabilities if they are to approach the global frontier” (p.34). The third group comprises the sectors beyond early reach and “[i]t will be some time, if ever, before local suppliers can provide competitive inputs in these activities.” (Morris, et al. 2012, p.34). In this sense, there is great potential for cooperation between governments and the private sector to create *win-win* outcomes for stakeholders. The authors note that the rationale for cooperation in the case of international business is driven by economic sense to engage with the most proximate suppliers. For the government of a mineral economy there are at least five main reasons to foster linkages from commodities sectors: (1) promotion of growth and employment; (2) diversification of the economy; (3) capabilities development; (4) generation of external economies; and (5) overcome the inertia of lead firms and their failure to develop effective supply chain strategies with local suppliers. Industrial policy could play a crucial role in addressing the absorptive capacity gaps of domestic firms. The gap between the current absorptive capacity and its potential is an area for policy application.

Farooki and Kaplinsky (2014) provide a policy framework for the development of production linkages from extractives in low- and middle-income countries. They argue that such policy framework should simultaneously cover the macro, industry and firm levels. Macro-policies are aimed at the creation of a general stable and

favorable business climate in the country. Apart from ensuring macroeconomic stability (exchange rate policy, counter-cyclical fiscal policy) macro-level policies should address the provision of public goods (e.g., education, infrastructure), which are underprovided by markets, and engage in the supply of institutions (property rights, rule of law). Sectoral policies need to identify feasible backward and forward linkages based on informed analysis of value chains and interaction with key stakeholders – lead firms and the private sector. The policy needs to target activities where local production is either already potentially competitive or might become competitive in the near future. In doing so governments need to find ways to embed local inputs into global value chains. A well-developed strategy for the selective sourcing of appropriate technology and the creation of collaborative development consortiums with the most cooperative lead firms that have corporate strategies to favor development of linkages are the main components of such policies. These efforts need to be complemented with actions to address industry-specific market failures related to skills and capabilities and provision of infrastructure. Finally, at the firm-level, policies need to target the corporate strategies of lead firms, supply-chain management and development, and firm-level upgrading (Farooki and Kaplinsky, 2014). The proposed policy framework seems plausible as it reflects the multi-dimensional nature of the linkage building process and emphasizes the importance of both horizontal and sectoral policies for economic diversification. Still, vertical policies might play a larger role in order to stream state support to new sectors or related industries and distribute resource rents via targeted public investments to non-resource sectors (Gelb, 2011).

Local content is one type of vertical policy instrument commonly used in resource abundant countries. Introduced initially in the early 1970s in the North Sea region, local content included different types of policy interventions in the petroleum sector to promote backward linkages and has expanded over time to also create forward linkages. In general terms, local content policy relates to employment and value-added created elsewhere in the domestic economy as a result of extractive sector operations. Efforts to increase local content evolve mostly around these two dimensions. However, as indicated by the study of local content policies in oil and gas, there is a significant difference between implementation strategies aimed at the local content level (the share of local content in total expenditure) and local

content development (emergence of competitive, capable and sustainable local skills and industries). While most countries have introduced policies to promote and monitor the former only a few countries have targeted the latter (Tordo et al., 2013). Overall, the ultimate final goal of local content policy is to promote local companies capable of competing for supply contracts in the international market (Heum, 2008).

Empirical studies indicate the low capacity of the oil industry to generate linkages and provide justification for active policy interventions. Tordo et al. (2013) estimate the extent of production links for a set of oil producing countries and calculate both direct and indirect backward and forward linkages. A distinction between direct and indirect links is such that indirect links include not only immediate inputs into a sector but also inputs required to supply inputs to the main sector. Using data for 2007, the authors find that in most countries the oil and gas sector creates fewer backward linkages than other sectors indicating that the impact of the sector on the economy is lower than for other sectors. The authors explain the weak backward linkages by a number of factors. In the oil and gas sector the value-added relative to gross output tends to be much higher and inputs to the sector are low relative to output. At the same time, the oil industry is very capital intensive and exhibits limited opportunities either for extended employment or local suppliers if they are lacking the capacity to supply large volumes of specialized capital goods. Any imported inputs constitute a leakage while domestic supplies create benefits for the economy. Additionally, the capacity of local suppliers might be limited due to a number of reasons: missing economies of scale; lack of skills; high production costs; uncertainty about the future demand level related to the life-cycle of the oilfields and possibilities of future discoveries; and the mismatch between the level of development of local industries relative to the size of demand and its specialization that arises from the oil sector. They further argue that the low level of backward linkages provides policymakers with incentives to take active steps to increase the level and extent of domestic inputs – the main argument for the introduction of local content policies that are extensively used by many oil exporters to address market failures in the supply of local goods for the oil industry. As explained by the authors there are various reasons for politicians to introduce local content policies. Political economy considerations add the greatest impetus: since rents from oil extraction directly accrue to the central

government and are hard for the general public to observe, politicians feel pressure from the population to witness more tangible benefits from the extraction of natural resources – increased local jobs and sales from local companies – especially for areas where there are signs of disappointment with extractive operations. Pure economic considerations relate to increasing the domestic value-added through import-substitution and creating more local employment. Though substantial in size the financial link (i.e. state budget revenues) does not always result in the creation of value-added or employment generation since: (1) resource rents might be saved in a sovereign wealth fund; (2) rents could be used to pay out public debt; (3) oil revenues could be spent on other objectives of the government; and (4) there is weak governance resulting in inefficient public spending, poor economic planning, etc. All these factors contribute to decisions for more direct interventions by using either strict regulations targeting specific levels of local inputs (labor, goods, services) or encouraging policies that establish minimal targets. Depending on the level of maturity of the hydrocarbon sectors, oil exporters adopt local content policies. The authors note, however, that for countries with mature oil industries assertive local content policies are seen to be more effective (Tordo et al., 2013).

In fostering backward linkages, the rationale for state engagement is to ensure: (1) technology transfer; (2) skills building; (3) access to finance; and (4) information sharing. Technological development and building of local skills and knowledge are the main areas for state intervention. Local technological capabilities and the quality of human capital define the level of domestic absorptive capacity and determine the extent of linkages. However, barriers within the linkages transmission channel could affect the extent of FDI spillovers or even change its direction from positive to negative. One such barrier could be limited access of local firms to finance. Firms could remain small and fail to satisfy the demand of the capital intensive and large-scale operations of lead firms. Credit constrained firms are less likely to become suppliers of MNCs. Well-developed financial markets facilitate absorptive capacity of local firms. Drawing from the Canadian forestry sector development experience, Keay (2015) concludes that early industrializing resource rich countries over time managed to develop immunity to commodity price volatility that allowed them to avoid the *resource curse*. The source of immunity comes from the diversified industrial structure and promotion of

formal financial markets. In particular, the more sophisticated and mature the financial markets are, the lower is the sensitivity to price volatility since the developed financial markets allow smoothing out of investment decisions in the economy.

In addition to this, the most logical role of the state in supporting linkages is to address information sharing and remove information gaps: helping MNCs become aware of local suppliers and their capacity; and ensuring local suppliers have the access to information on MNCs demand for inputs. Information asymmetry is one of the major sources of market failures. Due to the lack of visibility, qualified local suppliers may not be aware of current or future market opportunities and fail to make preparatory investments. Specific regulatory requirements could help to increase the transparency and access to information on tenders and procurement procedures (Tordo et al., 2013; Farole and Winkler, 2014; Narula, 2018).

Bearing all these ideas in mind, we now turn to the discussion of diversification efforts taken in some leading mineral exporters.

2.3. Country experiences and the role of governance and institutions

In a globalizing world FDI has become important in most developing countries and as a result the practical question of how to benefit from it has gained weight. MNCs procurement and supply management strategies play an ever-increasing role in the economic development of host economies and the capacity of local firms to enter into global value chains (GVCs). Growing opportunities to engage in GVCs impose strict technological, managerial and scale requirements on local firms and more importantly on institutions that support such developments. State policies are also under pressure while governments need to adapt to a shrinking policy space in the context of the World Trade Organization (WTO) and international agreements. Hence, policy tools are changing. Policies focus more on supporting the emergence of internationally competitive local firms and long-term contractual relationships with MNCs. The main argument in the linkages promotion policies is that no matter what the current state of existing linkages is, these could be deepened further through

augmentation of the capabilities of local firms. Strong backward linkages are important for host economies for at least the following reasons: they provide production and employment opportunities for local firms and work as a channel for knowledge and technology diffusion. But these cannot be taken for granted as MNCs follow their own sourcing strategies while local firms might be too weak to compete with foreign suppliers. Overall, the emergence of strong backward linkages is the outcome of balancing the costs and benefits of this process. Country case studies in this area indicate that MNCs in most cases engage in building local linkages. Such activities evolve around five main areas: (1) finding new local suppliers; (2) transferring process technology and product technology; managerial and organizational know-how; (3) trainings; (4) sharing information – technical, market and business information; and (5) financial support. In addition to the MNCs efforts, state policies could further enhance building of local linkages. Policy options for linkage promotion address determinants at the firm, industry and country levels. Major areas for state interventions include: (1) facilitation of information sharing and matchmaking to help reach supply arrangements through fairs, exhibitions, one-to-one negotiations, etc.; (2) support of technological upgrading through requirements on technology transfer, partnerships with foreign affiliates, encouragement of innovations and research and development (R&D); (3) training; and (4) provision of finance. However, success of such policies is linked to the country context. Apart from policies many developing countries engage in tailored linkage promotion programs. Such a pragmatic approach enhances the contribution of FDI in the economic development of the country (UNCTAD, 2001).

The overarching goal of any state program on backward linkage development is to improve the capabilities of local firms to supply inputs to MNCs that are being imported and help domestic firms to move into export markets. The core elements for such programs to work effectively include: (1) creation of critical mass of buying firms (strong demand-side); (2) building of qualified domestic suppliers; (3) establishment of an effective selection mechanism in line with MNCs requirements; and (4) provision of supporting mechanisms for local firms to overcome supply-side constraints. Overall, policies that build on the mutual interests of MNCs and local firms are more successful in fostering linkages and international competitiveness of domestic firms (UNCTAD, 2010).

The experience of successfully diversified minerals exporters points to the importance of consistent and long-term policies, supply of institutions and promotion of supportive governance practices. For countries with weak institutions, good governance practice is seen as a key element in the economic diversification process. Governance reforms go beyond political institutions and the most important areas for improvements to ensure economic development include: (1) stability and predictability of rules creation and implementation; (2) control and reversal of the trend on expanding state presence in the economy; (3) fight corruption; and (4) increase the trust in the court system (Nellis, 2014, p. 286-304). Some countries discussed here relied on strong fiscal linkages to use oil revenues for development of new industries (e.g. United Arab Emirates) while others directly fostered backward linkages (e.g. Norway). Overall, the role of strong governance practices and a supportive institutional setting play an important role in embedding extractive industries in the development process. Various country experiences also indicate different approaches employed to address the issue of economic diversification through varying policies. Successful industrial policies have institutional roots and are linked to state capacity. To some extent, the ability to implement and enforce effective policies is cumulative knowledge. State capacity building is associated with the process of trial and error and increased state capacity results in the improvement of state intervention. In the case of resource-rich economies, governance, strong state capacity and capable economic bureaucracy are complementary to resource wealth and improvements in these institutions benefit the diversification process substantially.

In the sample of 11 Middle East and North Africa countries Matallah and Matallah (2016) show that enhancement of governance capabilities creates opportunities for more diversification and robust economic growth. Governance here is not seen narrowly as the way of implementing policies and practices but as a set of good quality institutions that maintains the process of rent allocation. These, among others, relate to institutions that control the ruling elites' desire to use rents in pursuit of their electoral goals as well as curb private agents rent-seeking behavior, promote accountability and transparency on how resource rents are used, enhance credibility, and ensure the sound use of public finances and macroeconomic management. Strong institutions are the mediating factors between utilizing natural wealth and achieving economic diversification. The success of diversification

efforts rests on the four pillars of governance indicators: (1) democratic voice and accountability, (2) quality of bureaucracy, (3) regulatory quality, and (4) control of corruption. The authors find that the combined effect of good governance practice and oil rents is capable of promoting economic diversification. This leads them to the conclusion that the triptych of *oil rents-governance-economic diversification* could serve as a basis for sustained growth with governance being the key mediating factor. At the same time governance practices cannot be changed immediately and require time and strong commitment to the ideas of resource-based development.

A good example of consistent and long-term policies on economic diversification is Malaysia. Though oil and gas were late entrants to Malaysia's economy, strong leadership, political stability, and sound strategic planning created the prerequisites for diversification. Since independence in 1957, there has been continuity among political leaders to follow the path of economic development. Before Mahathir there was already a strategic vision reflected in the New Economic Policy (NEP) to overcome poverty and inequality. Malaysia's Father of Industrialization Mahathir Mohammed who was running the country as Prime Minister for more than 20 years from 1981 laid the foundations of economic competitiveness (Ali, 2016). From the early 1960s to 2003 the share of manufacturing in GDP rose from less than 10 percent to 30 percent (Jomo, 2007). In the 1970s when commercially viable oil and gas deposits were discovered in Malaysia's coastal area the economy was already set on a course towards diversification and development of manufacturing. The political, social and economic conditions had already produced strong institutions to support diversification away from post-colonial dependence on primary products. At that time, the government was highly committed to development policies that resulted in the adoption of the NEP in 1970. Stability of the ruling regime and decades-long economic policy to reform the economic structure in Malaysia resulted in path-dependence. There was a strong commitment at the highest political level to deliver economic growth that allowed institutionalization of diversification. Nowadays, Malaysia is ranked among the most competitive economies in the world (WEF GCI, 2018). All these positive achievements add to the credibility of Malaysia's state capacity to build and sustain a diversified and competitive economy. Increasing returns from the development of manufacturing allowed less reliance on oil and gas and made reallocation of development efforts

towards extractives less viable. Turning back from the reform path towards dependence on primary exports would involve very high policy reversal costs and was not an option for policymakers (Noh, 2016).

In contrast to Malaysia, the United Arab Emirates (UAE) relies heavily on the oil and gas industry but its economy is well positioned on a diversification course. In its diversification efforts the UAE has relied on government actions to foster new industries (logistics, finance, tourism, polymers, base metals), create a favorable business environment (special economic zones with attractive tax regimes), and support innovation (e.g., creation of UAE Space Agency). The main non-resource sectors are plastics, steel, aluminum, copper and machinery (Al-Hashemi, 2016). The business-friendly environment, modern infrastructure, consistent regulation and efficient project management contributed to the economic diversification in Dubai. Efforts to diversify the economy are reflected in a number of strategic documents at the UAE national level (Vision 2021) as well as for each emirate (Abu Dhabi Vision 2030, Dubai 2021). Strong financial reserves accumulated in the state's wealth fund, provision of macroeconomic stability, capital mobility, and large government spending on infrastructure contributed positively to a more varied economic structure. The share of hydrocarbon industries in GDP decreased to 30 percent in 2014 from 79 percent in 1980 (Tordo et al., 2013). However, the domination of state-owned enterprises, limited access to funding to support start-ups and small and medium enterprises (SME's), dependence of promoted industries on subsidies and the lack of highly-skilled labor creates challenges for diversification and pitfalls to break the dependency on hydrocarbons.

Norway in its diversification efforts employed active policies to foster the absorptive capacity of the economy and create strong linkages. The state policy was to force foreign oil and gas companies to collaborate with local research institutions, service industries (engineering) and producers of oil rigs, platforms, and equipment. Permission for foreign companies to drill for oil assumed a high level of interaction with local industries and scientific organizations. Over time, however, this *enforced marriage* turned to partnership and created the new knowledge industry specializing in offshore oil operations. Offshore oil extraction in Norway gave rise to the development of a strong information and communication technology (ICT) industry, machinery and engineering companies, research institutes and

consulting firms. Later on, all these industries became exporters with high levels of competence in the petroleum sector and transferred specialized knowledge and technological spillovers to the rest of the Norwegian economy. Thus, the resource sectors gave rise to knowledge accumulation and the emergence of *enabling* sectors that further diffused the knowledge and technology to a broader economy supporting the evolution of new industries. This outcome was possible due to institutions to support the dynamic interaction between firms and which allowed technological deepening (Ville and Wicken, 2013). In Norway, the legal framework was created to capture the benefits of production cost spending by oil companies and develop the local supply sector for the petroleum industry. When the Norwegian government initiated its policy in oil industry it already had some experience in regulation and intervention in the hydropower industry. The fundamentals of the Norwegian policy towards its petroleum industry were laid down in 1971 with the approval of ten oil commandments. These commandments empowered the state with the control over the petroleum industry to protect and pursue the national interests associated with oil extraction. At the initial stage the policy was extremely protectionist. The state enforced deeper information exchange, skills development, and technological transfer to build the capacity of local companies. The policy was aimed at the creation of the Norwegian oil community. The local content norms were explicitly incorporated into the subsoil use licensing system to promote infant industries. From 1974 until 1994 all oil operators were obliged to inform the Ministry of Petroleum and Energy about their suppliers and Norwegian content. To monitor and enforce the procurement process the Goods and Services office was created. Thus, the policy aimed at creating new industrial incentives from oil extraction and to serve the interests of Norwegian society. As a result, Norwegian companies were contracted to supply 50 to 70 percent of goods and services in this period. In 1994 Norway joined the European Economic Area and changed its petroleum legislation to make it non-discriminatory toward international firms. However, within the 30 years from when the legislation was enacted, Norway developed a national petroleum cluster with a strong supplier industry that contributed to further diversification of the economy (Hunter, 2014).

Brazil pursued active policies to develop an oil and gas supply chain. The national oil company, Petrobras, played a crucial role in policy implementation. The policy required operators to direct at least

1 percent of gross revenue from each field for R&D in oil and gas. Of this amount, up to 50 percent of the funds could be used by the operator in its own local research facilities while the rest is utilized by local universities or research institutes accredited by the government. Moreover, public spending included a separate expense item for programs on scientific research and technological development in the oil industry (Tordo et al., 2013). The other policy initiative that supported technological advancement in the oil industry is called Repetro – a special customs regime introduced in 1999 for the import of goods (e.g., oil platforms, equipment) for the oil and gas industry. An extension of Repetro is expected to cover imports of intermediate goods used to produce final goods in the oil and gas industry²². The other pillar of Brazil's oil and gas supply chain development policy is run by Brazilian Development Bank (BNDES). The BNDES program aimed at removing the supply chain bottlenecks associated with access to credit, high capital costs and acquisition of technology. Effective between 2011-2015, the program offered funds for projects undergoing production capacity expansion; supply chain development, including internationalization; working capital for producers of equipment and service providers; and support for R&D and innovation activities (BNDES, 2011).

The presence of externalities does not mean that the domestic economy can internalize them or that externalities are significant in quality or quantity. What matters more is the local absorptive capacity. This determines whether the country is capable of capturing spillovers related to knowledge and technological upgrading (Narula and Lall, 2006). Linkages do not emerge automatically as a direct outcome of the presence of MNCs and building of these linkages requires the engagement of all stakeholders: government, MNC and local business. While the government can contribute with its supportive horizontal and vertical policies, input from the MNC and local business takes the form of commitment to local development and their vision how this could be achieved jointly (Ruffing, 2006). Overall, successful country experiences in the management of extractive industries opens the way to debate on coupling the resource extraction with ideas of sustainable development. While earlier studies of mineral economies driven by the resource curse and dependency theory suggested that such a

²² <https://www.hartenergy.com/exclusives/meaningful-changes-repetro-sped-could-rebuild-oil-gas-sector-brazil-30868>, accessed on 24 March 2020

relationship is not possible, the experience of industrialized mineral economies offer new areas for policy debate. These debates are largely driven by international development organizations under the overarching concept of SDGs and are summarized in the next section.

2.4. The move to sustainable growth

The role of natural wealth for economic development is a long-standing topic. It is receiving more attention in the aftermath of the commodities boom of the last decades. Many developing countries are becoming resource exporters and the question of how to utilize the resource rents for inclusive and yet sustainable growth attracts the attention of both academics and policymakers. At the same time, sustainability is acclaimed by international development organizations to become the guiding and universal principle of contemporary economic development. As climate change has become an observable threat, greater awareness is directed towards factors that could limit it both at national and international levels. The United Nations developed the set of 17 SDGs that aim to achieve inclusive and environmentally sustainable economic growth around the world by 2030. Goal 9 of the SDGs stresses the importance of promoting industrialization and sets the aim of doubling the manufacturing share in GDP in the least developed countries as well as the integration of SMEs in developing countries into value chains and markets.²³ The widely agreed sustainability concept shapes not only public policies but also more importantly corporate policies of international companies as they operate around the world and feel pressure from international society to be more responsive in the use of non-renewable resources of the planet in a sustainable way. The SDGs require the building of partnerships, collaboration and cooperation among a wide range of stakeholders: governments, companies, donors, and communities. The private sector and society are invited to take part in the national plans to achieve SDGs. Stakeholders could engage in a dialogue to search for and identify overlapping development priorities and align efforts in achieving negotiated outcomes. This is especially the case in the oil and

²³ <https://sdgs.un.org/goals> , accessed on 15 March 2020

gas industry as it remains the major energy sector in the world. Oil and gas companies are expected to go beyond regulatory requirements and adhere to the SDGs principles by implementing them at all stages of their operation: from R&D to procurement policies²⁴.

In relation to oil exporting countries, the promotion of sustainable development in the first instance requires thorough coordination within the government (since managing resource rents engages a wide variety of ministries, agencies and companies), multi-stakeholder dialogue and building partnerships between the public, private agents and society based on trust and collaborative governance (McPhail, 2017). The underlying drivers of MNCs compliance to international and local standards range from gaining access to finance in international markets to maintaining the good reputation of a responsive company and getting the social license to operate in the host country and around the globe (Tomlinson, 2017).

At the international level there are some key government-targeted initiatives that are aimed at sustainability by improving governance practices. One such important initiative is the Extractive Industries Transparency Initiative (EITI). EITI encourages both governments and companies to release the information about resource rents in the form of taxes received and paid. These initiatives seek to offer benchmarks and guide resource rich countries on best policy practices. The wider goal is to promote the emergence of accountability and transparency as the main institutions to support the growth process in resource rich countries and ensure real improvements over time. Thus, the international community also plays a crucial role in standard setting and guiding governance practices adopted at the national level both for governments and companies (Cust, 2017).

Summary

Based on the literature discussed in this chapter we know that a resource-based path to development lies through linkages between

²⁴<http://www.ipieca.org/resources/awareness-briefing/mapping-the-oil-and-gas-industry-to-the-sustainable-development-goals-an-atlas/>, accessed on 17 March 2020

extractive and non-resource industries. However, such linkages are not straightforward and their development in most cases is associated with deliberate efforts to do so. Resource rich countries in their efforts to industrialize their economies have engaged interventionist policies. Country experiences show that the process relies on a set of strong long-term policies, consistent political leadership, commitment to development, and a supportive governance and institutional framework. Thus, industrial transformation in resource-rich developing countries is associated with intentional support for development of non-resource industries, mainly supply manufactures around extraction operations. Whether externalities from extractive industries can be internalized depends largely on the development of local competitive suppliers. The ultimate goal of state policies in this area is to increase the absorptive capacity of local firms, when this is weak, to allow domestic producers to become reliable suppliers.

Although extractive industries could undermine the development of manufacturing industries, fostering production linkages is the most direct approach to open up prospects for the emergence of new satellite industries around a lead industry and achieve wider economic diversification. The ability to capture externalities from extractives to develop a location-specific set of supply industries provides a foundation for higher growth. The most natural path towards that aim in a globalized world is by connecting local suppliers to MNCs operating in extractive industries. MNCs can stimulate development of local economies. Positive spillover effects from MNCs' operations increase with the level of local capability. If these are not in place, the extractive industry may exist as an enclave while MNCs have the capacity to internalize value chains by means of vertical integration and use their *deep pockets* to operate in economic isolation in the host economy.

Globalization is one of the main driving forces that allowed for greater linkages and opened ways for deeper government-MNC collaboration and embedding FDI's externalities in development plans of the nations. The other supporting factor is the emergence of the global agenda on the promotion of sustainable development that calls for greater awareness of the quality of economic growth, especially when it comes to the use of non-renewable natural resources. The contemporary extractive industries are not seen as a hurdle to development but rather as a potential source of sustained and sustainable growth. Such an approach to development relies on the

promotion of collaboration and partnerships among various stakeholders to achieve sustainability in economic growth.

The literature clearly states that capturing spillovers from the extractive industries and transmitting the benefits to the wider economy is a challenging task that cannot be left to market forces. The state plays a crucial role as a facilitator, regulator and information provider through its sectoral policies as well as by creating the conditions for doing business locally at the macroeconomic level. The host country context also plays a role as it defines the quality of institutions that maintains the process of linkage creation.

The main conclusion of this chapter is that despite the strong potential for economic diversification by building linkages, the process is highly dependent on country specific factors – policies, governance practices and institutions. In a modern world there are still many mineral economies that remain strongly dependent on extractive industries. Exploring the context specific challenges of resource rich economies in building linkages is an important source of knowledge. This inquiry is based on the theoretical framework that offers theories on how resource-based development could be achieved and what are the underlying possibilities for failure. The next chapter discusses theories on why mineral economies succeed or fail and why it happens as well as the reasons for weak absorptive capacity. The chapter examines the theories that explain how and why policies, governance and institutions affect economic development of mineral economies.

Chapter 3. Natural resources: from “resource curse” to development. Theoretical framework of the debate

The presence of vast resource rents could become either a blessing or a curse. With the commodities boom observed over the last few decades, oil exporters were blessed with windfall gains from resource revenues. But no commodity boom lasts forever and not all oil exporters are better off in the aftermath. Conventional wisdom dominant in the literature on the development patterns of resource-rich economies was that natural wealth undermines industrial upgrading. The *resource pessimism* was associated with the *resource curse* theory and a failure by many developing resource-abundant economies to perform well, their economies becoming highly dependent on a few goods and getting trapped by the comparative advantage in exporting the natural resources. However, backwardness of a resource-rich country is not always a given fate as experience of successfully industrialized resource exporters clearly demonstrates (Torvik, 2009).

The catch-up process in resource rich economies requires structural transformation that hinges on proactive policies to foster inter-industry linkages. This change is not always a market-led process and requires state involvement as market failures in developing countries could be rampant while private agents face collective action dilemmas and are constrained by coordination failures. Dealing with market failures and collective action problem requires supportive governance mechanisms and strong institutions (Matsuyama, 1997; Rodrik, 2009; UNCTAD, 2017; Narula, 2018).

Utilizing the potential of extractive industries for changing the economic structure is a challenging task. This chapter reviews the literature on the theories of economic development in resource abundant countries with a particular focus on the resource curse theory and why it is adversely related to institutional development, good governance mechanisms and wise industrial policy. The chapter starts with a discussion of the resource curse theory as the conventional wisdom that existed to explain the growth processes in resource rich economies. The genesis of the resource curse is then considered through the perspective of institutional theory and theories of institutional change. The chapter continues with a discussion of

possible ways to avoid the resource curse with a focus on the role of the state, governance of resource rents and policies to capture the potential of extractive industries for development.

3.1. Resource curse theory and its criticism

Countries rich in natural resources sometimes demonstrate very poor economic performance. With the exception of a few successful cases, in most resource rich developing countries the population continues to live in poverty. The *resource curse* (Auty, 2002) is often used to describe this phenomenon or sometimes it is coined as a *paradox of plenty* that mostly relates to the specific natural resources (like oil and minerals). The seminal work of Sachs and Warner (1997) empirically tested the resource curse to provide empirical evidence for the lagging performance of resource rich economies compared to others.

The resource curse has received a great deal of attention from both academics and policymakers searching for explanations on why it happens and how to leverage the natural wealth to avoid the resource curse situation and deliver benefits more generally across the wider economy. The genesis of the resource curse is of a complex nature. Whether the country will or will not experience it depends on the economic, social and political context of that specific country. Putting aside political and social aspects for the moment, economic transmission channels of the resource curse evolve mainly via its negative impact on manufacturing that is widely referred as the *Dutch disease* and alleged to be the most prominent symptom of the resource curse. Initially the term Dutch disease emerged in the late 1970s to describe the contraction in manufacturing output in the Netherlands after the discovery of a large gas field in Groningen (Stevens et al., 2015). Dutch disease develops as the outcome of the increase in prices brought by the rise in domestic income from resource windfalls. Two effects arise from this situation that both lead to crowding out of manufacturing. The first one – *spending effect* – decreases the competitiveness of other tradables by making them expensive for exports due to inflated domestic pricing (high inflation and appreciated exchange rate) and induce the rise in non-tradable sectors (services,

real estate market, etc.). The second effect – *pull effect* – relocates factors of production (capital and labor) towards the resource sector and increases the production costs of those factors for other sectors, i.e. manufacturing and agriculture (Badeeb et al., 2017).

Overtime, the use of the Dutch disease term has broadened to cover all kinds of negative macroeconomic effects of resource-led growth as theoretical approaches to explain this phenomenon evolved further. The theoretical examinations depart from the idea that manufacturing plays a crucial role for the development as a source of employment (Felipe et al., 2014), industrial upgrading and sustained growth, sometimes at very high levels (Rodrik, 2007). For example, negative impacts of Dutch disease have been analyzed from the perspective of subsidies to support ailing tradables sectors that become unsustainable overtime and a drag on the fiscal burden, in contrast to learning-by-doing that pushes the productivity up but is mostly accrued from the competitive manufacturing (Stevens, 2015). The other important channel of transmission of Dutch disease is related to features of extractive sectors: they can operate as a large-scale, capital-intensive *enclaves* often run by leading international firms and exist without any strong linkages to the wider economy (Gelb, 1988). These enclaves can internalize value chains and imperfect markets (e.g. use transfer pricing) (Narula, 2018). Hence, enclaves create no externalities or spillovers to benefit the rest of the economy and do not support the building of new industries and as a result resource economies remain mono-product with expanded non-tradables sectors. Expansion of the extractive industries traps the mineral economy to its *natural Ricardian position* causing premature de-industrialization in developing countries that weakens their growth prospects (Palma, 2005, 2014). It becomes very hard for a mineral economy to exit this vicious circle.

Still, the experiences of successfully industrialized resource-rich economies suggest that the natural wealth is not always a curse and there is a resource-based path to economic development. The revisionist literature arrived contests the conventional wisdom of the resource curse, especially the empirical evidence for it. The survey of quantitative evidence on the incidence of the resource curse by van der Ploeg and Poelhekke (2017) finds that the old cross-country empirical evidence is not robust as there are too many confounding factors complemented by endogeneity biases that turn this evidence into a statistical artifact. New innovative datasets that rely more on micro-level data and more sophisticated identification strategies are better to

capture the quantitative effects of the natural wealth. As they show, these types of datasets tend to find positive impacts of the resource wealth. Combining theory and empirics in their literature survey of the evolution of the resource curse thesis Badeeb et al. (2017) conclude that, although the empirical evidence on this phenomenon is ambiguous, the theoretical arguments on the causal mechanisms of how it transmits into the slow growth of the economic system are plausible.

At this point it is important to turn to the country context and include in the analysis political and social variables, which together could be denoted as *institutions* that frame the way resource rents are managed. In particular, institutions shape the economic and political context of the country and maintain the efficient use of the natural wealth for development. Looking at the resource curse from an institutional perspective allows understanding of its genesis and more importantly the potential cures for it.

3.2. Institutions, economic development and natural wealth

Following Douglas North, institutions consist of formal rules (laws, statutes) and informal constraints (e.g. traditions, beliefs, etc.) that exist in the society and their enforcement characteristics (North, 1991). In this research we follow North's definition of institutions to mean the existing beliefs and perceived reality of agents about the surrounding environment that bring in informal and formal rules to shape the behavior and patterns of human interaction. North argues that rules enforcement goes through self-imposed codes of conduct, retaliation and societal sanctions or coercive actions of the state. According to North, institutions impact economic activity as they determine transaction and production costs. Institutions being enforceable rules can create trust between economic agents by limiting opportunistic behavior, stronger practices of property rights protection and contract enforcement, lower the costs for information search and allow more cooperation and exchange. Hence, institutions reduce uncertainty. As North argues, institutions determine the payoff the country gets since institutions are "the structure that humans impose on human interaction and therefore define the incentives that, together

with the other constraints (budget, technology, etc.), determine the choices that individuals make that shape the performance of societies and economies over time” (1993, p.35). The dominant beliefs of political and economic entrepreneurs shape policies and over time a complex institutional matrix emerges that drives the economic and political performance of the country (North, 2010). Institutions as rules of conduct are always enforced, if the rule is not enforced, it is not an institution. Depending on their genesis, institutions could be internal (conventions, internalized rules due to personal experience, education, habit, customs and good manners) and external (man-made) (Kasper et al., 2012). Hence, institutions are integral to production and exchanges processes as any other economic factor and are reflected in the costs for transacting. It is now widely agreed in academia that institutions play an important role in economic development and the differences in country performances are defined mostly by the institutional setting in which production activities are taking place.

For countries rich in natural wealth the resulting institutional matrix needs to be capable of address issues of rent-seeking, corruption, and economic mismanagement, which could arise from resource windfalls. Mehlum et al. (2006) provide empirical evidence that the quality of the institutions determines whether the resource rich country is a growth *loser* or a *winner*. In their analysis the quality of institutions is proxied by an aggregated index consisting of unweighted averages of five indexes: the rule of law, bureaucratic quality, corruption in government, risk of expropriation, and government repudiation of contracts. The authors find the empirical evidence that a combination of weak institutions – that they call *grabber friendly* – with resource abundance do cause a resource curse. On the other hand, countries with institutions that can stimulate alternative productive activities benefit from the natural wealth. Thus, countries willing to leverage natural wealth for economic development need to aim for positive changes in the quality of their institutions to avoid being cursed by resource wealth. Here arrives the logical question: how to foster positive change in institutions, i.e. induce institutional change?

3.3. Institutional change

North et al. (2009) show that economic development is associated with the transition to an *open-access social order* that allows free and impersonal access to public and private organizations. In contrast, in a limited access order, personal relationships prevail over political organization, access to organizations, resources and activities are privileged for a dominant coalition of people. Modern societies with pluralistic political structures and unbiased application of rules are the result of the transition from a limited- to an open-access social order. Such transition entails complementary changes in both the polity and the economy: "Over the long term, open-access politics cannot be sustained without open-access economics, and vice-versa. Although evidence from the last few decades is mixed, over the last two centuries, political and economic development appears to have gone hand-in-hand." (p.56) Co-development of economic and political institutions allows countries to better adapt to the process of change, i.e. exhibit adaptive efficiency. In open-access economic systems, the distribution of economic rents is dynamic and competitive (e.g. *creative destruction*) and this in turn supports open access in politics. The transition to an open-access system starts with the incentives of elites to open up for newcomers and allow the institutionalization of an open-access social order.

Since institutions are systems of beliefs (formal and informal) they are very stable and even when they change it is highly incremental and path-dependent. The way institutional change happens is a very comprehensive process and there is still no consensus on this. A complete theory of institutional change is still under debate and development. Chang (2011) distinguishes two mainstream views on the emergence of institutional change: voluntarism and fatalism. Voluntarism believes that changing institutions is easy. This view arose in the late 1990s with the Washington Consensus style policy advice to poor countries to adopt *better* institutions to overcome market failures, i.e. deregulation and trade liberalization, democracy, good governance, and the Anglo-American property rights style, etc. At the same time, the fatalism view argues that institutions are not easy to change as they are products of climate and culture, and that a country's fate is already written (p. 489). Chang defines both these views as *corner solutions* that

fail to recognize the complexity of institutional evolution and the importance of human agency for institutional change (p.494).

On the process itself, North suggests that external sources of change (technology, resource endowments, etc.) weaken the existing order and may create a window of opportunity for political entrepreneurs “whose degrees of freedom will increase in such situations and, on the basis of their perception of the issues, give them the ability to induce the growth of organizations with different interests (or strengthen existing ones)” (North, 1993, p.38). Still, political entrepreneurs are constrained by the costs of institutional innovation associated with the mobilization of large political resources to design new institutions and resolution of conflict among losers or suppression of the opposition. For institutional innovation to happen, gains accrued by political entrepreneurs need to exceed the marginal cost of mobilizing the political resources (Ruttan, 2006).

The stability of institutions is the other argument on why countries persist in having institutions that are dysfunctional. According to Acemoglu and Robinson (2010) economic institutions define not only the rules of the game but also the distribution of resources in the economy. Different agents and groups prefer different sets of institutions to be in place. Thus, economic institutions that are supported by the group with the strongest political power tend to persist, indicating that there is a high degree of interaction between economy and polity. This implies that reforming economic institutions without subsequent reform of the distribution of political power is likely to be ineffective. At the same time, Acemoglu and Robinson argue that reforming political institutions might not work either as political equilibrium tends to be both persistent and path-dependent (p. 11). To effectively implement institutional reform, one needs to analyze the forces behind economic institutions that challenge the process of reform. Despite many pitfalls in reforming the economic and political institutions, successful reforms are still possible. As the authors note, in those successful cases “growth occurred because the political equilibrium changed in a way that gave more power to those who wanted to push through reforms” (p.26). Thus, political entrepreneurs can play a major role in designing institutional change in a top-down manner through the political process (centralized collective-choice process) of rules-creation (Kingston and Caballero, 2009). This idea opens the way to the discussion of the role of the state in economic development as it has the authority to create and enforce the rules.

3.4. Role of the state in the economic development

There are various views on the role of the state in economic development that range from seeing the state as an observer to its direct intervention in the market. In neoclassical economic theory the state is given the role of the provider of a level playing field for market forces – main drivers of economic development. Mainstream economics draws on comparative advantage and perfect markets that allocate resources efficiently. Countries in the process of development need to follow their comparative advantage and rely on market forces. This view constituted the basis of the Washington consensus style recommendations for developing countries to strongly follow a market-based approach: deregulation, privatization, trade liberalization, etc. However, in prescribing such a recipe for developing countries, advanced economies are accused of *kicking away the ladder* from developing countries as the former did not follow the advice themselves. There is strong historical evidence showing that developed countries used protectionist policies and state intervention to promote the development of national industries in their catch-up process to reach the development frontier (Chang, 2003, Reinert, 2007). This revisionist view gained weight with the publication of the World Bank's report (Birdsall et al., 1993) on economic growth in North-East Asia and was coined as an *economic miracle* due to the remarkable and rapid growth achieved in the region. The authors conclude that although selective interventions contributed to growth, an appropriate institutional setting (e.g. monitoring arrangements of policy performance, politics, history, culture, etc.) ensures the success of the policies. Drawing on Japan's economic growth Johnson (1982) introduces the concept of the *developmental state* to define the state that takes developmental functions and leads the industrialization process to achieve the level of industry complexity of the reference countries: "... the government was the inspiration and the cause of the movement to heavy and chemical industries ... This shift of "industrial structures" was the operative mechanism of the economic miracle." (p. 31).

Evans (1995) extends further the gradation of types of state. In contrast to the developmental state, he introduces the *predatory state* that embodies apparatuses to destroy "any possibility of rule governed behavior in the lower levels of the bureaucracy, giving individual

maximization free rein". (p. 46). Rules and decisions are for sale. Bureaucracy is so weak, that it cannot overcome individualistic patterns of its incumbents. As Evans concludes:" ... it is not bureaucracy but its absence that makes the state rapacious" (p. 47). With this type of state any economic transformation is not on the agenda. Evans notes that a distinct feature of the developmental state is not only possession of Weberian-type bureaucracy but its close links to society through different institutionalized channels. This connectedness serves as a source of competence and ties state and society together. Through these ties the state is *embedded* in a society and has continuous dialogue over goals and policies. Being embedded, the state is still able to independently formulate collective goals without being captured by private interests and keeps its *autonomy*. According to Evans *embedded autonomy* is the main governance feature of developmental states in East Asia that made economic transformation possible (p. 50). In all three countries that he was analyzing only South Korea acquired *embedded autonomy* while India and Brazil were found to be intermediate states. *Embedded autonomy* allowed Korea to succeed the most in *constructing comparative advantage* in the IT-sector at international level and become competitive worldwide. While Brazil and India did not fail completely in fulfilling this task, they cannot claim to be as successful as Korea. All three countries were highly creative and adopted institutional innovation in their state structures to achieve the aim of development.

This implies that countries with limited capacity can still enter into desirable market niches and create new sectors with high value-added and high-profits. For developing countries, or as Evans calls them, intermediate states, the main indication is that they have to try to emulate the embedded autonomy of developmental states, accepting that full replication is unlikely. So, the main advice would be - to build a coherent, cohesive bureaucracy, increase state capacity, and find the best ways to use existing institutional assets for the sake of economic development. In this respect, the development process is also associated with the evolution of the state itself and its capacity to govern the development process. The quality of the supplied institutions is highly dependent on the commitments of political leaders and the political forces behind the rule-creation process. In delivering institutional change, the state acts via external institutions and is challenged by the stability of informal institutions, strategic uncertainty of rule-making and the ambiguity of the outcome of the reform due to

complementarity among institutions and fragmented knowledge about the surrounding reality (Ahrens, 2002, p. 64-65).

Overall, the East Asian region created fertile ground for debate on what exact functions the state should have in the development process. In an attempt to reconcile the market-friendly (when the state directs its activities to foster market coordination) and the developmental state (when the state acts as a substitute for market coordination) views, regional economists (Aoki et al., 1997) identified the third option – the market-enhancing view. This view emphasizes the role of the state in facilitating and promoting private sector coordination. The view departs from the idea that market failures arise due to coordination failure, which are broader and more fundamental than the former. In developing economies, the capabilities of the private sector are constrained by such coordination failures. The role of the state is to foster development of institutions that help the private sector in resolving coordination failure, e.g. financial intermediation, business customs, trade chambers, etc. By providing such institutions and interacting with them the state helps the private sector to overcome market failures. At the same time the centralized coordination is not a proper substitute (as seen in the developmental state view) since it will interfere or distort private sector experimentation to find ways of coordinating new economic activities (Matsuyama, 1997). Whether the state is successful in resolving the coordination failure is conditional on the institutional context, historical and external conditions, and over time, the scope of intervention changes. Thus, state intervention is a dynamic process that needs to be tuned and adjusted not only for the sake of its efficiency and effectiveness but also to go in line with the country's stage of development and changes in external conditions (e.g. technology). As Aoki et al. (1997) note: "When the economy is in a low state of development, the availability of intermediaries is limited, the capabilities of firms are modest, and even the efficiency of markets is hampered by poor integration and underdevelopment of property-rights arrangements in the economy. Under these circumstances, the ability of the private sector to solve challenging coordination problems is suspect, and there may be significant scope for government policy to facilitate development. As the economy matures, however, the ability of private sector improves and the scope for policy becomes more limited." (p. 22)

The important point to note is that countries with weak institutions still managed to initiate economic growth. As Johnson et al.

(2010) note, the initial weak broad set of institutions does not undermine long-term economic growth. Over time institutions respond to economic and policy changes and can improve. Chang (2011) argues that indeed the causation goes in both directions: from institutions to economic development and in reverse. Economic development contributes to institutional evolution mainly through the following channels: (1) higher income levels demand higher-quality institutions; (2) with increased wealth costly institutions become more affordable; and (3) new agents of change demanding new institutions arrive with economic advancement (p. 476). Chang suggests that causality running from economic development to institutions is much stronger than otherwise as today's developed economies acquired all those best growth-supportive institutions after they became rich in terms of economic development. Chang concludes that developing countries need to put more effort to maintain economic development rather than acquiring institutions but still use the "late-comer" effect to adopt superior institutions and avoid costs for their development (p. 477). This implies that anything that generates growth is beneficial in all means. As the East-Asian countries experience shows, institutional development is mainly associated with expansion of the manufacturing exports. In relation to resource rich economies this implies the need for a favorable regulatory regime for non-resource exports and avoiding exchange rate overvaluation (Johnson et al., 2010). On the other hand, coordination failures are widespread even in developed economies with highly complex markets and advanced technologies meaning that there is scope for the state's role in determining the direction for the economy to evolve (Aoki et al., 1997).

In the era of globalization, national production processes are becoming parts of GVCs and networks and require consequent changes in economic governance. As firms are becoming more integrated into global production networks and ongoing deeper strategic coupling of national firms with lead global firms is observable, steering the market in developmental state style is increasingly difficult and problematic. The state is not seen as a dominant actor in facilitating industrial transformation anymore. Instead, competitiveness of national economies becomes dependent on the successful conjunction of domestic firms into GVCs. Thus, the dynamics in global supply chains is now becoming important to consider for economic development (Yeung, 2014).

In today's globalized world the classic developmental state model is only viable for developing countries with large internal markets (e.g. China, India) while the WTO rules, high entry barriers to GVCs and neoclassical approach to investment rules, constrain the use of policy instruments to create a diversified and autonomous industrial base. Thus, there is still scope for a new version of the developmental state that acts and adapts its policy tools in accordance with the international economic order and governance (Wade, 2015). But it does not mean that the state has to limit itself to the role prescribed by neoclassical theory. It still could undertake an entrepreneurial role by acting more strategically and leverage the scale of constraints within WTO rules for policy maneuvers to move up the value chain. Indeed, there is evidence that after the last financial crisis, states around the world are becoming more selective with industrial policy coming back into fashion (Wade, 2015).

3.5. The return of Industrial policy

The vision of industrial policy and its role in economic development has transformed from rejection (when markets are seen as perfect and efficient in selecting activities) to justification (deliberate import-substitution or export-promotion policy efforts largely observed in Latin America and East Asia). Industrial policy could be defined in the narrow sense as sector specific (targeted or vertical) or in a more general form to include any functional (horizontal) policies that benefit all industries (education, infrastructure, R&D, etc.). Evidence on state failures in *picking winners* and to resist state capture by vested interests called for the abolition of vertical policies towards more horizontal ones. However, in addressing market failures some level of selectivity is unavoidable (i.e. the choice between which education faculties to finance) while horizontal policies are hard to implement and monitor the many *leakages* for universal welfare that they potentially exhibit. Theoretical justifications for the use of industrial policy are well defined (e.g. Rodrik, 2004, 2009). However, its practical applications consider key arguments related to: complementarities and interdependencies between activities that need to be coordinated (e.g. under-investment in one industry leads to

under-production in others or excess capacity in one industry leads to excess competition and waste of resources); capabilities building that require time, funding and technology transfer; and risk and uncertainty (*deep pockets* of public funds can influence risk-taking) (Chang et al., 2013). With the growing understanding on how market failures can impede development, there are calls to broaden the agenda for industrial policy to cover issues like inequality, climate change, economic cyclicity and structural transformation, and creation of the learning society, thus, requiring more instruments (Stiglitz, 2016).

The last financial crisis demonstrated that markets are not always efficient and the state still has a role to play, including bailing out ailing market operators. Strategic industries in advanced economies received generous stimulus packages while the use of industrial policy has been justified to create stronger manufacturing sectors and generate new employment, i.e. for strategic or national security purposes (Stiglitz et al., 2013). The re-emergence of industrial policy around the globe and, particularly, in advanced economies – the strongest advocates of the neoclassical approach – are driven by: (1) the weakened world economy as a result of the financial crisis; (2) a desire to deliver a productive structure of the economy with higher shares of manufacturing and the promotion of *green* industries; (3) the use of emergency anti-crisis stimulus created demand for further support; and (4) rich economies responded to active policies in the fast-growing developing countries, like China.²⁵

The argument for active policies starts from infant industry protection and goes to intellectual property rights protection. Industrial policy is seen as the main tool for delivering structural change. State involvement might open new development trajectories as it can foster technological learning and economic coordination. Not limiting it to sectoral applications, industrial policy is understood by Wade (2015) as “... targeted efforts to change the production structure of an economy in order to accelerate economic development, so it should more accurately be called “production transformation policy” – is an “inner wheel” whose effects depend on “outer wheels” of macroeconomic conditions and underlying political settlements.” (p.68). Thus, the institutional setting plays a role. Strong institutions “organize the interactions among economic agents” and create the environment that

²⁵ The Economist, “Picking Winners, Saving Losers - The Global Revival of Industrial Policy.” (2010)

allows “the experimentation of new products, new techniques, new organizational forms” while “policies regulate behaviors and forms of competition” (Cimoli et al., 2009, p. 21). When it comes to industrial policy as Hausmann et al. (2008) put it “... main purpose of industrial policy is to speed up the process of structural change towards higher productivity activities” (p.1). They argue that the main question is not on what tools to apply (e.g. tax brakes, subsidies, etc.) but how to organize processes and procedures for selecting instruments and economic activities to be promoted. Apart from pure *state failure* (weak bureaucracy, corruption, mismanagement) the inappropriate selection process generates the skepticism on industrial policy as it is seen to create high economic and social costs, fall under vested interest of rent-seeking private agents, and distort markets further.

The rationale for the use of industrial policy is justified by the argument that markets cannot overcome the problem of information asymmetry, coordination and missing public inputs. These types of markets failures hinder the structural transformation and slow down the economic growth. Without appropriate policy interventions these are hard to overcome (Rodrik, 2004, Lin and Monga, 2012, Hausmann et al., 2008). Thus, the rejuvenation of industrial policy proposes the logical question of not whether there is scope for industrial policy but rather how to do it right (Stiglitz et al. 2013). Although there are no ready-made recipes for success, key design features that allow industrial policy to reach its objective are: embeddedness, reciprocity (i.e. *carrots-and-sticks*), and accountability (Rodrik, 2007). In general, as identified by Rodrik (2004), there are core features that increase the chances for successful vertical industrial policy. Among them are: provision of incentives to *new* activities only, clear benchmarks, built-in sunset clause for state support, target activities and not sectors, generation of spillovers, and strong competence of the implementing agency. Strategic collaboration between private and public agents creates the basis for search, identification and response to distortions while none of the agents individually possess the full knowledge about these distortions. Institutions that facilitate this ongoing conversation together with growing state capacity to adequately respond to new economic opportunities will increase efficiency of the policy. This interactive process of policymaking could help in overcoming the constraint on the state side: lack of information for action, allocation of scarce public resources, and lack of incentives for correct action (Hausmann et al., 2008). Overall, developing countries need to use their

latecomer advantage and rely on proactive industrial policies to address their development constraints in the globalized world and manage structural change in an inclusive and sustainable way (Altenburg, 2011). When it comes to the direction of industrial policy, whether the country should follow or defy its comparative advantage is a debatable question (Lin and Chang, 2012) but the argument that industrial policy that follows existing structure of a country's endowment is a strong one (Stiglitz et al., 2013). Market failures are determined by the existing patterns of specialization of that country and reflect its capacity to deal with such failures while acquiring the capabilities to coordinate activities that do not yet exist is a difficult task. Thus, industrial policy could evolve around two axes: on the *small* scale it can aim at fixing local distortions of existing industries and use existing firms as sources of competence, while on the *global* scale it can make *strategic bets* on industries to emerge. While the former relies on institutions that ensure effectiveness and efficiency of intervention (aim at productivity increases, install proper monitoring procedures, sunset clause, accountability, etc.) the latter require a second-order of institutions to support dramatic capability leaps (e.g. from coffee to garments) (Hausmann et al. 2008).

Engaging in industrial policy is also justified to contribute to firm-level competitive advantage. Lazzarini (2015) explores this link and proposes a model in which this link is realized through the accumulation and fostered expansion of local resources and capabilities. In his model, he introduces the concept of support-adjusted sustainable competitive advantage, under which the firm remains competitive compared to its competitors assuming that they have benefitted from the same array of policies. According to the author, industrial policy is aimed at altering the profile and distribution of resources in the economy. At the same time, firms operate under general uncertainty and constant change. In this setting, a firm's learning and acquisition of new capabilities is the dynamic process that is subject to externalities that exist across multiple activities. Hence, external shocks allow firms to learn new capabilities as they affect the quality of their know-how and composition of their resources. Industrial policy can affect resource accumulation and change at firm, industry and country level. Under the assumption of active state intervention, it is important to factor in the extent of state support to understand *the actual profitability* of firms, i.e. support-adjusted competitive advantage that also needs to be sustainable in the long-run.

Not all firms and countries can reach this condition. The relative efficiency of the created competitive advantage differs across countries and firms depending on the set of conditions. In particular, the author proposes three major conditions for industrial policy to generate firm-level competitive advantage: insertion into global production networks; geographical specificity that assumes some unique location advantage; and governmental capability to conduct performance-enhancing interventions. In the author's model, governmental capability is the central element as it allows wise employment of the other two conditions.

UNIDO (2012) notes that in most cases resource rich developing countries suffer from the disproportional development of specific sectors and resource-dependence makes industrial development biased. According to the report, Central Asia displays a high level of resource dependence on energy commodities with a small share of manufacturing in GDP. For example, in Kazakhstan the share of technologically sophisticated goods in total exports declined from 1.3 percent in 2000 to 0.5 percent in 2010 confirming the symptoms of Dutch disease. UNIDO showed that at different levels of income specific industries are peaking in terms of their share in GDP (e.g., the *flying geese pattern*). Textiles, for example, peak at an income level of 5,000 real GDP per capita in 2005 US dollars. While electrical machinery and apparatus, radio, television and communication equipment industries peak at an income level of 13,000 US dollars. By plotting these reference levels, UNIDO uses a *normal pattern to industrialization* approach to indicate for each country the *underperforming and near-to-normal performing sub-sectors* and those sectors that are disproportionately large at the given level of per capita income. The UNIDO findings for Kazakhstan are provided in Table 3.

In general, UNIDO finds that in most cases consumption demand leaks abroad via imports since products become more tradable and only services that are produced domestically benefit the most from the minerals sectors. Evidence on production linkages appears to be very limited. UNIDO provides some evidence from Sub-Saharan Africa. For example, the Report notes that despite the long history (around 50 years) of the diamond industry in Botswana, linkages began to emerge and develop only recently. Capacity and skills gaps hinder expansion of the production linkages in many developing mineral economies. Hence, one way to return to a normalized pattern of industrial development is when deviations from *normality* are targeted by industrial policy and

create competitive advantages in manufacturing industries (UNIDO, 2012).

Table 3: Not-normalized industrial development of Kazakhstan, 2012

Below “normal”	At “normal”
Textiles	Coke and refined petroleum
Tobacco products	
Food and beverages	
Apparel and footwear	
Paper and paper products	
Printing and publishing	
Chemical and chemical products	
Rubber and plastic products	
Non metallic mineral products	
Fabricated metal products	
Machinery and equipment	
Electrical machinery and apparatus	
Medical, precision and optical instruments	
Motor vehicles	
Furniture and other manufactures	

Source: UNIDO, 2012, Appendix A, p. 93.

In the case of resource rich economies, industrial policy is aimed at promotion of activities beyond extractives, i.e. fostering economic diversification. In broad terms, diversification means that a country’s export structure becomes more varied than it was before. As international experience shows, resource-rich economies can diversify upstream (like Chile – going from copper to wine and salmon) or by industries (like Brazil – still being a major coffee exporter but managing to develop new non-resource industries such as airplanes industry). This means that in their efforts to diversify, resource abundant developing countries do not necessarily need to defy their natural comparative advantage. In general, the diversification process in mineral economies substantially relies both on “horizontal” (sector-neutral) and “vertical” (sector-specific) policies. The first set of policies is aimed at sound macroeconomic management: countercyclical fiscal policy, exchange rate policy to avoid excessive currency overvaluation, trade openness to keep traded sectors competitive, credit policy, and investments in human capital. Vertical policies act through public investment programs to support specific non-resource traded sectors, provide tailored infrastructure, and tax rebates and investment

inducements. However, vertical policies have a higher chance of failing if there is a strong import-substitution bias, non-transparent rent allocation to benefit elites, formalism and a propensity to follow failing policies. Even though both sets of policies are targeted to bring down production costs, their success depends on human agency and governance capacity. Without these complementary factors there is a high chance for a country to be trapped by a resource curse. Thus, with good governance practice in place even countries with weak institutions can find the “window of opportunity” to diversify (Gelb, 2011).

3.6. The concept of governance

The term governance could be applied in many contexts. Based on the seminal writings of Coase (1937), Williamson (1979), and North (1991) let us first explore the term from the transactions cost theory angle. Economic activity happens through an exchange process, i.e. transactions – the main unit of economic action. Transactions are characterized by uncertainty, frequency of contracting, and degree of idiosyncrasy (non-marketability or asset specificity). Thus, in the real world the exchange process is not frictionless and incurs transactions cost. In turn, transactions costs identify what governance arrangements match the nature of transactions (i.e. investment decisions): if transactions are standardized, non-specific and happen on an occasional or recurring contractual basis, these are better governed by the market since finding alternative demand or supply is relatively easy. However, if transactions are of a non-standardized nature and happen on a recurrent basis, market governance could be hazardous and instead relational contracting is the better governance mode (either vertical integration when the transaction is removed from the market or long-term (not complete) contract when parties maintain autonomy but have strong incentives to retain relationships due to high governance costs at inception). To manage transactions cost, governance structures have to be in place with markets and hierarchies being two polar cases of such structures. The use of a specific governance structure is in turn aimed at economizing all types of costs (transaction and production). In short, this means that some types of

transactions will never be governed through the market. At the same time governance structures are rules-driven or an “institutional framework within which the integrity of a transaction is decided” (Williamson, 1979, p. 235). Institutions will lead actors to the optimum decision regarding lowest transaction costs. Institutions are given rules of the game that guide economic actors how to organize the economic activity. Economic agents in their turn follow profit maximization strategies. Agents will choose between the modes of governance based on transaction costs associated with each mode. Transaction costs are the costs associated with administering, evaluating, assessing, and scrutinizing the transaction in order to mitigate contractual hazards. Thus, in a given institutional environment the most efficient governance structure will prevail (Silva and Saes, 2007).

To sum up, institutions govern transactions. As economic exchange becomes more complex governance structures rely on institutions that govern the distribution of property rights, contract conclusion and enforcement to control transactions costs. In relation to economic development, to improve the status quo, institutions need to favor increased specialization in general. As North (1993) notes: “... the specific institutional constraints dictate the margins at which organizations operate and hence make intelligible the interplay between the rules of the game and the behavior of the actors. If organizations devote their efforts to unproductive activity, the institutional constraints have provided incentive structure for such activity. Third-world countries are poor because the institutional constraints define a set of payoffs to political/economic activity that do not encourage productive activity” (p.44).

Going beyond economic theory Levi-Faur (2012) defines at least four meanings of governance: as a structure (the system of rules); as a process (of steering and coordination); as a mechanism (procedures of decision making); and as a strategy (governance-in-action). To capture the multidimensional nature of governance Ansell and Torfing (2017) offer the definition of governance as “the interactive processes through which society and the economy are steered towards collectively negotiated objectives” (p.4). This definition captures the interactive and inclusive nature of governance as a process and emphasizes the involvement of non-state actors in the process of economic direction. The definition reflects that the knowledge of one actor is fragmented and limited to deal with complex issues faced by contemporary societies. Interaction is important as the way to exchange ideas,

competences and resources in pursuit of desirable and negotiated outcomes. In relation to economic theory and the role of the state, this definition is applied to reflect on the coordination between different modes of governance in the economic system. Nielsen (2017) uses the metaphor of *handshakes* to describe the interaction between market actors, governments and society. According to his view, on a vector of governance modes ranging from classical *invisible hand* to the *clenched fist* of central planning there is some rationale for *visible* and *invisible handshakes* as a way of steering. *Visible handshakes* relate to formal coordination through direct interaction between market actors and government: indicative planning, delegation of authority, selective employment policy, etc. *Invisible handshakes* are of an informal nature, highly relational and rely on social interaction, mental models and a system of beliefs of actors: trust, reputation, etc. (Nielsen, 2017, pp. 341- 349).

In relation to public administration *good governance* is the term used to define the effective implementation of state policy (Fukuyama, 2016). Indeed, fostering sustained growth requires specific *growth-enhancing* governance capabilities to be in place to mitigate policy failure. Developing governance capabilities that allow the administration of public policies to be effective is crucial to minimize the destructive consequences of policies. So, growth outcomes hinge both on types of policies that are in use to address market failure and governance capabilities that allow curtailing the odds of state failure. Given the limitations of institutions in developing countries, it is highly advisable to facilitate sequential and incremental governance improvements aimed at a provision of limited strategies to overcome specific development constraints at a given stage of development (Khan, 2011). State interventions to address market failure result in a poor outcome due to insufficient governance capabilities. In order to support the functioning of markets, governance structures need to rely on: (1) state capacity to implement policies and enforce law and regulations (i.e. *strong state*); (2) limits on the state's strength (prevention of predatory behavior); (3) state capacity building; and (4) establishment of key economic institutions (Ahrens, 2011, p. 10-14).

The provision of effective economic governance is crucial for mineral exporters since the bulk of resource revenues accrue to the government directly and how this money is spent is a critical question. Vital policy decisions to be taken include how much revenue to save, how much to invest domestically, and what is the right balance between

public and private investments. The first set of decisions requires the adoption of an efficient fiscal rule to smooth out public spending and exchange rate fluctuations to avoid *boom-bust* cycles. The second set of decisions depends upon the initial available stock of capital, existing investment climate, administrative capacity of the government, and the magnitude of savings from resource revenues. If the absorptive capacity of the economy is sufficient and the social and economic rate of return on domestic investments is high, the natural decision is to invest resource revenues domestically. If these conditions are not in place, revenue spending might result in *white elephant* projects and unproductive domestic demand. The third set of decisions takes into consideration the complementarity between public and private investments. An effective investment policy needs to control the funds available to private agents so that their investments match the public ones. Thus, institutions to provide smoothed savings, effective resource allocation, scrutiny of the government, accountability, and a wide range of checks and balances, are of high importance. These institutions help to control public spending and ensure that periods of commodity booms are not wasted. For inter-temporal adherence to good policies, fiscal rules should be embedded in constitutions and other high order statutes (Collier and Goderis, 2008).

Summary

The ideas discussed in this chapter allow the following conclusions to be made. The resource curse manifests itself when the country is not capable of managing its resource wealth in an effective way. There is no doubt that natural wealth boosts the potential of future revenue flows but whether these will be translated into economic development depends on effective and efficient allocation of resource rents. Inevitably there will be rents-erosion to specific agents while redistributing them to a wider number of new entrants. Hence, there should be a system in place to govern the process of rents distribution. This chapter showed that such system builds upon economic and political institutions in place. In particular, to avoid the Dutch disease there is a need to distribute rents to manufacturing industries or prevent the inflow of resource rents in the economy not to

boost the non-tradables. In this respect, the development process in resource rich economies does not differ from other countries and rests on strong institutions that allow for fair distribution of rents.

The economic channel through which the resource curse arrives is when the economy fails to develop new industries other than extractive. Thus, resource rich economies should be aimed at industrial transformation. To induce structural change the state could have a helping hand in the presence of market and coordination failures as well as to overcome path-dependency set by rigid institutions. This means that the state itself needs to be of developmental mindset. Still, state capacity is constrained by the quality of bureaucracy and general readiness of political leaders to distribute rents through economic and political reforms. Although the argument for state intervention is a strong one, the success of it depends on the institutions surrounding the processes – social, economic and political. Despite its importance, the state is not the dominating actor to mandate economic development. Many other stakeholders are involved and guided by local and international governance arrangements. Since one single actor does not dominate the steering of the economy, strong governance practices need to be in place and support greater transparency, accountability and balance and checks. The interaction through effective governance mechanisms between the state, private agents and society acts as the driving factor of the catching-up process. This opens the way for freedom of voice and a move toward participatory forms of governance in order to create conditions for distribution of rents based on fair and impersonal competition. Steering this entire system requires transition to open access social order to allow the emergence of new enterprises and new industries (set *creative destruction* in motion).

Given the high level of complementarity among economic and political institutions, economic development in resource rich developing countries is conditional on political will to foster institutions for such development. Hence, there is the interplay of policies, governance practices and institutions in leading the process of development. Acting as a holistic framework these could deliver the demanded outcome by shaping each other: institutions affecting policies that in turn address market failures and require change in governance modes. These three variables form a conceptual framework of the analysis and its application is discussed in the next chapter.

Chapter 4. Empirical research agenda and Methodology

Political leadership in Kazakhstan since the early days of independence has taken the road to attracting FDI in the resource extractive industries as a way to achieve economic growth and political stability associated with such growth. This was an organic decision for the country experiencing a collapse of the political and economic systems after the fall of the Soviet Union but had vast natural resources. Though there was a great uncertainty on how to move forward, the political leadership was certain about one thing – FDI is needed to bring the wealth under the ground to the surface. The greatest potential existed in the Caspian Sea area – historically an oil-producing region with a number of big oilfields discovered during the time of the Soviet Union.

Expectations from resource extraction included not only an expansion of crude oil and natural gas exports, but also leveraging resource extraction to bring in new technologies, expertise, and know-how into the country; create employment; improve infrastructure; and overall create a positive image of a country capable of hosting large foreign financial capital. It was perceived that the oilfield operations in the Caspian Sea would create a huge market for goods and services and serve as a basis for the development of local industries.

The collapse of the Soviet Union, the subsequent transition crisis, non-existing domestic savings and the need to deliver economic growth called for opening up the economy in the era of globalization. Lead international oil companies were invited to offer their technical expertise and funding to develop the oilfields. Lack of experience and expertise in negotiating international contracts, the urgency of capital investments, and weak bargaining power have resulted that contracts for development of the largest oilfields were dictated by the preferences of the lead oil firms. However, despite the criticism associated with the rights provided to the foreign investors in these agreements, securing the rights of international investors became one of the building blocks of economic policy of modern Kazakhstan and has brought not only its fruits beyond expectations (production of oil and gas has more than tripled) but also challenges associated with the resource-led growth.

Today Kazakhstan is one of the top 20 oil exporters in the world. High economic growth rate allowed increasing the standards of living and lifting people out of poverty but when oil prices plunged there was a hard landing for the economy. With low oil prices, economic diversification reemerged as a top priority in the development agenda. Moreover, it is perceived as the only path to sustained economic growth. There is a dramatic shift toward increased state activism to build local manufacturing industries. A number of strategic documents (that are mentioned in this and later chapters) have been adopted to announce the move toward the new development vision and new economic model based on qualitative rather than quantitative growth. Like in many developing resource-rich economies, turning away from oil dependence is a critical policy priority associated with active state interventions to foster industrialization in Kazakhstan (World Bank, 2013, 2018).

Based on the literature review and the main concepts presented in preceding chapters, this chapter builds the conceptual framework by refining the research question, discusses data and methodology.

4.1. Research Question further refined

Kazakhstan welcomed foreign investments with its commitment to a liberalized and market-oriented economy. As the country embarked on a policy of openness after independence, the economy became highly integrated in capital and trade flows compared to other economies in the region. FDI flowed mainly into the hydrocarbon industry. Like most other mineral economies around the world, Kazakhstan enjoyed almost a decade of high oil prices and experienced spectacular growth rates during the 2000s. Until recently, it was known as Central Asia's most rapidly growing economy with average growth rates of 9 percent per year over the period of 2000-2007. Per capita GDP increased almost 10 times since independence – from around 1,500 US dollars in 1991 to almost 14,000 US dollars in 2013²⁶ indicating high-middle income status of the country.

²⁶ <https://stat.gov.kz>, accessed on 3 July 2018

However, the commodities boom deepened the country's specialization in resource exports with crude oil representing around 70 percent of its exports. For the last 15 years the share of oil exports in total exports has always been above 50 percent. The oil and gas industry plays a major role in Kazakhstan's economy. Foreign operators dominate the oil industry. According to the Ministry of Energy eight major oil companies are producing almost 90 percent of oil and gas condensate in the country. Most of the output produced in the oil industry is exported as crude oil. The share of exported crude oil and gas condensate has never been below 80 percent of total output in recent years²⁷. As oil prices collapsed in 2014, the economy crashed from boom to bust and GDP growth fell to 1 percent in 2016 and still struggles to catch up with growth rates averaging 6.5 percent from 2010 to 2013.

Economic diversification has been on the policy agenda since the early years of independence but progress in this area remains weak. Since 1997 a number of strategic programs have been adopted with the goal to develop the national economy. One of the first national programs of structural transformation of the economic system was Strategy 2030. As the country was going through the hard years of economic transition, the First President Nazarbayev announced a new ultimate goal for development in his annual address in October 1997 named "Kazakhstan 2030: Prosperity, Security and Ever growing Welfare of all citizens of Kazakhstan" that was abbreviated to Strategy 2030. Strategy 2030 establishes pathways in achieving the universal goal - becoming a prosperous and sustainable sovereign state with a dynamically developing economy. The document outlines seven priority areas for action to achieve its development goal: (1) national security; (2) political stability and consolidation of society; (3) economic growth based on an open market economy with a high level of foreign investments and internal savings; (4) health, education and well-being of citizens; (5) mineral resources; (6) infrastructure, mainly transport and logistics; and (7) professional state. The mineral wealth is seen as a major source of growth. The goal in management of the resource wealth is to "...effectively leverage the energy resources of Kazakhstan by a rapid increase in extraction and export of oil and gas with the aim of increasing the revenues to enhance stable economic

²⁷ <https://www.gov.kz/memleket/entities/energo?lang=kk>, accessed on 13 March 2019

growth and improve the living standards of the people” (Nazarbayev, 1997). Already at that time there was an understanding of the importance in avoiding the fate of a “mono-resource” economy and the promotion of manufacturing industries at an even faster pace is announced as the industrial policy goal (e.g. light and food industries, infrastructure, oil and gas processing, chemicals and petrochemicals, machinery and mechanical engineering, the development of high-tech industries, services, and tourism). Diversification of the production structure was expected to bring sustained growth. At the same time, it was clear that the weak competitiveness of local industries and the small domestic market under the policy of openness brought the country to an export-led growth strategy. The political leadership indicated that slipping into a raw-material structure of production was a major developmental risk. There was a clear understanding that the country possesses a regressive production structure and the ongoing decline in production being experienced was the outcome that cannot be discounted.

Strategy 2030 indicated the move to a free market-oriented economy in order to attract investors and create new industries. Though the principle of the free market had been in place it was perceived that it could not stimulate the introduction of new industries. It was believed that market forces are strong, but are not strong enough to deliver structural transformation of the production structure and also address such issues as the creation of new employment and the elimination of poverty. In this respect, an active industrial policy is seen as a part of the political agenda of the state and a way to deliver social benefits to citizens. Expectations from an active industrial policy, especially in labor-intensive industries (i.e. agriculture, forestry and timber processing, food industries, tourism, housing and infrastructure) was not only about the structural issues of the economy, but also about employment and poverty that were pressing issues during the transition years. It was believed that economic transformation is more important than political development, as strong economic structures are perceived as being more capable of supporting the achievement of the country’s development goal. This has given the rise to emergence of the famous principle – “economy first, then the politics” (Bohr et al., 2019).

In Strategy 2030 special attention is given to utilizing the vast energy resources – oil and gas – that the country possesses. The long-term strategy in this area hinges on the following building blocks: (1)

partnerships with international oil firms in order to attract new technologies and capital for further development of the oil and gas resources; (2) development of a pipeline network for exporting oil and gas resources; (3) becoming an energy exporter; (4) development of domestic energy infrastructure; and (5) wise use of oil revenues. Thus, the development of the oil and gas industry was at the center of economic policy from the yearly days of independence and the emphasis was on expanding oil exports and becoming an oil exporter.

Despite the strong emphasis on oil and gas industry expansion, the economic diversification agenda has been reflected in all strategic and policy documents. According to the system of state planning, Strategy 2030 is to be implemented in two stages and each stage is reflected in the relevant implementation document. The first stage was reflected in the Strategic Plan 2010. At that stage, the initial approaches to industrial and innovative development of Kazakhstan were first introduced in 2003 within the framework of the Strategy of Industrial and Innovative Development of the Republic of Kazakhstan for 2003-2015. However, it has been acknowledged that the Strategy has not reached its preset numerical indicators on industrial development for many reasons, one of them being the last financial crisis that substantially affected the economy in a negative way. The second stage is reflected in the Strategic Plan 2020 that outlines the development priorities after the financial crisis. To withstand the financial crisis and support economic recovery, the President in his speech in May 2009 at the General Assembly of the ruling party Nur-Otan announced the introduction of 5-year industrialization plans signifying a start to accelerated industrialization in Kazakhstan. The 5-year industrialization plans represent the core of modern vertical industrial policy in Kazakhstan. These plans cover almost all sectors of the economy, reflecting the growing state intervention to foster economic diversification with a focus on the promotion of manufacturing industries.

The First Industrialization Plan (2010-2014) was adopted in March 2010 to guide the process of accelerated industrialization. Adoption of The First Industrial-innovative Development Plan (1IIP) signified a return to active industrial policy under the framework of the state's planning system. The 1IIP introduced the selective promotion of large infrastructure projects to address import-substitution and export-promotion. Agriculture together with base metals and metallurgy sectors were identified as the main export-oriented sectors.

Construction (production of cement, sheet glass, and finishing products) were supposed to serve domestic demand. Oil refinery (production of kerosene and gasoline) together with chemicals (production of chlorine, caustic soda, sulfur acid, fertilizers, and washing agents) and pharmaceuticals were announced as import-substituting sectors. Thus, 1IIP introduced priority sectors and projects within these sectors were included in the so-called Industrialization Map. Implementation of 1IIP revealed many limitations, including coordination issues due to the wide dispersion of effort among an increased number of instruments and organizations involved. Monitoring of 1IIP was based on aggregate numerical indicators and did not measure its impact. The 1IIP failed to achieve its ambitious goals and only two out of six headline targets were achieved (OECD, 2017).

Meanwhile, back in 2012 political leadership announced that the development goal of Strategy 2030 had been successfully achieved and it was replaced by a new long-term vision Strategy 2050 aiming at becoming one of the top-30 advanced economies by 2050. Fulfillment of this vision is based on several pillars, including the accelerated industrialization and promotion of local manufacturing industries with the aim to expand non-resource exports. The preset target to monitor progress is clear - by 2040 the share of non-resource exports needs to at least triple while in 2018 crude oil comprised 70 percent of total exports. Deindustrialization is still seen as a potential risk for the development process and to mitigate this the leadership aims to foster domestic producers in the most competitive industries. It is believed that this will open the way for the country to find its place in the future as the world entered the Third Industrial Revolution. At the same time natural resources are given a special role in delivering economic growth and are still seen as a major economic advantage that the country possesses.

Industrial policy continued under Strategy 2050. The Second Plan of Industrial-innovative Development (2IIP) for 2015-2019 was adopted in August 2014 as the logical continuation of 1IIP. In general, 14 priority sectors from 6 industries are at the focus and can be divided into the following groups: expansion of forward and backward linkages of extractive industries – oil refinery, petrochemicals, machinery for oil industry; export-oriented industries – agriculture, tourism, light industries; and development of industries of the future – space, ICT, bio-technology, and renewable energy. Industrial development is

organized in clusters with the oil cluster being of the highest priority. Selective financial support to local industries is distributed through state holding companies - Samruk-Kazyna and Baiterek.

Strategy 2050 explicitly states that global technological innovations will change the structure of demand for natural resources. To deal with this threat, Strategy 2050 aims to use the opportunity to accelerate the output of raw materials for export to international markets that potentially could be destabilized in the event of a new financial collapse. Rounds of new financial crises are expected to happen in the future and the best risk management strategy, before the main resource importers can greatly reduce their purchases of raw materials and prices fall sharply, is seen to pump and sell as much oil as possible now. Thus, Strategy 2050 aims at maximizing the accumulation of natural resource rents that will help the country to survive possible future periods of global crises (Nazarbayev, 2012).

However, with continued low oil prices, the economy slowed to a growth rate of 1.2 percent in 2015 and 1 percent in 2016, and the efforts to diversify the economy became the highest priority. The scenario offered by Strategy 2050 on exporting as much oil as possible given the high oil prices became unrealistic scenario and the state's growth aspirations underwent substantial correction and are reflected in the new Strategic Plan 2025 adopted in 2018.

Strategic plan 2025 defines three major scenarios of global development and its potential impact on Kazakhstan and is more realistic about oil prices staying low. The first scenario considers global technological advancement that leads to substantial improvements in productivity. Under this scenario Kazakhstan needs to reach annual growth of 5 percent in order to achieve its national vision to become one of the 30 advanced economies by 2050. The second scenario assumes a deeper level of globalization and international integration that will support the global economy. Under this condition, Kazakhstan has to accommodate a growth rate of 5.4 percent annually. The third scenario considers a disintegrated world that lives under pressure of widespread protectionist policies that will harm the global economy. Within this scenario Kazakhstan is expected to grow by 4 percent annually. The Strategic Plan 2025 considers the first scenario as the most likely and plans for the introduction of seven structural reforms and seven priority policy areas. One of structural reforms and policy

areas is the building of a highly competitive export economy²⁸. This assumes maintaining the competitive advantage in base industries – oil production, metals – by the use of new technologies to increase the value added produced locally (i.e. oil refining, petrochemicals).

Adoption of the Strategic Plan 2025 signifies the shift in perception of the entire growth model of the country with more realistic reference to new external conditions – low oil prices. As low oil prices become a new normal for the foreseeable future, the government is putting its efforts into promoting economic diversification. In the post-crisis period as oil prices dropped, diversification became the most urgent economic concern, though the agenda is not new. A dramatic policy shift and increased state intervention emerged after the financial crisis. With the new ambitious development goal in place, the state is active in pushing structural transformation to achieve that goal. The diversification efforts are evolving around the development of manufacturing industries. The new growth model of Strategic Plan 2025 is aimed at the creation of an export-oriented, high value-added economy that is integrated into GVCs. Commitment to deliver on this national vision requires the hard task of a deep structural transformation to diversify the economy away from oil. Economic diversification is not simply a policy agenda but more importantly – a matter of survival.

Delivering structural transformation in mineral economies is a challenging task and the logical question is: how capable is the country of achieving this goal? Though this question seems logical it needs more attention and focus. To narrow down the analysis process it is beneficial to explore how the development of local manufacturing industries is happening and what actually hinders their expansion. In this respect it is instrumental to discover the development patterns of one specific manufacturing industry. Based on the discussion in previous chapters it makes sense to study the evolution of backward

²⁸ The seven structural reforms are: human development, technology, business, the rule of law, the development of regions, society and the public sector. The seven priority policies are: stimulating macroeconomic policies; policies aimed at development of economic sectors; formation of a developed financial market; active attraction of private investment; ensuring a high quality of life; policies in the field of green economy and environmental protection; and a proactive foreign economic policy.

linkages as these are seen as the most direct potential spillover from resource extraction. The theoretical framework of the research implies that fostering strong backward linkages is a promising strategy to promote development in resource-abundant economies. This research is focused on the examination of the development process of competitive local suppliers for oil and gas equipment and machinery. It has been already discussed that the development of the major oilfields requires a wide number of industrial inputs. Guided by the linkage theory, it is expected that *one thing will lead to another*: the expansion of oil production should lead to increased demand for industrial inputs and support the emergence of competitive local producers in supply industries. Whenever this dynamic is not in place it becomes important to understand why, and this will provide the knowledge on the stumbling blocks in the development process.

The focus of this study is to examine the context and the process of development of the local suppliers of oil and gas equipment and machinery. Kazakhstan's major oilfields are still under development by international oil operators. The international oil operators are a consortia of leading MNCs and their role in promoting the development of backward linkages is crucial. As argued previously, the development of backward linkages is supported by the desire of international operators to outsource non-core activities to the proximate low-cost suppliers. Given the complexity of relationships that exist within the supply chain of the lead oil firms, when local suppliers start to supply equipment to international oil operators it is seen as an emergence of a new competitive advantage, not only at the level of the firm but also at industry level. Thus, there are underlying factors that made international oil operators change their sourcing preferences toward local suppliers. For the host country, this results in the localization of value added and entrance into the GVCs of oil and gas production. This research is focused on examining the evolution of backward linkages between the international oil operators and independent local suppliers. The unit of analysis is the transaction, i.e. the exchange relationship between international oil operators and local firms – producers of oil and gas machinery and equipment. The refined research question is:

“How development of competitive local suppliers of oil and gas equipment and machinery for international oil operators is happening in Kazakhstan?”

To approach this question in greater detail the following sub-questions will guide the process of analysis:

How and what kinds of institutions are controlling the process?

How does the state shape the institutional context to foster local suppliers?

How and what policies are implemented and by whom?

What organizational and governance arrangements are in place?

How much room is there for collaboration between stakeholders?

The intuition behind the refined research question and sub-questions is as follows. The refined research question is based on the view that the oil industry is a source of demand for many inputs, especially capital and technology, and oil equipment and machinery represents a good case for exploration. The greater is the share of domestic direct and intermediate inputs, the more positive is the impact on the rest of the economy. As predicted by the linkage theory the greater number of firms linking to outlier industry – oil extraction – will generate positive synergy and accumulate at the macro-level to economic growth. However, the emergence of backward linkages is not straightforward: the existence of extractive industries does not by default lead to the increased local supply of inputs. Wide technological gap, lack of skilled labor and capital, non-competitive cost profile, and other factors hide opportunities from local firms. Lead oil firms, in their turn, might not be willing to procure from new local suppliers for many reasons – uncertainty about performance, quality, operational efficiency, etc. Prospects for backward linkages are ambiguous under these conditions and the dynamic mechanism of *one thing leads to another* might face strong obstructions.

Based on the literature review, we know that lead oil firms have stable supply chains, i.e. it is very hard for newcomers to enter for many reasons – economic, safety, governance, etc. For oil operator to decide to switch to a local supplier it needs to make economic sense. Supportive governance arrangements and most importantly a desire to switch to local sourcing are also required. Some oil firms might exhibit a developmental attitude via the supportive procurement policies. The regulatory policies of the state could create conditions for local sourcing. In general, governance arrangements at corporate, national

and international level can build incentives to share benefits with host economies, including local sourcing.

Fostering relationships between international oil operators and domestic firms assumes bringing their competitiveness to the level of global value chains. There should be an enabling environment in place to perform on this hard task. This is especially important when existing absorptive capacity is weak. Such an enabling environment consists of supportive institutions, strong governance practices and consistent policies to foster development of local firms. Great potential for collaboration between the state and private sector exists in this area of backward linkages promotion.

The aim of the research is to examine whether such an enabling environment is in place and how it affects the development of backward linkages to capture the potential for further economic diversification from oil extraction in Kazakhstan. Figure 4 describes the analytical flow of the research process:

Figure 4: Visual map of the research

The operationalization of this diagram is as follows. Strong backward linkages in the oil industry arrive as outcome of supportive institutional setting, governance and policies. These are the three drivers of local competitiveness that brings inclusive economic growth in resource-abundant economies. For operationalization purposes, the definition of each variable is provided together with a description of the nature of the relationship between them.

This research employs North's (1991) definition of institutions as informal (taboos, codes of conduct, traditions) and formal (laws, constitutions) rules. These rules constitute the belief systems of individuals and guide their actions. The function of institutions is to create order and reduce uncertainty. Combined with economic common sense, institutions shape the incentive structures of agents and direct economic activity. Institutions, especially, informal ones, are very sticky and not easy to change and even when change happens it is mostly incremental and path-dependent. Still, institutional change is possible. Williamson (2000) defines four levels of institutions depending on their propensity to change: (1) very rigid ones, like culture, ethical norms, that may change over centuries; (2) high level formal rules, like constitutions, property rights, that may change over centuries or decades; (3) institutions that govern everyday practice that may change over years; and (4) price adjustments that are happening constantly. Thus, some institutions are more flexible than others and could be changed by means of collective action or rules of enforcement. Entrepreneurs are seen as the main agents of change, however, private agents could face a collective action dilemma or exhibit a free-riding attitude that reduces their ability to organize for collective action. The state might intervene as it has the authority to create and enforce rules. The role of the state could range from setting a level-playing field for economic agents (general property rights, competition, rule of law) as well as selectively intervening to address coordination and market failures.

In resource rich economies the main tool for delivering structural change is industrial policy that is both vertical and horizontal. By industrial policy, this research follows the broad definition provided by Stiglitz (2016) as any policy that affects the sectorial composition of the economy and that the success of it has to be measured from the systematic angle as the benefits for the wider economy are created outside the particular project or sector. By using policy, the state supplies new institutions and creates organizations to match the reference institutional framework. The difference between institutions and organizations is that the former are rules while the latter are players. As North (1996) puts it: "In broad outline the process of economic change is as follows. Organizations and their entrepreneurs are the actors; they will introduce new institutions or technology when they perceive that they can improve their competitive

position by such innovation. Their perceptions are a function of the belief systems they possess." (p. 2)

The success of policies hinges on governance arrangements that are in place. Under governance, we will understand the definition provided by Ansell and Torfing (2017) as "interactive processes through which society and the economy are steered towards collectively negotiated objectives" (p.4). This definition reflects the interactive and inclusive nature of the process of steering the economy that involves various stakeholders. At the same time, governance is dependent on the institutional matrix that is in place – rules and systems of the constructs of the agents. Thus, to supply institutions, the state needs to be capable of enforcing the rules. In order to supply and enhance market institutions, the state needs first-of-all to provide government institutions: strong bureaucracy, openness, accountability, transparency, and credibility. At the same time, private actors are becoming more inclusive to government networks. This is the move from governing (leading) to governance (interaction) (Rodrik, 2004, Aoki, 1997, Wade, 2004). In this respect, the state needs to be highly embedded in the society, but at the same time strong enough to withstand vested interests and control its own potential for predatory behavior (Evans. 1995).

Though private institutions are important, Ogilvie and Carus (2014) provide historical evidence showing that public-order institutions cannot be substituted by private-order ones and are crucial for the functioning of the market. Overall, the authors conclude that there is no single institution that matters the most, each institution is a part of the wider institutional system and cannot be considered in isolation as it acts in combination with other ones. Examining how specific components interact within the wider system and how different components of the system facilitate each other is central to understanding the role of institutions in economic growth. (p. 407). This implies that countries cannot be better off by introducing ready-made solutions while ignoring the general institutional context. Transformation in one part of the system requires changes in other parts of the system. When this happens, a complex and multi-dimensional mechanism of institutional change is set in motion.

This research relies on the theoretical framework already discussed in previous chapters. Hirschman's linkage theory is the central theoretical idea that guides the research and it is combined with the views of institutional economics scholars to analyze the process and

the context in which development of backward linkages is happening in Kazakhstan. The main aim of the current study is to take a holistic approach to the analysis by integrating the policies, governance and institutions in to one analytical framework as described above. The study will identify what policy tool-box is employed, what governance mechanisms exist, and what institutions support or constrain the promotion of backward linkages at the firm, industry and country level. Such an assessment offers a better understanding of the capacity constraints that exist in the entire development framework of industrial transformation in Kazakhstan. The data collected during the field research will enlighten the industrial strategy of Kazakhstan and the research hopes to add to the existing knowledge on the economic diversification process in mineral economies.

4.2. Methodology and Data

Guided by the linkage theory this research examines an enabling environment as the inducement mechanism to the emergence of competitive local suppliers. Understanding of the inducement mechanism grounds on the analysis of what guides the allocation of resources, where and through what channels human energy is directed overall, i.e. how pressing issues are solved, what is the process of searching solutions for bottlenecks, and how development constraints are perceived and addressed. This type of knowledge is highly intuitive and requires the explicit exploration of the context in which the phenomenon is placed, as well as the motivations, opinions, life experiences and beliefs that guide economic agents and human beings. Thus, a qualitative research method is employed to address the exploratory nature of the study. With this qualitative approach the researcher seeks to explain how a phenomenon under examination operates in a given context.

This research is designed as a case study. As suggested by Yin (2009) articulation of the research question serves as a hint for the choice of a research design. With “how” questions the research is aimed at explaining some contemporary circumstances or seeks to undertake an extensive and in-depth description of social phenomenon and “how” as well as “why” questions are best approached with case studies. One

can argue that an alternative research question for this study could be articulated as: “What hinders development of competitive local suppliers?” Such a formulation of the research question is advantageous to track certain outcomes or describe the prevalence of specific factors and “what” questions are best suited for survey or archival methods. In their turn, “how” and “why” questions are tracing processes over time. Case studies are best to address “how” and “why” questions if the research is aimed at studying a contemporary process rather than historical (completed) past events. In examining contemporary processes, case studies rely on the direct observation of the events and interviews with people directly engaged in the process. Thus, the variety of evidence for a case study comes from documents, direct observations and interviews. At the same time, when conducting a case study, the researcher has little control over the behavior of the people engaged in the study and this differentiates it from experiments. Based on these features Yin (2009) provides a twofold definition of a case study. In the first part, a case study is an empirical method that aims to understand a real-life phenomenon in-depth within its real-world context, especially when the boundaries between the phenomenon and its context are blurred. This definition puts a distinct emphasis on the real-world case that is inseparable from its context – such scope is not available to experiments, surveys or historical studies. The second part of Yin’s definition refers to features of a case study: (1) it deals with a technically distinctive situation in which there will be many more variables than data points; (2) it relies on multiple sources of evidence, with data to converge in a triangulation fashion; and (3) it benefits from prior development of the theoretical propositions to guide data collection and analysis (p. 18). These features contribute to the reliability of the case study as a research method. Thus, a case study is the appropriate research method to examine the process of the development of competitive local suppliers of oil and gas machinery and equipment in Kazakhstan.

Baxter and Jack (2008) offer workable strategies to achieve the rigor and trustworthiness while conducting case study research. The key elements of enhancing the quality of case study research and allowing readers to assess the validity and credibility of the work are as follows: (1) the research question is clearly written and substantiated, and any research issues are provided; (2) the case study design is appropriate for the research question; (3) purposeful sampling methods have been applied and are appropriate to a case study; (4)

data are managed and collected in a systematic way; and (5) data are correctly analyzed (p.556). The authors add further that triangulation is among various strategies to promote data credibility and ensures that the phenomenon is viewed and explored from multiple perspectives. They conclude that a case study is "... an excellent opportunity to gain tremendous insight into a case. It enables the researcher to gather data from a variety of sources and to converge the data to illuminate the case." (p. 556)

It is important to note that generalizability is one important criterion to assess the quality of the study. In qualitative research, generalizability becomes a complex issue as these are contextualized studies aimed at the intensive examination of a particular case(s). Criticism of generalizability of qualitative studies stems from the idea that their findings are always embedded within the context and thus extrapolation is not fully justified. The counterargument to this viewpoint is that rich, highly-detailed and insightful qualitative studies are capable of capturing higher-level concepts and theories independent of the setting. Given the growing importance of evidence-based research, ensuring generalizability of qualitative research is gaining significance, especially when it comes to its capacity to shape the opinion of decision-makers and its applicability in practice. Various strategies are available to increase the scope for extrapolation of research findings – thick description, systematic reviews, planned replication, sampling strategies and others (Polit and Beck, 2010). Flyvbjerg (2006) by contradicting views on the limited generalizability of case studies concludes that it is still a necessary and sufficient method in social research and is no way inferior to other research methods. The author claims that concrete, practical (context-dependent) knowledge created with a case study is more valuable than predictive theories and universals (context-independent knowledge). He argues that one can generalize on the basis of an individual case, while generalizability per se as a way to accumulate knowledge is largely overestimated. In this regard, even purely descriptive, phenomenological case study still adds value to the collective process of knowledge accumulation in a specific field or in a society. In addition, Thomas (2011) argues that a case study offers something more distinctive to scientific inquiry than generalized knowledge, i.e. exemplary knowledge. In producing exemplary knowledge a case study offers a validation through understanding emerging from *phronesis* – a type of knowledge that occurs in practicing, or an insider's knowledge

that exists in every person (researcher, reader). The exemplary knowledge is received and understood in one context but interpreted in one's own experience – the phronesis. In this respect, a case study “... offers an example from which one's experience, one's phronesis, enables one to gather insight or understand a problem” (p.11). Though there are some limitations to generalizability, this research is aimed at the creation of exemplary knowledge and to contribute to knowledge about development patterns of mineral economies.

According to Marshall and Rossman (2006) there are four main methods for gathering the information for qualitative research: (1) direct participation in the setting; (2) direct observation; (3) in-depth interviews; and (4) examination of documents and materials. The use of observations is to “... discover complex interactions in natural social settings” (p.99). Combined with interviews, observations allow understanding the phenomenon under study in greater detail. The interview is defined as “a conversation with a purpose” (p.101). In-depth interviews are seen as a main tool for data collection that is combined with other data sources for triangulation purposes. Interviews allow understanding the phenomenon “from the inside” and obtain theories about perceived reality that participants are asked to explain. It is assumed that the subjective views of participants reflect their experience of dealing with the phenomenon under study. Hence, theories that participants have formed in their minds are an objective knowledge that is not right or wrong but a reflection of their perceptions or theories about the situation. For the researcher such views of participants are objective source knowledge.

To address the research questions above, a qualitative method is employed that comprises a literature review and theoretical framework; desk review of relevant policy documents, secondary data and available statistics; and primary data based exclusively on in-depth interviews with experts and observations obtained during the field research. The field research took place in Astana²⁹ and Almaty. The observations were obtained by participating in three major events: the forum on local content in Astana organized by one of the international operators and dedicated to its future expansion project; an oil and gas machinery industry forum in Astana – a specialized 2-day event for the machinery industry; and the oil and gas exhibition in Almaty – KIOGE –

²⁹ The capital of Kazakhstan was renamed from Astana to Nur-Sultan, after the former long-term President resigned in 2019, for this research we will retain Astana.

a high level 3-day event that has been conducted annually for the last 26 years. Participation in these events was very informative, especially when it comes to interactive sessions when questions were collected from the audience – mostly local producers and suppliers – to discuss existing constraints faced by the industry and other operational issues. Observations included capturing the existing practice of interaction between stakeholders – lead oil firms, government, and local producers - and a better understanding of problems in the industry. There are no direct observations on tender processes. However, during the forums extensive information has been collected on tender procedures and requirements during special workshops or seminars organized by international operators.

For the in-depth interviews, the researcher constructed the interview guide to collect the primary data. The interview guide has been piloted with some industry experts and subsequently refined with alterations, until it was finalized for the formal interviews (see Appendix 1). The interviews took place during the above mentioned events as well as requested through phone or email contacts for meetings at offices. The interviews are unstructured with the questions designed as open-ended to allow the researcher to have open conversation with interviewees that was unhindered by a more structured questionnaire. The researcher aimed to structure the questions so to cover the multi-dimensional nature of building relationships between local suppliers and international operators. The question of trust is important as the oil industry overall is closed and questions related to procurement procedures are completely confidential. To ensure this confidentiality and build the trust, in the introduction to the interview the researcher explained to each participant the research aims, and how the interview data will be used and presented in the study. It was specifically stated in the form of consent signed by the researcher and interviewee that he/she will not be recognized in the study, and all what he/she would say will be anonymously presented in the study. Due to this, only a serial number of the interview transcript is provided, there are no names. All interviews are recorded and the relevant audio file is then transcribed and assigned a serial number. Interviews are collected until the saturation point is reached, i.e. when no significantly new information appears in the interviews.

Overall, there are 34 transcribed interviews (see Appendix 2 for interview details). A significant amount of time has been spent in

transcribing the interviews. The average time of one interview was around 53 minutes. For identification purposes the initial transcript includes the name of the participant, the date and interview duration but these are not provided in references, only the transcript number. Almost all interviews took place in the Russian language. To avoid adding any emphasis or modifying the data during the translation to English, the researcher has translated each segment that is referenced in the study. No full transcripts are translated from Russian. So, each data fragment used in the study is translated the way it appears in the interview.

The sampling was aimed at covering as a wide range of stakeholders as possible. To capture the industry development from different perspectives, all stakeholders are grouped in four categories: (1) international oil operators, (2) local producers, (3) government officials, and (4) industry associations and experts. There are three international oil operators working in the country, however, representatives of only two of them agreed to participate in the study, while representatives of the third one have never replied to requests for interviews. Representatives of two pilot agencies (PSA Authority and NADLoc), the Ministry of Industry and Infrastructure Development and the Ministry of Energy, represent the state profile. In total 9 interviews are conducted with local producers with various profiles – small-scale producers and bigger plants. Industry experts and representatives of major industry associations – KazEnergy, Union of Machinery Producers and the National Chamber on Entrepreneurship “Atameken” – are included as sources of expertise at the industry level.

As noted by Baxter and Jack (2008), the importance of effective data organization is extremely high for the research process. The use of a database is advantageous as it makes the raw data available for independent inspection; and improves reliability of the study by enabling the researcher to store, track and organize data sources. For the analysis of raw data from the in-depth interviews the MaxQDA software has been used. MaxQDA is a special software package that allows organizing and analyzing the qualitative data. By using MaxQDA the data is coded in a deductive way based on the theories and concepts presented in previous chapters. As described in Fereday and Muir-Cochrane (2006) deductive coding employs predetermined codes coming from the literature, theories, experience, etc., and applying the list of codes that the researcher has in mind to organize the data for subsequent interpretation. The list of codes came as a result of the

initial scanning of interview transcripts and is driven by the theoretical framework and literature review. Hence, there are three main categories of codes – policies, governance, and institutions. However, there are additional codes that emerged from the data that complemented the coding list. As a result of this process, a specific code label is assigned to the parts of text with the intention to indicate the meaningfulness of these parts. The list of assigned codes and codes statistics are provided in Appendix 3.

Although the research follows a holistic approach, there are some limitations that may affect the generalization of the findings. The focus of the research is on relationships between international operators and local suppliers to capture the process of internalizing externalities from FDI. The role of procurement policy of the national oil company and other quasi-state bodies is largely ignored as this is a highly confidential process and access is prohibited. The other limitation is that one can find the sample too small for generalizability. In addition, no interviews were held with shareholders of the oil operators or the original equipment manufacturers that engage local suppliers as sub-contractors. Next, only independent local suppliers were interviewed, as there are no entities in the sample that exist in the form of an affiliate or joint venture with international original equipment manufacturers. This approach is justified in addressing the development of relationships with local manufacturers and analyzing the constraints of that process. Overall, one can argue that the oil and gas machinery and equipment industry is too specific to assess the progress of backward linkages from FDI and there are other industries with greater benefits (e.g. construction, services, etc.). However, the emphasis of the research is on exploring the development process of a knowledge-intensive industry with high value-added that can contribute to economic diversification. Furthermore, the industrial and trade policy of FDI's home countries (i.e. US for Chevron) is outside the scope of this research. It may be the case that home countries of international oil firms and original equipment manufacturers are engaged in protectionist industrial policy. At the same time, we don't know the interaction between shareholders and international oil operators working in Kazakhstan and to what extent they are engaged in the industrial policy of home countries, i.e. to what extent Shell or Chevron are promoting their national industries in Kazakhstan. Still, despite these limitations the research is still valid and presents a valuable analysis of: the current economic situation as well as its

evolution since independence; insights of individuals from international oil operators, local producers, government officials, and industry associations and experts; and an assessment of the development of backward linkages and the fostering of economic diversification in Kazakhstan. Overall, the research provides substantial knowledge that has been missing to date.

In the next chapters, the findings of the research will be presented. First documents and descriptive statistics are examined to reflect on the general industrial policy to embed local suppliers in development framework patterns. The aim of the next chapter is to introduce the general policy context and observe how it has transformed and for what reasons. In the following chapters the focus is on empirical evidence to reflect on how development of backward linkages is happening. Findings are presented by narrative coming from the analysis of interviews. The concluding chapter will present interpretations of findings and provide key take-away messages from the research.

Chapter 5. Embedding local suppliers in the development process

Industrialization program in Kazakhstan is about deliberate promotion of priority sectors in manufacturing industries. Competitiveness is a guiding principle of industrial policy efforts. The industrial transformation of Kazakhstan is not happening in a silo as it is continually challenged by global competition. To achieve its ambitious vision – to become among the top-30 advanced economies by 2050 - as stated in Strategy 2050, Kazakhstan needs to win the tough battle on the creation of new competitive advantage in manufacturing industries, find a new niche in the international market and move away from its strong dependence on exports of resources. The fulfillment of these tasks is based on the large-scale policy intervention to cultivate strong and competitive domestic producers. Delivering higher level of development assumes in the case of Kazakhstan, that local producers of manufactured goods are embedded in the development process.

The development framework in Kazakhstan is dynamically evolving around legal, economic, organizational and other measures and is driven by the incentives of agents to achieve their objectives. The development framework is headed by the country's long-term development visionary documents - Strategy 2030 and Strategy 2050 (Nazarbayev, 1997, 2012). This vision is then being inserted through industrial policy in the network of relationships that exist between economic agents in the country. This Chapter aims to reflect on the evolution of the development framework from the point of view of fostering local producers. This is done along the following areas: (1) enforcing local sourcing in the oil industry; (2) promoting local suppliers through industrial policy; (3) providing access to financial resources; and (4) creating incentives for oil operators to engage with local suppliers. Such an approach allows for the holistic combination of all efforts undertaken in different areas of the development framework and exploring how mechanisms for the facilitation of local producers in specific areas jointly deliver on the overarching goal of the economic development.

To explore the enforcement of the local sourcing this Chapter first addresses the contractual arrangements that guide how oil rents are distributed within the oil extraction process, what is the government take, and what are the procurement regulations. The

contractual framework forms a legal basis for all extractive operations, including procurement. PSAs are discussed as major rules governing access to resource extraction at major oilfields. The change for economic nationalism in resource extraction and the reasons for such change are discussed in greater detail. In particular, the state took attempts to recover its weakened state capacity in relation to its rights to income share from the major oil projects – Kashagan and Karachaganak. Such attempts created strong opposition within the foreign investors, forcing President Nazarbayev to *promise* that PSAs will not be subject to any reconsideration unless all parties reach consensus in doing so. However, despite lengthy negotiations the state managed to revise PSAs to improve its economic position. Then the system of state planning is discussed to track the evolution of the agenda on local content development. However, local content policy is not a remedy *per se* and its effectiveness is constrained by existing local capacity. Increasing the local capacity is much wider task that assumes substantial improvements along crosscutting factors driving productivity – skills development, fostering innovation, better access to finance, etc. – but also requires the promotion of specific industries. This by and large is the task of industrial policy, both horizontal and vertical. Still, industrial policy is not the sole decisive factor; the international oil operators have their own incentives to work with local suppliers. All these aspects combined create the potential for embedding local producers in the development framework and drive the economic diversification process.

5.1. Contractual framework of resource extraction in Kazakhstan: the wind of resource nationalism

The decision to extract natural wealth is framed by a complex system of rules establishing the principles of contract awards, regulation of activities, and policies. In an attempt to provide guidance to countries in managing and governing the resource wealth, the World Bank published the Sourcebook for understanding extractive industries (The Sourcebook, 2017). The Sourcebook crystalizes the knowledge gathered from country experiences to create a practical knowledge source on the management of upstream oil, gas and mining activities

along the entire extractive industry value chain – from the award of rights for extraction to the expenditure of the revenues. The Sourcebook attaches enhanced significance to the establishment of the rule of law – the legal and contractual framework. Though logically considerations on natural wealth begin with deciding on whether to extract or not and getting a good deal, the legal framework is seen as a general starting point in the extractive industry value chain as it provides a legal base to attract investments to the host country and for investors to take decisions based on the security of their rights. Thus, the legal and contractual framework establishes the distribution of rents (who gets what) and enforces the rights of the parties involved in resource extraction.

As indicated in the Sourcebook, the instruments and principles of legal and contractual frameworks are widespread around the world, but the ways these are implemented differ depending on the country's context as they imprint the process of political bargaining of a specific country. In this respect, any changes to the existing framework are associated with costs coming from the competition and rent-seeking practices of the interest groups. The overall aim of the legal and contractual framework is to ensure that upstream operations proceed in an orderly fashion and to protect the public interest. The building blocks of a legal framework for extractive industries are the laws, contracts and implementing regulations. Though this framework often is sector-specific, it operates within the wider domestic legal system and is consistent with the host country's constitutional framework and international obligations. For petroleum, there are mainly three approaches to design the legislation: (1) comprehensive and detailed; (2) individually legislated contracts or agreements; and (3) a hybrid, combining less comprehensive legislation with detailed regulation at the level of contract or agreement. A comprehensive approach is typical for OECD countries (US, Canada, Australia, Norway) as they have extensive legislative experience. The second approach is mostly applied in developing countries with either no codes or codes that are too general. Individually legislated agreements are negotiable, but they have a force of law and create a stable and predictable framework for an investor. The hybrid approach is common in countries with sectors to develop. It takes the form of a relatively brief enabling law and leaves room at the level of the authorities to negotiate through secondary regulations and individual contracts. Apart from the formal aspects of contracts, other factors have been gaining importance in recent years.

There is a trend toward less discretion related to government power (2 and 3 above) to negotiate terms with investors and calling for greater standardization of terms and agreements (1 above). On the other hand, there is growing demand for the publication of contracts between governments and investors. Confidentiality of such contracts has weakened as an increasing number of them are available on various open resources (The Sourcebook, 2017).

The Sourcebook discusses the role of model contracts (standardization) in designing the legal and contractual framework. One of the arguments for using the model contracts in negotiations with investors is that the capacity of a host country's government could be weak when faced with an experienced and highly professional team of a foreign investor. In some cases it is justified to engage external assistance from international experts to develop terms and conditions as a way to avoid the risk of concluding a bad deal and to prevent corruption. Negotiation procedures are highly complex and lengthy. They normally evolve around sharing the economic rent between the host country and investor and putting conditions in place to ensure the significant economic, environmental and social impacts are realized (The Sourcebook, 2017).

For upstream oil and gas operations, the Sourcebook outlines three common forms of agreements between governments and investors: (1) licenses or concession agreements; (2) PSAs; and (3) risk-service agreements (RSAs). Under concessions, also referred to as a tax and royalty regime, the investor owns the rights of the produced resource, while the host country receives revenues in the form of royalty, income tax and any additional taxes. In PSAs, the investor does not receive the right of the produced resource but receives the rights only to a share of it that is stated in the PSA. In RSAs, the investor also does not have the rights to the produced resource and is remunerated for its services in accordance with the agreed formula established in the RSA. Though there are differences in contract forms, all three of them share some general provisions (The Sourcebook, 2017). Among these key contractual provisions that are common to all types of contracts, it is the provision of local goods and services that this research aims to focus.

The local content provision is common to most oil contracts and requires the local sourcing of goods and services, given that the price and quality are competitive. Within the contract's typical provisions related to local benefits, the investor is often required to: (1) promote

local sourcing (supply chain procurement); (2) hire local staff for certain tasks (local employment); and (3) promote capacity building and skills enhancement (training). Though the form and content of the contracts are readily available knowledge and is well established in various model contracts, the provisions related to local benefits is the area where the most adaptation is required with reference to specific country context. Over time as knowledge about the nature of links between extractive industries and the wider economy accumulates, the need to introduce relevant changes in laws and regulations emerges. If this is not addressed in a timely manner, the legitimacy and long-term credibility of the resource extraction regime in place will be reduced. The provisions on local benefits are the area where the modification of established approaches is justified as a way to better achieve development goals (The Sourcebook, 2017).

However, while some adaptation is possible, the specific feature of a legal framework for extractive industries is that it contains a stability clause. As the situation on commodity markets change the host country governments might introduce new laws or revise existing contracts to increase rents intake. In order to mitigate such political uncertainty, contracts are protected with a stability clause or with separate stability agreements. These are used to limit the consequences of a political response to changed market conditions or legislative actions due to other changed circumstances. Thus, the major beneficiary of the stability clause is the foreign investor. The core of such a stability clause is to ensure that investment terms will remain the same over the entire life of the contract, including fiscal stability. For example, PSAs have a fiscal stability clause and establish fiscal regimes that include: the state's share of production; taxes and royalties; and other fees. Under this fiscal regime, the investor has a right to recover eligible costs through the so called *cost oil* while the state provides the ceiling for the annual cost recovery. As described by a State agency interviewee: *"... in PSAs, signed in the late 90s, they all contain a stability regime. This applies to the introduction of new legislative initiatives, new forms of taxes, etc. All that was agreed upon in the PSA in 1997, and all legislation that was applicable in 1997 to these PSAs, has retained its force until today. With the passage of time innovations in the legislation, with the exception of the law on national security, could not affect the projects, they have immunity from all legal innovations. If tomorrow, as an example, the country adopts a law prescribing that all expansion projects or others should have 50 percent*

threshold in local content, and for misconduct there will be penalties, it will not work. This is beyond the legal framework of PSAs, they (investors) will not be guided by these (innovations)... Given the limited bargaining power of the state, at the time of signing PSAs it promised that in no way it will introduce new laws. ... The economics of these PSAs was calculated and investors agreed to the economic and legal environment that existed at that time. It is clear that 20 years after we can say: now you will pay the export custom duty, but they would have replied: then 20 years ago we would not have arrived if we knew that you are going to introduce the export custom duty, new taxes, or a new law. Therefore, the state in all these 20 years followed those agreements and investors recognize it, they respect it, and in those aspects where they foresee no negative effect on costs, to implementation plans of the project, or possible delays, they basically concur. Forms of cooperation with us are emerging, including in the part on the local benefit” (Interview transcript 15).

In the case of Kazakhstan, the first international contracts for the development of oilfields were mostly based on international experience rather than local legislation. FDIs in the oil and gas industry were regulated by the general norms on foreign investment. The main legislative act on exploration and production of oil and gas resources was the Code on subsoil and processing of mineral resources adopted on May 30, 1992. Extended sector specific legislation came into existence in the mid-1990s. The main newly adopted sectoral norms include: the Decree of the President of the Republic of Kazakhstan³⁰ of January 27, 1996 “On Subsoil and Subsoil Use”, the Decree of the President of the Republic of Kazakhstan of June 28, 1995 “On Oil” and the Law of the Republic of Kazakhstan “On Foreign Investments”

The major international contracts were signed in the absence of comprehensive oil and gas industry regulations. According to these contracts, consortiums operate the major oilfields and the long-term contracts regulate the relationships with these operators at Kashagan and Karachaganak. The current management system assumes that shareholders (i.e. lead oil firms) delegate to a specially created entity – the operator (KPO, NCOC) – the functions of operational management. In turn, the contracts and PSAs signed between the Republic of Kazakhstan and each international consortium assign the rights and obligations of both parties within each project. Within these

³⁰ Decrees of the President of Kazakhstan have the force of laws and are high-order rules.

agreements, each participant is independently responsible for marketing its own share of production, and reporting and sharing the production with the Republic. In the case of Tengiz, relationships are governed by the agreement on the Tengizchevroil (TCO) joint venture. All these international contracts were signed in accordance with international law and the agreements reached at the time they were negotiated. For the political leadership, these agreements were not only of economic importance but also of political importance, as they allowed for leveraging of the country's foreign policy and balancing political interests within the Caspian region. The way these agreements are enforced affects the political and international image of the country and its attitude toward international capital given the size of the oilfields. Each side of the contract treats its counterpart with respect as contracts are 40-years long and of high importance for each of the stakeholders: if for lead oil firms the objective is profit maximization, for the Kazakh state it is the path forward to build a new economy and a route to development.

The contracts signed for the development of these three major oilfields became a major source of practical knowledge and have created an understanding on how such contracts should be treated in the future. Based on this experience, Strategy 2030 outlines the main governance guidelines for future deals in the oil industry. In particular, for the development of the hydrocarbon sector, the government from now on will be looking for long-term partners whose objectives coincide with the development objectives of the country. Moreover, in any future deals the government is ready to rigidly and reasonably defend the interests of Kazakhstan related to the environment, employment and training, and the needs of other social problems (i.e. infrastructure building and corporate social responsibility). Strategy 2030 demands that contracts on the use of the country's natural resources should be highly transparent agreements that correspond to the best world practice and meet the interests of Kazakhstan. This governance approach is seen as a guarantee of the stability of the country's future revenues and the fairness of contracts. In turn, these agreements will create a positive image of the country as a reliable and professional partner within the world community. These considerations are expected to guide any future negotiations for new developments in oil and gas. The grounds for such explicit articulation on the expectations from new contracts are to some extent related to disappointments over the fairness of already signed contracts. Overall,

there are two major areas of concern that the state attempted to address in later years as prices went up: (1) the government take and (2) the local benefit. State interventions in these two areas are perceived as a change from the FDI-friendly environment toward increased resource nationalism in Kazakhstan. The argument for demanding such changes was motivated by the lack of experience and weak capacity within the state at the time when these agreements were signed. Proposals to changing these agreements are associated with economic and political costs. However, the political leadership exhibited readiness to compensate for its weak capacity at the time of signing the agreements by changing the sectoral legislation and demanding renegotiations.

Though three major contracts are protected by the stability clause, with the rising oil prices there was a change in the bargaining power and in the overall rhetoric of sectoral legislation related to resource extraction. As argued by Sarsenbayev (2011), since 2000 the government has been accused of exhibiting the economic type of resource nationalism: the desire to change terms and conditions of existing contracts to enjoy greater economic benefits and increasing its control over the oil industry. For example, at Tengiz there were several rounds of environmental claims related to the disposal of chemical by-products from production and to gas flaring. Formal disputes took place in November 2002 related to financing plans on the expansion of the oilfield that would have eroded the government's share of revenues. In 2007 Chevron was fined 609 million US dollars for causing environmental damage in Kazakhstan (OECD, 2012).

In 2001, during the session of the Foreign Investor Council – a consultative body consisting of the main international investors in the country and chaired by the President – President Nazarbayev emphasized the need to observe a proper balance between the interests of the state and the international businesses. In 2004-2005 substantial amendments in the sectoral regulations were introduced to increase state control in the oil industry. As a way to maximize the national value, the National Oil Company Kazmunaigas was created in February 2002 – a new economic and policy institution to centralize and control the rents from oil wealth. Kazmunaigas represents the state's interests in all major oil projects as a shareholder. The new legislation stipulated that the national oil company would have a 50 percent share in all new oilfield development projects. There were also changes to the fiscal regime. Amendments to the Tax Code introduced a revised tax regime

for new contracts signed from January 2004: oil export duties, increased royalty rates, increased profit tax corridor, and increased oil revenue tax (Orazgaliyev, 2018).

In 2009 Kazakhstan introduced the new Tax Code, which changed the taxation regime for the oil and gas industry. This new tax regime was widely commented on by local and international experts specializing in the area. The general idea of the new Tax Code was to create the grounds for economic diversification and re-distribution of the tax burden by lowering the taxes for non-resource sectors while increasing at the same time the tax burden for resource sectors. The corporate income tax was lowered from 30 to 20 percent for all categories of taxpayers. It was announced that corporate income tax would be gradually lowered further to 15 percent by 2011. However, due to the economic downturn in recent years the tax rate is now at 20 percent. The value-added-tax (VAT) level was reduced from 13 to 12 percent. VAT is not paid on exports of crude oil. In general, with the lower tax levels for non-resource producers the tax burden for resource sectors increased from 49 to 62 percent at the international oil price of 60 dollars per barrel. Royalty payments are removed by the new mineral extraction tax with the latter ranging from 5 to 18 percent (while the royalty is between 2 to 6 percent). The new rent tax on exports is applied to the value of crude oil at world prices and ranges from 0 to 32 percent³¹. The PSA as the taxation method for oil and gas contracts has been removed from the legislation. PSAs signed before 1 January 2009 will continue until the due dates indicated in the contracts. The fiscal stability clauses are also removed as a general practice and only a limited number of oil producers are granted this protection from changes in the tax legislation. Payment of historical costs was introduced from 2009 to compensate for the state's cost for the geological survey and territory development that were incurred before the contract with the subsurface user was concluded. From 2010, Kazakhstan introduced an export duty on crude oil that is now at the rate of 60 US dollars per ton.

At the sectorial level a new Subsoil Use Law was introduced in 2010 that addressed all activities related to resource extraction: the fiscal regime, environmental standards (i.e. prohibition of gas flaring), and governance procedures for awarding rights on subsoil use. The new Law introduced the right to cancel strategic contracts if the

³¹ https://online.zakon.kz/Document/?doc_id=30769340 , accessed on 13 July 2019

government saw a threat to national security, the environment or economic interest of the country. The other novel legislation related to legalization allowing the elimination of the PSA regime due to disappointing performance of such regimes at Kashagan and Karachaganak oilfields. In particular, the state demanded a renegotiation of the PSA on Kashagan and reconsideration of the state's stake. Such claims were based on disappointment with delays in project development, which caused lost opportunity costs for the country. After six months of negotiations, in early 2008 an agreement was reached to increase the stake of Kazmunaigas in Kashagan project to reach the level of its major shareholders (16.6 percent on average) with a consequential decrease in the share of other project partners. This case demonstrates the readiness of the state for renegotiations even at the potential cost of its international reputation and possibly lower project revenue in return for higher total revenue, and more control over rent re-distribution, energy security, price setting, etc. (Kalyuzhnova and Nygaard, 2008). As a result of the renegotiation, Kazakhstan was able to improve its overall position within a major project like Kashagan. The weakness of Kazakhstan's position was rooted in the regulations in the PSA allowing variations in the fiscal terms depending on the level of profitability and other economic factors of the project. When in 2007 ENI, at that time the operator of Kashagan, reported the expected amount of capital expenditures of the project would exceed the GDP of Kazakhstan (i.e. 136 billion US dollars), the government requested for an independent economic analysis. The independent researcher concluded that the increased costs and delays in project implementation though carried by the investor would eventually be borne by Kazakhstan as it receives nothing until the investor recovers its costs. By renegotiating, the government obtained the right for compensation in the amount of 5 billion US dollars in the case of delays. In addition, the management structure at Kashagan was amended as a result of the renegotiation – the sole operator ENI was replaced by NCOC, a group of five shareholders led by SHELL. Overall, the Kashagan renegotiation is valued as a great success for the government (Sarsenbayev, 2011)

In 2009 the government accused KPO – the international operator at Karachaganak – of cost overestimation, illegal gains, environmental violations and breaking the immigration law. A series of legal actions were taken against KPO and tax claims were estimated at 2.5 US billions. As a result of the lengthy dispute, Kazmunaigas received

an additional share in Karachaganak in 2012. Later in 2015 the government claimed 1.6 billion US dollars from KPO due to a disagreement with the method used for calculating the shares of income for shareholders. As a result of international arbitration, the parties reached agreement only in October 2018. It states that the government will receive 1.11 billion US dollars in compensation fees. The PSA will be amended to create better terms for Kazakhstan, resulting in an additional 415 million US dollars in revenue to be paid until 2037. KPO will provide the country with a 10-year loan to fund infrastructure projects or pay an equivalent amount estimated as 200 million US dollars.³²

It must be noted that the timely implementation of the projects and their costs is a very sensitive issue for Kazakhstan as any fluctuations in production at major oilfields directly affects how much oil the country can bring to the international market while the reported project costs impact the profit share of the government. This was reflected clearly by a State agency interviewee: *"...PSAs are about the sharing of production between the contractor (investors) and the Republic of Kazakhstan, which is the customer. Many things affect the sharing of production: project costs, operations schedules, and oil price. For us (Kazakhstan) - the lower the costs, the faster the project will be implemented, respectively, the economic efficiency of these projects is higher and the country will gain more in the production phase"* (Interview transcript 15). For example, the launch of Kashagan production was a very important event for Kazakhstan's economy but it experienced lengthy delays. Before production finally started in 2016, the launch was rescheduled many times from its initial plans to start in 2005. The collapse of the pipeline in 2014 delayed the launch for two years more and added an estimated 4 billion US dollars to capital costs for the replacement of 200 kilometers of leaking pipelines³³. The investigation has been put in place to find the reasons for the leak, however, some independent opinions pointed to improper welding during installation and insufficient quality control³⁴. As a result of the

³² <https://caspiannnews.com/news-detail/kazakhstan-wins-big-in-karachaganak-energy-settlement-2018-10-3-0/>, accessed on 25 October 2019

³³ <https://www.ft.com> "Leaking Pipelines to add up to \$4bn in Costs to Kashagan Oil Project.", article accessed on 15 December 2019

³⁴ https://en.tengrinews.kz/politics_sub/pipeline-havoc-at-kashagan-no-losses-for-kazakhstan-no-258268/, accessed on 15 December 2019

delay, the country lost its potential profit from oil exports (though the prices were low) while the project operator incurred additional costs. However, with the launch of Kashagan and the ongoing production at the oilfield, total production of crude oil and gas condensate in Kazakhstan reached a record amount of 90.3 million tons in 2018.

Despite the changing legislation and the disputes over the main contracts, the general governance regime remains supportive for major oil development projects. As stated by one State agency expert, common solutions are reached: *"... Given the historical relationships, these projects have been working with these contractors for 20 years; we (Kazakhstan) are working with these consortiums. They are within the portfolio of our strategic investors, we have our own history, and we search for common solutions with them"* (Interview transcript 15). For international investors these oilfields are strategically important assets and development of these assets plays a major role in their corporate strategies as pointed out by one industry expert: *"... for Chevron - Tengiz is a diamond in its "crown", just like for ENI and SHELL it is Karachaganak"* (Interview transcript 28). This is confirmed by ongoing expansion at these oilfields. The expansion of these oilfields will bring new opportunities for the oil industry and the domestic economy overall. The expansion of Tengiz with the record investment of almost 37 billion US dollars is considered big, not only for Kazakhstan, but also on the world scale. This project is expected to increase oil production at Tengiz by 12 million tonnes annually by 2025 from recent 29 tonnes a year in 2018. This was a long discussed decision and it was conducted during difficult times when the country needed to expand its oil production due to the crisis in the oil market. With the Tengiz project, Chevron has focused on Kazakhstan and reduced its investment elsewhere in the world. For Chevron, Tengiz is an important asset in its international portfolio especially after the company decided to exit Norway's offshore sector³⁵. At the same time, expansion of Karachaganak is under way with estimated costs at around 5 billion US dollars while production at Kashagan continues according to the current operational plan. Thus, the three oilfields remain the most important investment projects in the country for the nearest future.

The other important area associated with increased state intervention in the oil and gas industry concerns local benefit. Initially,

³⁵ <https://www.oilandgas360.com/chevron-becomes-first-oil-major-to-exit-norway/>, accessed 15 October 2018

when the first agreements with foreign investors were signed the emphasis on local content was not strong. Although, the content of PSAs is confidential, it is noted by industry experts that the chapter on local content in the contract is very vague and does not contain any specific or direct obligations for international operators: *“It should be taken into account that these contracts – TCO signed in 1992, Kashagan, Karachaganak in 1997 – we (Kazakhstan) did not understand many things, there was no such experience in Kazakhstan. (In these agreements) the chapter on local content is written “in three sentences”. And in fact, under these contracts between the Republic and investors, they (investors) have no obligations. And today, after all, we are trying, to use all sorts of different tools to put pressure on investors to expand it (local benefit). By use of their principles of good-neighborhood relations, the principle of contribution to the development of the local economy – we put pressure on them, and put pressure on these areas. But in fact, legally it is not allowed”* (Interview transcript 28). Thus, whether the international oil operator showed any compassion for local content development in the negotiations was a matter of choice and a reflection of the desire of its shareholders to push this agenda as part of its corporate strategy. The state was very active in steering this desire of international oil operators to work with local suppliers.

It must be noted that the cost profile of the projects played a crucial role in the increased state activism in fostering local content. The Sourcebook refers to Kazakhstan’s experience in local content development and indicates that the shift towards a more active state policy was induced by the procurement practices of the foreign investors. Often supplies of goods, works and services came from the foreign investor’s home country and benefited their own economies, not Kazakhstan’s. On the part of the foreign investor such requirements for local content were treated as investments required under the agreement with the state. Investors have incentives to overstate their costs at the exploration stage and avoid paying taxes by claiming deductions of investments when production commences (The Sourcebook, 2017). Expanding cost profiles triggered not only the state’s willingness to renegotiate agreements but also to force investors to source locally. As one State agency representative said: *“There has always been a political will in place because foreign investors operate in accordance with PSA. There all the costs are summed up, subtracted from the final cost value, and then some final total amount appears. We need to divide this price cap in to certain ratios: one part goes to Kazakhstan,*

the other part goes to the foreign investor. The most interesting thing is the cost value. It is possible to procure in Kazakhstan. But you also can bring ... paper from America. The price will be 3 or 10 times higher. Even the water was carried here. Many things were imported, I'm not even talking about equipment. Costs increased. Part of the money flows abroad. And we don't know what are their relationships there: maybe management extracts double or triple profits, raise the cost value here to launder money in the West through offshore entities, and then here (in Kazakhstan) they say that costs are very high, that it is unprofitable to produce oil, prices are low, and they work under zero-profitability, leaving the country with a very small profit. The same problem exists in services and in engineering works at large projects" (Interview transcript 6).

Despite the fact that the main contracts contained little information on the development of local content, they still introduced guidelines on local sourcing. The most important principle related to competitive pricing and adequate quality noted by a State agency representative: *"There is the PSA, everything is explicitly written in there: what rights do we have, and how to move further. We, as a state, offer various initiatives, through negotiations, and many of these are not in the PSA. PSA is a large, voluminous document, but there is not much written about the local content. ... The most important thing is the quality of goods. We cannot put much pressure on the operator, firstly, they are protected by the PSA, secondly, there are risks - if tomorrow you insist on some local companies, and they will buy the goods, and there will be an emergency - all costs will be borne by the state. ... I want to say that within the PSA we do not have the right to lobby, insist, or force them (investors) to work with local companies. The operator chooses the most competitive supplier and goods that are suitable to technical standards - it is stated in the PSA."* (Interview transcript 32)

Thus, the local content provision in contracts is a very sensitive issue. On the one hand, the state is concerned with the cost profile of oil investment projects as it affects the government's take. On the other hand, pushing the local content needs to take into consideration the cost-benefit analysis of the impact of interventions on the cost structure of each specific project and what are the benefits at industry or country level. An aggressive local content policy can substantially affect the cost profile of oil projects if local absorptive capacity (i.e. competitive pricing and adequate quality) is not in place or is weak. Thus, one

particular solution would be to foster local suppliers that are capable of competing with imports on both price and quality.

Overall, the legal framework in the oil industry has undergone dramatic change and experienced several rounds of resource nationalism and change in the bargaining power of the state. By changing the rules and regulations, the state was aiming to compensate for weak state capacity at the time of signing these major oil agreements. However, despite the disputes, the parties still manage to find workable solutions as these oilfields are substantial investments and foreign investors are already locked in through sunk costs. The policy on local content is an integral part of the increased resource nationalism and is a major consequence of increased bargaining power and overall improved capacity of the state. Capturing supply opportunities in extractive industries to develop local industries is the core element of local content policy. Local content remains a sensitive policy agenda. Its evolution in Kazakhstan is discussed in the following section.

5.2. Local content policy: a search for optimal level of local procurement

The shift toward economic resource nationalism is associated with growing state interventions through industrial policy both at the sectoral (i.e. local content) and the horizontal level to foster accelerated industrialization. This section focuses on local content policy while the next section discusses horizontal policy.

The Natural Resource Governance Institute defines local content as the value brought by the extraction project to the local, regional and national economy. An industry expert explained: *“In the first instance, when we talk about revenues, in our case - from oil projects, we are guided by PSAs that define the share of the Republic’s revenues from production, direct revenues, and taxes. However, there are indirect things that also make a big contribution and local content is a vivid example. These are indirect revenues to the budget, but these are jobs created, taxes on employees, incomes of local companies, their taxes, technological development of our industry, various sectors – machinery, construction, and services. This indirect effect in dollars is less than the direct income of*

the Republic from oil sales and taxes, but its multiplier effect, which is very difficult to calculate – is greater because it is primarily a contribution to human capital, we develop our people and our enterprises” (Interview transcript 28). Local content plays an important role in industrial policy of all mineral economies. The main constraints to the expansion of local content in Kazakhstan is the limited capacity of local suppliers in terms of specialization and technology demanded by subsoil users; insufficient number of qualified workers; and underinvestment in the development of SME's (Tordo et al., 2013).

Local content policy was evolving in stages until Kazakhstan joined the WTO. WTO membership requires the abolition of any direct preferential regimes in the country. The expansion of the local content agenda is accompanied by the development of the legal framework. There are a number of regulatory documents at different levels of legislation related to local content. The higher levels statutes introduce general obligations on local content while the lower level regulations introduce the specific methodology for calculating the local content and reporting forms.

Since the initial three main contracts did not contain any specific targets on local content, the state had limited power for coercion in this area. The situation started to change after the 2008 financial crisis. Though the main contracts were not affected, there was a general rise in interest in the local content agenda. One industry expert explained this: *“The focus (on local content) during 1997-2000 was not strong or urgent. It started to gain weight in 2008 – I think it was due to the crisis. Since the beginning of the financial crisis, when it became clear that the economy was one-sided, and that we (Kazakhstan) are subject to shocks if we remain mono-product only. Then the issues of local content were raised, supporting local producers, and all these issues received a new meaning... Let's be honest: propositions on the local content are spelled out in the agreement on Tengiz, and 5 years later – in agreement on Karachaganak. But they were spelled out very generally and blurred, allowing international partners to evade the performance of their duties on local content”* (Interview transcript 29).

The first efforts that appeared in 2004 on the promotion of local content had no practical impacts, while later steps proved to be more effective as they followed a more robust implementation approach. In the absence of specific regulations it was hard to make any analysis about the policy progress and compare indicators as subsoil users, firstly, had great flexibility what to count as local content, and secondly,

the values were reported in totals without any distinction by categories. One industry expert explained the difficulty of reporting on local content: *"There was a tricky moment. When the country for the first time turned to the issue of local content, all the reporting appeared in totals. But when we talk about the activities supplied by our enterprises, we need to separate goods, works and services. With goods - one could always bring the goods from abroad. Works and services need to be performed here locally, some might come from abroad, but mostly here. And all (subsoil users) started to report local content in totals. Many times I personally tried to offer amendments to reporting - to split and separate goods, works, and services, as it would be more honest than when they all reported together, even together with wages."* (Interview transcript 29).

The Law on subsoil and subsoil users adopted in 2010 laid the legal foundations for local content in Kazakhstan. Though the content of the main international contracts in relation to local benefit remained unchanged, the Law obliged all new subsoil users winning contracts to procure locally. In fact, all new contracts on subsoil use included specific numerical obligations for local content in the procurement of goods, works and services. This gave a strong impetus to the development of all types of local industries. The main regulations refer to subsoil users to increase the use of local labor (e.g. specific share of working positions including middle and top managers that should be acquired by local staff is explicitly indicated), direct procurement of local goods as well as works and services. Any violation by the subsoil user of the obligations under the subsoil use contract leads to penalties that take the form of payment of fine or cancellation of the contract. For monitoring purposes, a special agency on local content development has been created – NADLoc. Apart from monitoring, NADLoc has an additional mandate to provide direct state support in the form of reimbursement of specific expenses of local producers related to the completion of contracts with subsoil users.

The Kazakh content Law was introduced in 2009 and was a predecessor to the Law on subsoil and subsoil users adopted in 2010. In 2010, an important regulatory innovation related to the introduction of a generic methodology on how the local content should be calculated and reported. These regulations covered all types of subsoil users in the oil industry – international operators and other oil producing companies. These rules introduced effective monitoring and enforcement practices as well as improved the capacity of authorities to make an informed judgment on policy progress in this area with

reference to reporting. An international oil operator explained: *"If we look into the history, the local content policy actively began in 2008-2009. In 2010, we have created a methodology, until that year - each operator was calculating it by their own rules; there were no unified forms – for wages, for taxes. To unify the reporting form, the government has created a methodology. The President at the same time held a session at the Foreign Investors Council on local content. This gave impetus and importance to the idea of local content. Before that time the operator himself was a decision-maker and it was hard to compare values. At this time NADLoc had been created, it was transformed from the contract Agency Kazkontrakt. Then NADLoc started to introduce rules and creating goods registries."* (Interview transcript 27)

Tordo et al. (2013) argue that policy metrics (indicators and formulas for calculations) is central to local content regulations of the government as well as to local content strategies of oil firms. Very often the chosen metrics drives the regulator's or oil firm's behavior, i.e. the specific calculation approaches can result in different outcomes (for example, staff nationalization could be calculated per head or as a share of total gross salaries amount). Different metrics are in place to measure local content in the workforce (staff nationalization) and in local procurement. The authors suggest that one particular approach to measure development of local suppliers is to use metrics that track actual improvements in core parameters of their competitiveness over time: suppliers costs, delivery times, labor productivity, quality of the product, change in volume capacity, health, safety and environmental performance. The output data received then needs to be benchmarked against international standards. However, such measurements require extensive field surveys and considerable investments in administration. An alternative approach that is less dependent on firm-level surveys would be to track what new contracts local suppliers have won and how their revenues have grown over time since they became suppliers to oil firms. This approach is more capable of capturing the causal effect between new contracts won and supplier development programs of oil firms. Still, the authors note that the evidence on such metrics being employed is weak.

The state in Kazakhstan has put substantial effort to engage local businesses in the development of major oil projects even at the expense of the foreign investment climate in the country. OECD (2012) notes that in pursuit of the economic diversification agenda and capturing greater local value from foreign investments, measures taken in the

hydrocarbon sector on local content have increased operational restrictions and added greater uncertainty to foreign investors. On the one hand, the local content rules allowed sub-soil users to implement their own supplier development programs in exchange for lower local content indicators in the contract. However, foreign investors indicated difficulties in complying with the local content rules for various reasons: “the poor quality of local goods; a lack of domestic suppliers producing specialized products; inadequate technological capacity of existing local suppliers; insufficient local human capital; limited interaction among domestic producers, subsurface users and the government; and the mismatch between short-term goals to raise local content and the long-term requirement for complementary policies to build capacities”(p.39). Thus, foreign investors were struggling to meet the strict requirements of local content as they faced weak local absorptive capacity. Apart from that, the government severely restricted the hiring of foreign labor and provision of work permits. Under local content rules, local suppliers are entitled to a 20 percent rebate for bids on tenders against foreign competitors. This regulation has been raised in the session of the Foreign Investors Council in 2008 and foreign investors have cited that such a remedy will contribute little to the international competitiveness of local firms and suggested that local firms should be gradually discounted over time only after they gain long experience in supplying goods and services to lead oil firms. It must be noted that though there were complaints on local content rules from foreign investors, the estimate of local content in foreign projects in 2008 was only 10-15 percent and was far below levels in other oil exporting countries at the time (OECD, 2012).

The introduction of coherent local content rules helped to increase the local employment and procurement of local works and services. In 2011 the local content in works and services was respectively at 58 and 69 percent. The reasons for increased local content levels in services is that their provision includes local knowledge or require localization for effective execution of projects, i.e. legal and insurance services, permits and approvals, custom clearance, transportation, industrial waste management, etc. Higher levels of local content in services and works are not accompanied by the same progress in procurement of goods. In 2011 the local content in goods was at 12 percent. Within this category only goods that require comparatively lower levels of technological complexity and capital investment enjoyed higher levels of local content. It must be noted that

the reported values do not include the three large projects, while the general analysis on efficiency gains for local suppliers seems to be not carried by the regulator (Tordo et al., 2013). Thus, fostering local sourcing of goods remains a pressing policy agenda in the oil industry as explained by a State agency representative: *“When we talk about local content, it is important to split the question in to two parts. The first part refers to what local industry could offer to (oil operator). The second part is what (oil operator) could offer in exchange. In the first part - we are at a very low level. We do not produce anything considered as technologically sophisticated equipment. We have simple things. In the oil industry it is even more difficult: the oilfields are complex, the oil is sulphurous, and the metal used must be of specific quality. Today Kazakhstan's industry cannot provide everything that is needed for the (large oil) projects. Therefore, we are talking about a low percentage of local content in the procurement of goods and supplies of equipment. In services and works we have progressed a lot. People are expensive to bring, and it affects the competitiveness of the tendering bid. For example, the bid for engineering design, a foreign company indicates the bid in hours per head and they cannot bring everyone from England. If you take oil service companies, it is in their interest to train locals, for them it is cheaper. Therefore, in services and works we have a high share of local content, and (oil operator) demand it, and for service companies it is profitable to hire local staff. And we have a growing trend with local content in services about 60%. When it comes to production of goods, our factories are built in Soviet times, they cannot compete and do not provide the quality required for the project.”* (Interview transcript 15)

In 2016 Kazakhstan joined WTO and any direct policy favoring local suppliers was prohibited. Since WTO rules constrain the use of direct numerical indicators in the procurement of goods, local content policy is aimed at removing market failures associated with information asymmetry. For example, when it comes to open tenders, single source or electronic auctions, it is mandatory to employ the registrar of goods, works and services – state-led information system in the form of the list of local producers and relevant goods, works and services that are produced locally. This system allows control and monitoring of transactions through electronic procurement systems, making the information about existing local suppliers available and creating conditions for local producers to obtain long-term procurement contracts. In addition to that, special certification is introduced to distinguish local producers from foreigners and provide

an assessment on the level of local content in that specific good or service (so called – CT-KZ certificate). There are transitory regulations regarding accession to WTO and sectoral regulations that are valid until 2022, which oblige subsoil users to ensure that the share of foreign personnel does not exceed 50 percent of top-managers, middle managers and specialists in each respective employment category. Existing contracts with numerical local content will be over time substituted by new ones. This was explained by a State agency representative: *“The Ministry of energy on the one side of the contract for oil and gas extraction currently does not introduce requirements for local content as it did before at the signing of contracts. It only includes requirements allowed by WTO rules – a maximum of 50% of the local content in nationalization, that is easy to achieve. And now trying to localize is not necessary in fact. ... Previously, the requirements on local content were directly prescribed in the contract, and if not fulfilled - then the sub-soil user had to pay a penalty. Now the liberalization due to WTO, new contracts are being signed, but the old ones remain... Old contracts will be expiring and new contracts without local content requirements will grow. The share of contracts with local content requirements will be reducing. The state needs to find new sources of indirect support.”* (Interview transcript 19)

In 2017 the new Code on subsoil use was introduced – that is the highest-level statute in the domestic regulatory framework on subsoil use. This Code provides the rules on the use of mineral resources, the exercise of state authority and regulation in the sphere of subsoil use, defines the legal status of subsoil users and terms of carrying out their respective operations and other regulations on the use of natural resources. The Code introduces obligations of subsoil users during the period of production on education, R&D and socio-economic development of the region of their operations. Expenses for social and economic development of the region include financing of infrastructure development, development and maintenance of social infrastructure (i.e. schools) in the region, and any other financing transferred to the state budget for the same purposes. Overall, during the production period, starting from the second year of operations, the subsoil user is obliged to provide annually 1 percent of the production costs incurred at the end of the previous year to the following areas: training of local personnel, R&D (any research, scientific, laboratory or technological development activity), and socio-economic development of the region where operations are located.

In relation to local sourcing of goods, works and services during the phases of exploration or production of hydrocarbons, the Code prescribes the methods of procurement – open tenders, single source, electronic auctions, and commodities exchange. With these methods, subsoil users procure goods, works and services from Kazakhstani producers. The Code defines a Kazakhstani producer as an individual entrepreneur or legal entity established in accordance with the legislation of the Republic of Kazakhstan, located on its territory, and recruiting at least 95 percent of its total employees from the citizens of Kazakhstan.

It must be noted that local content policy has increased the state's capacity for intervention in the oil industry and the main motivation for this active policy effort is the desire to lock in greater benefits for the domestic economy. Increased state capacity is captured in new rules and approaches to regulate the industry as one industry expert explained: *"... In the last 4-5 years with the launch of Kashagan together with expansion projects at Tengiz and Karachaganak, there is a growing economic understanding that appeared somewhere in 2008. The crisis of 2008-2009 made us understand that oil prices dropped, revenues and the National Oil Fund squeezed sharply, we realized that there are other sources (of growth), the effect of those in such (crisis) periods is much more important. I know that Kashagan and Karachaganak expansion gave new impetus to this idea. The state is learning too. The new laws and regulations that we are currently implementing of course take this (experience) into account."* (Interview transcript 28).

At the same time, the lead oil firms could respond to local content policy in different ways. In the case of Kazakhstan, the international oil operators exhibit readiness to engage in negotiations over individual local content targets. This is line with the arguments of Ngoasong (2014) about business practices used by lead oil firms to respond to local content policy. In particular, there are four types of business practices grouped by strategies of lead firms on engaging local suppliers: (1) renegotiations with the government of local content requirements; (2) introduction of legal compliance framework; (3) taking a local content as a business case for strategy development; and (4) incorporating local content as a part of corporate social responsibility.

Active local content policy although not directly affecting the three large contracts, had a disciplining effect on international oil operators. A State agency representative reported that the local content

targets on these large oilfields are discussed case-by-case: *"They set the target on local content (in this project) at 32 percent. In general, TCO essentially has no obligations on local content, their contract is stable, but this target is estimated at about 11 billion US dollars. However, this project will be over soon. Now, in fact, the entire local business is looking at this project."* (Interview transcript 19)

Indeed, the expansion projects at Tengiz and Karachaganak and ongoing development of Kashagan are seen as a source of growth for the domestic economy and the government is using all its powers to capture this potential. An industry expert explained: *"There are positive achievements too. The state has been delaying for 2 years the decision on approval of the expansion at Tengiz. The main dispute was on what would be the local content there and how much will it be in dollars. That is all. This already means a lot as they have achieved a particular level of commitment (from oil operator), and the work is ongoing. Much more progress has been achieved on KPO. If four years ago total value of local content was about 36 percent in dollar terms, of which 1 percent is goods, today it is already 12 percent. These positive achievements are because of the people who work on these items."* (Interview transcript 28)

Bargaining over local content targets in goods is very extensive. However, the agreed levels are achieved with goods of low technological complexity or utilities. One industry expert said: *"If we take the example of Tengiz, its operator - TCO - has a commitment to achieve 32 percent of local content in the expansion project. This target will be achieved mostly with construction materials, electricity, and water, i.e. infrastructure. There is no equipment. The equipment that is used for production will not be presented by large, unfortunately."* (Interview transcript 1)

The Center for Strategic Initiatives, a local consulting company, has undertaken the analysis of local procurement in the oil industry. The company reported during the forum of machinery industry held in Astana that between 2013-2016 the value of procurement was growing on average by 18.4 percent annually. In 2016 the share of three international oil operators in total oil industry procurement was at 75 percent. In 2018 the share of local content in goods separately for KPO, TCO and NCOC was respectively 12.5, 5 and 27.3 percent. The share of works in local content for the same year was 64.6 percent for KPO, for TCO – 33 percent, and for NCOC – 56.3 percent. When it comes to services their share in local content for KPO was 74.8 percent, for TCO – 75 percent, and for NCOC - 30.8 percent. The total average local content

for KPO is 59.7 percent, for TCO – 36 percent, and for NCOC – 43.4 percent. Thus, higher average local content levels have been achieved mainly due to the higher contribution on services and works. If one looks further in to the structure of the procurement of local goods, one could see that in 2018 the share of diesel in total local procurement of KPO was 46.7 percent, while for NCOC it was 94.9 percent, and for TCO the share of construction materials was 42.4 percent and the share of wires and cables was 24.5 percent.

Though there are many factors that affect state commitment on local content (price levels, costs, administration, metrics, change in political leadership and in vision, etc.), given that the state has already strengthened its capacity in local content regulations, it is highly unlikely that it will give up on this agenda and is destined to become an integral part of the government's industrial policy. In the newly adopted Concept on the Third 5-year Industrialization Plan it clearly states that industrial policy is going to intervene on procurement policies. Thus, the state will continue its policy on regulated procurement through various regulatory instruments to stimulate business relationships between local manufacturers and international oil operators as well as in cooperation with the international oil operators procurement channels toward local suppliers and improve local absorptive capacity. An industry expert stated: *"We, our state bodies, akims (local governors), regions, and those structures that are responsible for monitoring of these projects, demand the maximum economic return from these projects, including local content as an instrument of economic return. Shareholders and operators have no obligations. Investors agree to this regulatory pressure and the strict requirements that the state introduces, and they realize that this is a flow of the history and it is not only in our country that this has happened, but they are also aware that there are no obligations under their contract. What does that mean? Are we going to change the contract? Of course we will do that. When the KPO contract will be due in 2024 that is where we need to discuss. Many contracts of subsoil use terms will be due and it will be necessary to revise them"* (Interview transcript 28)

Overall, Tordo et al. (2013) reflecting on the local content policy case studies in the set of oil exporting countries, summarizes the key features of local content policy that governments would like to design: "is consistent with other economic development policies; addresses market deficiencies; promotes competition and the emergence of an efficient domestic economy; fosters technology and knowledge

spillovers; supports the development of adequate local skills; minimizes compliance and administrative costs; and develops economies of scale or localization” (p. 95). Thus, efficient local content policy is expected to induce development of new businesses. Efficiency of local content policy is driven by the condition on whether policy requirements are optimal or not. Sub-optimal local content policy is likely to result in adverse consequences. Optimal local content policy matches positive externalities with local supplier capabilities. Consequently, capabilities and competitiveness of local suppliers define optimal levels of local content. This implies that there is a natural level of local content that exists even without any regulation. Going beyond this natural level is associated with costs, the only question is how high could this threshold be. In this respect, for any given price level, the optimal level of local content reduces with the lower competitiveness of local suppliers against import substitutes. The optimization problem in local content policy is solved with the maximization of incremental welfare that consists of policy costs, local producer surplus, and social benefits that arise as a positive increase in local supply above natural levels. In this setting any incremental change in local supply is a function of the competitiveness of local suppliers and the size of the positive externalities driven by the social opportunity cost of labor and capital (Macatangay, 2016).

In the case of Kazakhstan, the local content policy was trying not only to capture optimal levels but also the optimal combination of interests of all stakeholders – the state, foreign investors, local producers – and the emergence of an extensive regulatory framework was triggered by too general regulations in major contracts. Given the low levels of local procurement in goods, building of backward linkages goes far beyond the local content regulations and introduction of targets. A much harder task is still to be achieved – increasing the competitiveness of local suppliers. The government in Kazakhstan has gained the bargaining power and increased its capacity in oil industry regulations on local content but weak local absorptive capacity remains a stumbling block to move the agenda on local sourcing of goods forward. The search for the optimal local content level is a dynamic process and it is still going on through case-by-case negotiations within the legal framework of major contracts and is contingent on the improved competitiveness of local suppliers. In this sense, local content could not be separated from the overall industrialization agenda as it is an integral part of it. At the same time, higher local content levels at

major oilfields operated by international operators could not be delivered through local content targets only. It becomes very important to promote the competitiveness of local suppliers in terms of price, quality and technological complexity. In this sense, industrial policy might be a better tool to strategically fill capacity gaps at a broader level. This is because capacity gaps of local suppliers could be rooted to industries outside the oil industry, underdeveloped infrastructure and weak institutions. Industrial policy is called on to remove market failures with horizontal and vertical tools and improve the ease of doing business overall. Leveraging extractive industries to localize production of goods is one of the central items in the post-crisis industrial policy.

5.3. Industrial policy in Kazakhstan: the rise of state activism

During the booming years of resource-led growth industrial policy was aimed at the development of the non-extractive industries. However, the urgency was not that strong as the markets were booming, backed by expanding oil export revenues and bank credit to boost consumption. The post-crisis industrial policy in Kazakhstan drastically differs from the policy before the financial crisis period in three main aspects: (1) the level of devotion to change; (2) the level of state intervention in the economy; and (3) the governance system. There are several reasons for such change: (1) the state became a main source of funding in the economy due to oil-money saved in the National Oil Fund while the banking sector is very slow to recover from the global shock; (2) the financial crisis and low oil prices revealed the urgency for economic diversification; and (3) considerable efforts are directed to improve the quality of the economic decision-making process. As previous and this chapter show, after the financial crisis the government introduced new policy tools to manage and control the economic cycles, improve the quality of economic policymaking, increase the quality of bureaucracy, and create conditions for growth of specific industries. Industrial policy is both horizontal and sectoral.

Horizontal policy aims to create favorable conditions to do business in the country overall. The final goal is development of local entrepreneurship. This agenda is addressed by a wide range of reforms

in all areas - economic, social and political systems. These are also commonly referred to as structural reforms and relate to overall improvements in the country context: infrastructure development, better investment climate, national system of innovation, etc. Thus, horizontal industrial policy is aimed at creating a supportive general background for accelerated industrialization (OECD, 2019).

At the horizontal level, the industrial policy is driven by two long-term strategic documents – Strategy 2030 and Strategy 2050. Both strategies have the imprint of the first President, Nursultan Nazarbayev, as they were announced as a part of the annual address to the nation in subsequent years. Thus, commitment to economic development at the top level of the political leadership remained very high. Strategy 2030 was adopted in 1997 and is an overarching long-term strategic document that provides the development vision for the country. With its seven priority goals Strategy 2030 was the initial document that introduced the principle of “economy first, then politics” – economic reforms were seen as more crucial in delivering economic growth than political considerations. This principle was then reflected in future documents. The implementation process is split in to three shorter periods: 1998-2000 for the preparation; 2000-2009 and 2010-2019 for the implementation. The 10 years execution process for each stage is guided by the relevant Strategic Plans.

The Strategic Plan 2010 adopted in 2001 sets the priority goal of building the long-term competitiveness of the economy and doubling the value of GDP by the end of the planning period in 2019. The country was very close to achieving this ambitious target as the economy was booming during most of the 2000s. Monetary policy had inflation under control while the national currency was stable with rounds of appreciation as export revenues grew. The government was prudently saving the export revenues in the National Oil Fund that was established in 2000. The assets of the fund grew very fast – from 1.2 billion US dollars in 2001 to 41.6 billion US dollars in 2010. The main functions of the National Oil fund are to accumulate savings for future generations and provide a cushion at the time of crisis. The National Oil Fund played a crucial role in stabilizing the economy during the financial crisis and later during the oil price plunge as it served as the largest source of state budget revenues during these crisis events (see Figure 5).

Figure 5: The National Oil Fund assets (million US dollars) and the share of its transfers in budget revenues (in %), 2000-2016

Source: <https://nationalbank.kz/kz> the official web-site of National Bank of Kazakhstan, accessed on 16 March 2017

<https://minfin.gov.kz> the official web-site of the Ministry of Finance of Kazakhstan, accessed on 16 March 2017

Strategic Plan 2020 adopted in 2009 has faced a dramatic change in external conditions – slowing global economy and a weakened financial system in the aftermath of the financial crisis. Strategic Plan 2020 identified five priority areas for development in the next decade: (1) preparing for the post-crisis development; (2) accelerating diversification through industrialization and infrastructure development; (3) increasing the competitiveness of human capital; (4) providing the population with high-quality social, housing and communal services; and (5) strengthening of interethnic harmony, security and stability of international relations. In turn, the accelerated diversification is delivered through the development of traditional industries (oil and gas sector, mining and metallurgical complex, and nuclear and chemical industry) as they gradually transition from raw materials production to processing. The promotion of these sectors to meet the demand of subsoil users is among other driving factors of accelerated diversification. The Strategic Plan outlined a set of clear

indicators that the country needs to achieve by 2020 as an indication of the general improvement in the economic environment. These indicators are evaluated against their level in 2009 and are as follows: (1) domestic and foreign investments in non-resource industries increased by at least 30 percent; (2) the share of FDI in GDP increased by 10 percent; (3) the share of SMEs in GDP increased by 7-10 percent; (4) diversification of the investment sources - 10 main investor countries with each country's share of 5 percent or more; (5) Kazakhstan will be among the top 50 countries in the "Ease of doing business" ranking by the World Bank (Doing Business Report)³⁶; and (6) Kazakhstan will take a position among the top one-third of countries in the ranking of "Transparency International" corruption perception index. Thus, the government aimed to improve the ease of doing business for both domestic entrepreneurs and international investors.

The specific emphasis on the investment climate is because of the fact that growth in Kazakhstan has always been associated with large inflows of FDI. Though this approach is still durable as a long-term development strategy, the main issue comes from the fact that inflows of FDI, by and large are concentrated in resource extraction. Over the last decades the sectoral structure of FDI has not experienced any dramatic change: since 2005 between one-half and three-quarters of total FDI went to extractive industries; the share of market-seeking investors (i.e. retail, finance, insurance) ranges between 19 and 40 percent; and between 2 and 24 percent was the share of efficiency-seeking FDI (i.e. manufacturing and IT). At the same time, the share of reinvested earnings in inward FDI is also very low and is signaling the challenge to retain existing investors. To address the issue of capital accumulation for economic growth, the country has turned to a more proactive policy to attract FDI and change the sectoral composition by increasing the share of efficiency-seeking investments (World Bank, 2018).

The other important point to note relates to increasing the role of SMEs and the private sector in general. The state's involvement was already high in the pre-crisis period (mainly due to the legacy of the

³⁶ It is important to note here that in August 2020 the World Bank suspended its Doing Business Report due to irregularities in the outcomes of the ranking <https://thediplomat.com/2020/10/why-the-world-bank-torched-its-ease-of-doing-business-ranking/>, accessed on 28 November 2020

ownership structure in the main industries from the Soviet economy while privatization resulted in the emergence of influential private holding companies mostly in the resource industries and finance with weak effects on the growth of SMEs) and increased further with the stimulus package provided in the aftermath of the financial crisis in exchange for a share of ownership by the state. On the one hand, there are industries where the share of the state has been traditionally high (education, medical services). On the other hand, the last financial crisis called for bailing out of large enterprises and the state entered those markets as a shareholder. At the same time, in an attempt to foster industrial transformation, the state took the role of a *demiurge*: each industry with some sensible input to GDP has at least one enterprise that is directly or indirectly owned by the state. These factors contributed to the growing share of the state – starting from services (finance, transportation, real estate, etc.) and going to the real sector. Market failure in the financial industry also played a role in this situation as the state became a major large-scale investor and owner of public savings in the National Oil Fund and State Pension Fund while private savings were chronically low.

Despite the long lasting pursuit of a market economy, Kazakhstan still has an economic structure dominated by the state. The state controls the traditional network industries (utilities, transportation, telecommunication, electricity generation) but also base industries (oil and gas, petroleum refining, chemicals, metals), financial system (banking, insurance, pension fund) and other manufacturing. In 2014, the gross value added by the state-owned enterprises (SOE) was estimated at 8.1 percent of GDP with around 7,000 registered SOEs (OECD, 2017). The state controls the economy through its holding companies, among them the Samruk-Kazyna established in 2008, which has the status of a sovereign wealth fund as it accumulated all state owned assets worth 56 percent of GDP in 2011. The main goal of Samruk-Kazyna is to strategically manage the shares of enterprises to maximize their value and competitiveness in the world markets (Felipe, 2014).

In 2012, President Nazarbayev introduced a new vision in Strategy 2050. The economic conditions for this strategic move were supportive – Kazakhstan had successfully recovered from the financial crisis and the economy was back to growth supported by high oil prices. When announcing the new long-term vision President Nazarbayev concluded that the goals of the Strategy 2030 have been

successfully achieved and it is time to move forward. The new vision is to join the top 30 advanced economies by per capita income in 2050. Realization of this new vision is based on seven pillars: (1) human capital development; (2) effectively and sustainably managed energy resources; (3) achieve *green economy*; (4) urban and regional development; (5) build a modern knowledge economy; (6) promote economic integration; and (7) strong institutional capacity.

The Plan of the Nation (referred as a Plan of 100 Steps) announced by the President at the beginning of 2015 is the core strategic document that sets the directions for institutional reforms in the country. The Plan is the list of 100 actions (steps) to be taken in five areas: formation of professional state apparatus; the rule of law; industrialization and economic growth; identity and national unity; and formation of accountable government. The Plan is adopted as an implementation strategy for Kazakhstan's new long-term vision.

Implementation of Strategy 2050 starts with the Strategic Plan 2025 adopted in 2018. This Plan reflects the move to a new model of economic growth based on stimulating export-oriented industries, enhancing the resilience and technological complexity of the economy, developing human capital, the rise of private capital as a source of funding, increased competition, the leading role of the private sector and harnessing the potential of the development regions of the country. The new model is called to overcome the *middle income trap*³⁷ and help the country leap to the league of the top 30 developed countries in the world. The Plan sets a main goal – by 2025 achieving a high-level of sustained economic growth that results in increased well-being of people at the level of OECD countries. Increasing the competitiveness of business and human capital, technological modernization, improvement of the institutional environment, as well as minimizing the negative impact on the environment – all combined are the main sources of qualitative growth. At the same time, the sustainable development goals of the United Nations will be an important guiding

³⁷ The concept of “middle income trap” assumes that upon reaching a certain level of income (between 10 to 15 thousand US dollars – considered as the middle level according to graduation by the World Bank), economic growth in the country might slow down due to increased wages, production costs and as a result of a country experiencing a decline in its price competitiveness. In this situation, a country is not yet able to compete with developed economies with higher skills and innovation, as well as with economies with lower incomes, lower wages and cheap production. Thus, the country is trapped at the middle-income level.

benchmark. The Plan sets specific targets by 2025 for an improved business climate and development of entrepreneurship in the country: (1) the share of value added of SMEs in GDP – 35 percent (against 26 percent in 2016); (2) Kazakhstan listed 37th in the OECD ranking “Product Market Regulation” (not listed in 2016); (3) the share of middle size entrepreneurship to GDP – 15 percent (against 4.8 percent in 2016); and (4) the share of the “informal economy” to GDP – 20 percent (against 25.8 percent in 2016). An overarching indicative assessment of development efforts and country-wide progress is the gradual transition of Kazakhstan's position in the Global Competitiveness Index (GCI) of the World Economic Forum (WEF): in 2021- 46th place, in 2025 – 40th place, in 2050 – 30th place.

The horizontal industrial policy is complemented by vertical industrial policy aimed at the promotion of specific industries. In 2003, the Strategy of innovative-industrial development for 2003-2015 was adopted as the first landmark document to guide industrial policy. The Strategy aimed at slowing the rate of decline of the share of manufacturing in GDP and keeping its share around 12-12.6 percent in 2015 (against 13.3 percent in 2000) while under a no-policy scenario it would fall to 10.9 percent. In 2003, under the umbrella of the Strategy the government created new development organizations through which industrial policy tools will be implemented – Development Bank of Kazakhstan, Investment Fund of Kazakhstan, Innovative Fund, and Export Insurance Corporation. The creation of these development organizations is needed to address market failures that existed in the financial system. However, in 2008 the government analyzed the implementation progress of the Strategy and concluded that during 2003-2007 implementation of the Strategy had not led to any change in the economic structure and its further execution was hindered by the financial crisis.

The promotion of industries accelerated in 2010 with the introduction of five-year industrialization plans. Currently there are two plans with the Concept for the third adopted in 2019. The IIIP for 2010-2014 covered more than 700 projects that were included in the so-called Industrialization Map and aimed at both import-substitution and export-promotion. The plan sets the targets for the share of local content in the procurement of subsoil users (oil and gas sector) excluding NCOC, KPO and TCO: for goods - up to 16.0 percent; and for works and services - up to 72.5 percent. The IIIP failed to achieve its preset headline quantitative indicators, including the increase of the

share of manufacturing in GDP to 12.5 percent (see Table 4). The impact of 1IIP on the economic structure was limited as the trend in deindustrialization continued with services currently contributing 58 percent of GDP and industry – 25 percent, while exports still mainly consist of crude oil (State program, 2010).

Table 4: Kazakhstan's GDP structure by sector, in percent, 2010-2015

	2010	2011	2012	2013	2014	2015
Production of goods:	45.1	40.5	39.2	37.2	36.6	35.7
Agriculture	4.5	4.7	4.0	4.4	4.2	4.7
Industry:	32.9	29.6	29.2	27.0	26.6	24.8
Mining and Extraction	19.5	17.1	16.5	14.7	14.7	12.9
Manufacturing	11.3	10.6	10.8	10.8	10.0	9.9
Construction	7.7	6.2	6.0	5.8	5.8	6.2
Services:	51.7	47.1	49.4	51.5	53.3	57.7
Internal trade	13.0	13.1	14.4	14.7	15.5	16.7
Transportation and Logistics	8.0	6.6	7.1	7.4	7.7	8.5
Finance and insurance	3.6	1.9	2.0	2.6	2.9	3.5
Real estate	8.6	8.2	8.3	8.1	8.1	8.8
Education	3.2	3.0	2.9	2.8	2.8	2.9
Healthcare	1.7	1.6	1.6	1.6	1.6	1.8
Science and engineering	3.9	4.2	4.3	4.1	4.1	4.4

Source: <https://stat.gov.kz> official web-site of Statistics Committee of Kazakhstan, accessed on 15 July 2019

The 2IIP for 2015-2019 is the logical continuation of the 1IIP. The SWOT analysis (see Figure 6) provided in the 2IIP outlines the following major issues to be addressed or leveraged by the industrial policy:

Figure 6: SWOT analysis of industrial development of Kazakhstan

Source: The State program on industrial-innovative development of the Republic of Kazakhstan for 2015-2019

The vision of industrialization policy in Kazakhstan is to achieve by 2035 the average level of competitiveness of OECD countries in manufacturing through an increased share in world exports of manufacturing and reducing the productivity gap with developed countries in all production factors. To address the challenges and opportunities associated with accelerated industrialization, the 2IIP proceeds with a priority sectors approach laid out in the 1IIP. The 2IIP plan sets overarching tasks: (1) accelerate development of manufacturing; (2) increase efficiency and value added in priority sectors; (3) expand production to supply markets of non-raw materials; (4) maintain productive employment; (5) achieve a new level of technology in priority sectors and create a basis for the development of sectors of the future through the formation of innovation clusters; and (6) promote entrepreneurship and development of SMEs in

manufacturing. The specific numeric indicators relate to the increased value of manufactured exports by 19 percent against its values in 2015, increased labor productivity in manufacturing by 22 percent, and increased investment in manufacturing (State program, 2010, 2014).

WTO membership has affected the approach to the promotion of local industries. The newly adopted Concept of Innovative-industrial Development for 2020-2025 calls for a policy mix that assumes a balance between direct and horizontal support. In this respect, direct state support for the development of manufacturing industries will evolve around the creation of three groups of enterprises – *the strong backup*, *competitive manufacturers*, and *centers of gravity*. The task of direct state support for each group differs in its scope. *The strong backup* group is expected to deepen the progress achieved under industrialization and further promotion of priority industries. *Competitive manufacturers* are called for export promotion, increasing the complexity and diversification of exports. *Centers of gravity* are enterprises that will be supported in a manual mode and provided with tailored state support. In turn, systemic support will aim to create specialized factors and demand conditions for the development of the manufacturing industry overall. Here the task is to increase access to industrial and digital infrastructure, qualified human capital, centers of innovation and competence, testing and certification infrastructure, logistics systems, industrial consulting and engineering. Thus, overall productivity increase is at stake. It is explicitly noted that the state support will target competitive enterprises that can take additional responsibility in exchange for state support, i.e. there is a move toward a *carrots and sticks* approach. The state is searching for ways to target accountability of private agents by aligning the provision of direct support with increased responsibility of businesses receiving such support. Thus, the governance approach in implementation of industrial policy is changing. This selective approach lowers flexibility and adaptation to a changing environment and constrains entry to new sectors. The selection of priority sectors is based on the existing products space but is not fully transparent, while information on the progress, monitoring and reporting efforts is scattered across implementing agencies and are difficult to obtain (OECD, 2017).

Overall, industrial policy in Kazakhstan continues to be successful in improving the regulatory framework and removing administrative barriers to enter the market. The country is gradually moving up the Doing Business rating since the start of its more active

industrial policy: in 2010 ranked 58, in 2014 – 53, in 2018 – 28. The latest report in Doing Business published in September 2019 Kazakhstan is ranked 25th out of 190 countries. This implies that by ease of doing business Kazakhstan is already among the top countries (ahead of Austria, Japan, Spain) and points to narrowing down the gap with the best regulatory practices in the world. The reforms in the following areas ensured Kazakhstan's high rankings: starting a business; trading across borders; and enforcing contracts. However, despite the high ranking, there are a number of barriers that continue to hinder industrial transformation. These mostly relate to higher-level institutional factors – underdeveloped infrastructure, weak governance, fragile banking system, and lack of competition. In particular, corruption remains one of the stumbling blocks for development. According to the Corruption Perception Index 2016, Kazakhstan is ranked 131 out of 176, and moved up to 124 in 2018. The index remains chronically low without any sharp changes in all the 20 years of measurements for Kazakhstan. Hence, corruption and its perception by citizens and business, overall, remain stable and bad. The current state of physical infrastructure is inadequate and underinvested though there is some positive contribution from the launch of the Nurly Zhol program in 2015 to develop all types of transport infrastructure (ports, railways, automotive), housing, utilities and build new schools with funding from the National Oil Fund. According to the Logistics Performance Index (LPI) in 2016, Kazakhstan was ranked 77 and by the quality of infrastructure was ranked 65, and in 2018 the country ranked 71. For a landlocked country with the size of Kazakhstan, infrastructure is one of the main drivers of development.

The Worldwide Governance Indicator for 2018 also indicates strong improvement in government effectiveness and regulatory framework in Kazakhstan. By these two indicators, the country is at the average level of the upper-middle income countries group. The indicator captures continuous improvements in the rule of law: for the period 2007-2017 the indicator almost doubled (from 23.56 to 35.58) but it is still lower than the average of the reference income group. However, the indicators for voice and accountability and control of corruption do not show any marked improvements and remain low. This basically means that the most important institutions – security of property rights and rule of law – are still largely ineffective. Corruption, inefficiency of public administration, and informality results in the

selective application of the rule of law. Major capacity gaps remain both at central and ministerial level in terms of professionalism, uncompetitive salaries in relation to the private sector, and the non-established system of meritocracy. Ministries lack capacity (resources, expertise and technical tools) to implement government programs while policy making is determined by the planning process with ministries focusing more on legal and formal implementation of strategic initiatives, rather than on effectiveness of the programs. Assessment of programs relies on numerous targets and indicators that are mostly output and process driven. Reshuffling of the governments' structure and a change of responsibilities between ministries that is already a regular event, adds further interference in delivering policy results (OECD, 2014). These provide grounds for formalism in policy implementation and reduce its effectiveness. High growth rates in the past several years did not resolve the systemic issues in the civil service – corruption and red tape. Protectionism, patronage practices and team movements are widespread (Janenova, 2016). Thus, the principle laid down in Strategy 2030 “economy first, then politics” is working as a stumbling block for industrial transformation in the longer-run as politics directly affects the way resources are allocated in the economy. In the current institutional setting, the private sector and entrepreneurship are still very much underdeveloped. The private sector remains subdued as SOEs dominate the economy and hinder incentives for dynamic and innovative competition, while governance of SOEs is weak along many aspects – appointing managing staff, provision of state aid, regulation, etc.

The general industrial transformation with reference to the international competitiveness of goods produced in the country is reflected in the Economic Complexity Index (ECI). The level of complexity is based on a country's export basket. In Kazakhstan the value of the ECI declined during 2000-2010: in 2000 it was at 0.15, in 2005 – 0.36, and in 2010 – 0.84). This trend indicates the overall decline in the complexity of exports. This dynamics is the result of a combination of factors: (1) increasing commodities prices on world markets deepened the resource specialization in Kazakhstan; (2) the booming service and consumption industries are mostly non-traded; and (3) the demand for industrial goods is largely satisfied by increased imports. With an active industrial policy starting from 2010 there has been a positive trend in ECI values: in 2014 it was 0.46 and in 2017 – 0.37. Thus, the level of economic complexity is improving but still

remains low compared to other countries: in 2017 Kazakhstan is ranked 81st out of total of 133 countries. Figure 7 provides a generic representation of the level of complexity of the country's exports. Although there is a positive trend in economic complexity, the export basket of Kazakhstan is not yet sophisticated enough and is mostly limited to commodities.

Figure 7: Kazakhstan's export, 2017

Source: The Atlas of economic complexity
The Growth Lab at Harvard University. The Atlas of Economic Complexity.
<http://www.atlas.cid.harvard.edu>, accessed on 26 August 2020

The GCI that assesses drivers of productivity and long-term economic growth ranked Kazakhstan 55th among 141 countries in 2019. According to the GCI, Kazakhstan performs well on parameters such as labor market regulation, administrative requirements for businesses, and adoption of ICT. The country considerably lags behind and has a low ranking for the financial system (ranked 104), innovation capability (ranked 95) and health as reflected in life expectancy (ranked 95). The financial system remains one of the major areas that holds back economic development. Access to finance at affordable prices and of required duration is one of the main constraints in Kazakhstan. Kazakhstan is ranked 104 among 141 countries and is well below many middle-income countries. For example, Malaysia is ranked

13 in the world by this indicator. The most vulnerable sub-indicators in Kazakhstan are soundness of banks (ranked 121) and financing of SMEs (87). More efficient financial markets could increase the speed of economic diversification and reduce the volatility of GDP growth in the mineral economy (Manganelli and Popov, 2010). However, in Kazakhstan, the fragility of the financial system still remains a main issue and banks have never fully recovered from the financial crisis. As a result, industrial policy is over-reliant on direct financial support from the state. Selective support is directed through state holding companies - Samruk-Kazyna and Baiterek. A wide range of instruments is in use: preferential access to cheap funding, exemptions from taxes and customs duties (for participants of special economic and industrial zones), subsidies, support in branding and market research (especially for exports projects), and administrative guidance, etc. By some estimates tax exemptions are too generous and create substantial revenue losses for public finances.³⁸

5.4. Financial system: still a handicap

The banking system historically was the main driver of the financial system in Kazakhstan. During the financial crisis bank credit provision halved, the liquidity shortage was severe, while non-performing loans continued to build up and reached 1/3 of the banks loan portfolio in 2012 (World Bank, 2013). The combination of all these factors led to increased risk-aversion by the banks. As a result, the state became the major provider of finance during the financial crisis as banks struggled with non-performing loans and a freeze on bank credit.

There are two main providers of state funding for banks and the economy – National Oil Fund and United Pension Fund – that lend cheap money to the state budget and state holding companies to channel them further via development financial organizations to banks through the inter-bank lending system. This system is aimed at making access to finance cheaper as well as to support priority sectors. The state's major financial organizations are the Development Bank of Kazakhstan and the Damu Fund. The Development Bank of Kazakhstan

³⁸ The World Bank estimated that in 2016 revenue losses were at 6 percent of GDP

is a state industrial bank that acts as a financial operator of the ongoing industrialization program and provides financial resources (investment funds and working capital) to large investment projects of nationwide importance. The Damu Fund for the development of entrepreneurship is a financial agent created to provide financing to SMEs. Apart from these, there are several other state-funded financial organizations that focus on trade financing, provision of insurance, and other financial services. Given the lack of a developed capital market, most of the finance is provided from public funds. There are ongoing efforts to create a regional capital market – Astana International Financial Center (AIFC) – an idea inspired by the Dubai financial center experience. AIFC is believed to act as a platform to attract foreign financial investors to the region and already it has entered in to partnerships with the NASDAQ and Shanghai stock exchanges to create technical capacity for trading operations.

Overall, Kazakhstan is facing an institutional trap in the financial system: there is simultaneously excess liquidity in the money market as the state continues to provide funding, while the private sector has limited access to credit with very weak bank lending. The monetization level reached a record of 45% to GDP in 2016 but bank lending did not recover after the financial crisis³⁹. The banking system remains underdeveloped both in institutional terms (lack of trust, weak regulation, high dollarization of deposits) and international terms (bank credit-to-GDP). Unable to deal with the high level of non-performing loans in their portfolios, weak banks leave the market – the number of banks in the beginning of 2019 is 28 compared to 33 at the beginning of 2017. The important point here is that bank closure happens not as a result of their self-decision to exit the market but because of the withdrawal of the bank's license by the central bank. Each case of recent bank closures recently has been associated with manipulation of regulatory reports related to the quality of credit portfolio, weak operational management, and widespread credit operations with affiliated entities. The weak credit portfolio and high level of non-performing loans is the legacy of the boom years and constrains bank credit even today. The central bank is pushed to deal with this issue as the stagnant banking sector works as a hurdle for economic growth, much demanded by the political leadership. As a result, in 2017 the central bank turned to a more active policy and

³⁹ www.nationalbank.kz, accessed 16 February 2019

introduced its program of liquidity provision to five large banks to the equivalent of 1.3% of GDP to boost their capital and increase the resilience of the financial sector⁴⁰. This cheap funding has been provided as subordinated debt at lower than market prices and this debt is convertible into central bank shares if bank shareholders fail to increase the operational indicators of their bank. The introduction of this program contradicts the central bank's primary mandate on inflation targeting and is an indication of the lack of the central bank's independence. At the same time, the selection of banks to participate in the program is non-transparent and chosen banks have people related to political elites among its shareholders. It is remarkable that one of those five large banks was unable to pay the interest for its international bonds at the end of 2018 and the debt has been covered through one of the state's financial organizations. In turn, the bank instead of becoming the property of the central bank has been bought by some little known financial holding company that happens to be a major shareholder of the Nazarbayev University – newest and largest university in the country with generous state funding. The details of this deal remain unknown. It is important for information about such deals to be made public. The central bank's motivation to approve such deals needs to be clearly and publicly stated, otherwise, there is an impression that rules are applied at random – even if it is forbidden to buy and become a shareholder of any bank without understanding of the source of funds, such deals happen and the central bank still approves them. In this situation the general public lacks the information about the real state of the financial system, the gossip about possible bank failures circulate through social networks and attack not only an individual bank's stability but weakens the trust in the entire banking system as it is perceived to be owned by some powerful members of the elite that does not guarantee the soundness of the financial organization itself.

The legacy of unsustainable use of international credit together with general institutional weaknesses related to property rights and the judicial system, the perceived lack of integrity in financial statements and low reliability of financial information, impede financial deepening. The state's various schemes to support access to finance for firms were effective during the financial crisis but their long-term benefits are limited as they are targeted to individual firms and are

⁴⁰ www.nationalbank.kz, accessed 06 March 2019

applied randomly. There is no empirical evidence that they have generated lasting gains in credit provision or investment at an aggregate level. The indefinite implementation of these schemes masks the symptoms of institutional weakness (especially on encouraging domestic savings) and come at a high cost for public finance (OECD, 2017).

The role of the financial system (in the context of Kazakhstan it is more about large banks) in ensuring economic growth is fundamental, and it is an important economic institution that ensures the flow of financial resources between economic agents. One of the main qualities of institutions as a category is their stability, constant applicability, and trust in them. However, in Kazakhstan, the banking system has not yet been fully established as an institution due to its instability and the presence of the state as an alternative source of credit due to the National Oil Fund. In addition, the central bank reports that financing of investments in industry is carried out to a greater extent at the expense of enterprises own funds. As a result, it is necessary to take measures to institutionalize the banking system as a stable and priority source of money for financing the economy and modernization of production.

In this case, the experience of countries in South-East Asia and, to a greater extent, Japan, is a good example. These countries pursued a policy of financial restriction (financial restraint) against banks. In the most general form, this policy can be described as follows: the flow of income for banks is provided exclusively through their profitable activities on an ongoing basis. At the same time, conducting these activities by banks is based on the creation of initiatives for them to become a long-term player interested in meeting their obligations to depositors. In order to encourage banks in such activities, two tools are used – limiting the returns on deposits and limiting the entry of new players into the market. At the same time, it is critical that the deposit yield should not be lower than the real effective rate, and the number of market participants is sufficient to compete for resources. As a result of these measures, banks are interested in making the most effective use of their operating resources to attract deposits from the population, improve the quality of service, expand the operational network, and provide affordable loans on a competitive basis (Hellmann et al., 1997).

Thus, the experience of South-East Asia in the formation of resilient institutions that ensure the growth of the country's economy can be applied in Kazakhstan. The qualitative difference between the

process described above and subsidizing banks as is happening in Kazakhstan is the decentralization of the distribution of economic resources: not the state that controls the process of making economic decisions, but a pool of economic agents pursuing the goal of maximizing profits. At the same time, the role of the state should be changing from direct participation and substitution of institutions by its interventions, but to provide soft support to the market. Despite the state programs to offer interest rate subsidies, credit in the economy remains sluggish and the central bank must constantly work to withdraw excess liquidity from the money market. At the same, the central bank is gradually reducing the cost of domestic funding for banks by controlling deposit rates: it was decided to reduce the recommended rates on deposits in tenge from 10.5% to 9.8% from July 1, 2019. This is also possible as inflation is kept under control. The post-crisis monetary policy is aimed at creating a more stable macroeconomic environment overall. There were two important monetary policy events after the financial crisis: the introduction of the floating exchange rate with a sharp devaluation and the move to inflation targeting. The tenge was set to floating from August 2015. By the end of 2015, the tenge depreciated in nominal terms by 86.5 percent against the US dollar, 67.6 percent against the Euro, and 47.3 percent against the Russian Ruble, and by 30 percent on average to all currencies in real terms⁴¹. With the introduction of the floating exchange rate the central bank turned to inflation targeting as its main objective. The depreciated tenge is spurring price levels, while the central bank is putting effort into increasing its role in the money market as a lender of last resort. With the limited access of banks to external funding, this allows the central bank to control the money supply and increase the effectiveness of monetary policy in addressing economic cycles.

⁴¹ www.nationalbank.kz, accessed 06 March 2019

5.5. Incentives of international oil operators to engage with local suppliers in Kazakhstan

Tordo et al. (2013) argue that MNCs have strong incentives to develop local supply chains as a way to reduce operating costs, remove uncertainties about costs and prices, address market inefficiencies, improve competitive advantage and secure a license to operate. Many MNCs have changed their supply management systems to improve access of local suppliers to procurement processes independent of state regulations for local content.

International investors working in the oil industry perceive Kazakhstan as blessed with rich oil resources that trigger their interest in the country. The country is a global player in the energy industry that requires projects to be developed in accordance with international standards. At the same time, international investors face some issues when they invest in the country. The major issue is that oil development projects are complex and expensive. In the case of Kazakhstan, the future of the oil industry is related to development of off-shore oil operations in the Caspian Sea that increases the complexity of projects further and adds to capital costs. Hence, to a large extent, the development of oil projects is subject to market conditions: primarily the fluctuation of the oil price on world markets. International oil companies operate under volatile market conditions and their operations need to at least breaking-even. In this setting, as lead oil firms are following price fluctuations, to ensure the required level of profitability they turn to internal sources of efficiency gains (i.e. potential revenues) – lower production and operations costs. Thus, in the low oil price environment, attention is turned to the execution of projects, procurement strategies and general cost control. The final goal of these processes is to reduce the unit cost of operation. To achieve this goal lead oil firms employ various strategies – global and local. Lead oil firms search for the most proximate suppliers in local markets to control the cost of their supply chain. However, if the domestic location does not offer competitive opportunities to reduce costs, then the lead oil firms could choose among other sourcing options: (1) the basic strategy to turn to importing things, (2) use existing local capacity that could be limited to some simple goods, or (3) launch local supplier development programs.

For operators there is a strong motivation to engage with local suppliers, however the process is associated with additional costs. Operators explore the Kazakh market independently by themselves and choose a local partner who has passed all their qualification requirements in terms of price and quality. Any local firm after working on these projects for a long time raises its capacity and quality level. At the same time, when there are competitive local firms it allows the operator more flexibility and choice within some price range: international contractors that operate around the world would be disciplined by the pressuring price competition from local companies. Ideally, a local firm could be a cheaper option for the oil operator because it is closer and employs the local workforce that is also cheaper.

Next, the development of a contract strategy for new projects depends on the capabilities of the local market. There are two types of expenditures associated with project development: capital expenditures are one time, while operational ones happen on an annual basis, from year to year. In some operators there is an understanding that these expenditures accrue to the local market not only for economic reasons but also for the sake of fairness because local industries need to have a chance to benefit from these expenditures.

Lastly, being dependent on imports has its risks that are outside the control of either a foreign supplier or an oil operator. Risks like currency fluctuations, change in the trade regime as well as political situations all can have a strong impact on project development progress. Thus, operators are ready to invest in the development of local capacity because there is a definite economic benefit as clearly explained by one operator: *"First-of-all it makes good business sense – certain products if they can be acquired locally at the right price and right quality, especially with goods and services, you have shorter lines and especially in a country like Kazakhstan that is very important because to get things from abroad it is a long distance, and with customs, it all takes time. Our business is quite dynamic. For example, if we have shorter supply lines we need less capital in our warehouses and we can rely on local suppliers, whereas when suppliers are further away we need to keep capital in our warehouses to respond to the dynamic nature of the operation. So the first reason is - it makes good business sense although we do realize that initially it requires an investment. So the first time is never the cheapest, we know that we need to invest to get over that hurdle."* (Interview transcript 23)

It is important to note that though international operators might see economic sense in engaging with local suppliers, doing so in practice is a borderline decision that depends on many factors. When operators and their shareholders observe the limited capacity of the local market and at the same time are pressured by market conditions, they could also face strong obstacles related to local regulations. The state support could play a critical role here and could also take the form of some regulatory or administrative guidance that allows lead oil firms to speed internal processes and open ways to search for local sourcing opportunities. Thus, the state support does not always have to evolve around local suppliers only, but it could also help oil operators overcome the local burden given that they are committed to engage with local suppliers. This support could be of legislative or an administrative nature but this could help in creating some bundles of local projects and overcome coordination issues. Such support could create economies of scale and result in better opportunities for local suppliers. Oil operators could redistribute oil rents to local firms, but for this distributive system to work, local firms have to follow international standards and become competitive. A great potential exists for partnerships between the state, oil operators and local producers on fostering local sourcing.

Summary

This chapter has found that the idea of promoting local producers is deeply embedded in the contemporary development framework of Kazakhstan. This development framework includes not only the system of state planning and strategic documents but extends to the contractual framework of oil extraction operations. At the same time, the incentives of oil operators to engage with local suppliers also shape the development framework for oil production. We have learned that limited local capacity constrains procurement of local goods. However, given that the contractual framework does not explicitly target local procurement, the international oil operators are guided by price and quality when planning procurement. Under this setting, local suppliers are facing a substantial level of competition from imports and as a result procurement of local goods remains low. Though

international oil operators have incentives to engage with local suppliers, whether they would practically do that depends on many factors. But when it makes clear economic sense, international oil operators will always opt for local sourcing. The state, in turn, has taken active steps in shaping the desire of oil operators for local industrial goods. In this sense, embedding the local suppliers in the development framework is associated with economic resource nationalism and increased state activism. The state intervenes not only through the introduction of local content rules but also through active industrial policy that addresses market failures located outside the oil industry, for example the banking system. If viewed retrospectively, the industrial policy in Kazakhstan, which was activated in 2010 and with accession to the WTO, the promotion of competitiveness of manufacturing has become a main goal. The oil price slump was an emergency case for the economy and resulted in the change in the general perception of the economic development model of the country that calls for the development of new productive activities in order to gain competitiveness in non-resource products and rethinking of failing policies. Industrial policy in Kazakhstan has many components, however, development of local supply industries remains its essential part. Still, the emergence of new competitive suppliers in these industries is evolving slowly.

In a modern globalized world where countries compete on a “constructed comparative advantage”, successful industrial policies are rooted to efficient state structures and strong economic bureaucracy (Evans, 1995). Kazakhstan is willing to move away from its current status of crude oil exporter toward manufacturing activities with higher value-added. The government needs to deliver on this hard task of building the country’s new comparative advantage in order to overcome its path-dependence on oil exports. The provision of a stimulus package during the financial crisis and use of the National Oil Fund for the financing of industrial policy actions, is indicative of a transformation of strong fiscal linkages into production (i.e. backward) linkages. In this sense, the country follows an orderly unbalanced growth path as defined by Hirschman. As Hirschman notes: “fiscal linkage is restricted to the direct participation of the state in the income stream generated by the export sector. ... direct fiscal linkage investments have typically been undertaken ... to diversify economy away from the dominant export staple.” (p. 71). The transformation of the fiscal linkage to backward linkages is contingent on the state’s

capacity to efficiently and effectively invest oil money and this is in line with Hirschman's ideas as he noted that in the fiscal linkage the state faces a strong uncertainty " ... when a portion of the income stream earned in the enclave is siphoned off for the purpose of irrigating other areas of the economy. Hence the possibility of either faulty investment or a great deal of leakage on the way ..." (p. 69). This is the point where the linkage theory intersects with institutional economics: economic development hinges on strong institutions and strong economic bureaucracy is one of them.

To support the emergence of local producers in Kazakhstan, the state is actively engaged in the provision of structural reforms as a part of horizontal industrial policy for private sector growth and is engaged in the supply of institutions. The progress in this area is reflected in higher international rankings of the country. However, if one ranking points to a significant improvement in the regulatory framework, the others capture weak institutional quality that is not compatible with the long-term vision of the country. Although Kazakhstan has a much stronger position in terms of economic institutions compared to its neighbors in the region and non-regional peers, governance and political institutions are perceived as weak, while progress on corruption, voice and accountability remain lowly rated. This is mainly the result of the deliberate strategy "economy first, then politics" and treating the economy and polity as separate spheres. Such separation creates grounds for tensions between what government declares and what it does. The low international ratings on the quality of general level institutions indicate that there is still selectivity in the application of rules. Improvements in the state capacity and efforts to provide better conditions for doing business are bearing fruit, however, weak reforms on the rule of law, transparency and accountability remain as stumbling blocks. This is in line with Acemoglu and Robinson (2010) on the role of institutions in delivering economic growth. Hence, moving away from extractive industries relies on the emergence of inclusive institutions to support the growth process.

The linkage theory suggests that production forces will shape the development process. What is evidently observed is that, indeed, some linkages appear at the cost of others. In Kazakhstan the fiscal linkages are very strong as reflected in the size of the National Fund but these are not transformed fully into production forces. Fiscal and consumption linkages in Kazakhstan are more persistent than production forces. One of the reasons for this are weak institutions. The

regulatory framework is well ahead of a real-life economy that suffers from an underdeveloped and fragile financial system, weak productive capacity and is dominated by state ownership. As a result, the general level of private sector development remains very limited. Though industrialization could be driven by the state, economic development requires a strong private sector presence. Transaction-intensive industries like the financial market still remain largely underdeveloped. Manufacturing is also considered as transaction-intensive. Fostering manufacturing is a priority and the progress in this area will bring the country to its vision. Though there are many driving factors, with increased state-activism as one of them, the economic development faces strong obstacles. At this point it is instrumental to turn the analysis to the exploration of the specific case of the oil equipment industry in Kazakhstan.

Chapter 6: The oil and gas machinery and equipment industry development trends and reasons for weak cooperation with oil operators

Exchange operations with oil operators at the three major oilfields are the focus of this study. Given the size of these major oil projects there is a great potential for upgrading the domestic industry through the sourcing of local goods. In accordance with the investment contracts international oil operators are developing large oilfields - Tengiz, Kashagan, and Karachaganak. These international agreements provide stable rules and regulate all activities related to these projects. There is strong evidence that these projects generate substantial demand for specific oilfield equipment and machinery items. However, the local sourcing of all types of goods only marginally covers the existing demand and is estimated at 10 percent share in total local procurement at three large projects.⁴²

Although some local machinery and equipment plants are in close cooperation with oil operators, these seem to be more the exception than the rule, especially when it comes to technologically complex industrial goods. International operators potentially could benefit from local sourcing but the level of engagement with local firms remains low for a range of reasons.

This chapter examines the development patterns of the oilfield machinery and equipment industry, provides descriptive statistics as well as examines the sources of market failure and reasons for weak cooperation with the three international oil operators. Weak links with international oil operators is seen as the main bottleneck hindering further development of the industry.

⁴² <https://primeminister.kz/ru/news/kazahstan-iniciiroval-sozdanie-mezhdunarodnogo-centra-neftegazovogo-mashinostroeniya-i-razvitiya-servisa-195155> , accessed on 23 July 2020

6.1. Oilfield machinery and equipment industry development in Kazakhstan

The upstream oil and gas equipment industry is primarily engaged in the manufacturing of technological equipment, complete technological lines and installations for oil and gas industry. There are five branches of the industry depending on the type of goods produced: (1) manufacture of heavy machinery, i.e. drilling equipment, drilling platforms, rigs, pumps, compressors and their spare parts; (2) production of technological equipment for geological and geophysical services and works; (3) manufacture of equipment for repair of wells; (4) manufacture of machinery and equipment for transportation of raw materials (tubes, valves, pipes); and (5) production of equipment for processing of raw materials (separators, storage, metering).

The global market for oilfield equipment is expected to grow in the coming years and is estimated to reach 205 billion US dollars in 2020. The market for drilling tools alone is estimated to grow by 4.75 percent on average annually during 2017-2022 and the market size in 2022 is expected to reach a value of 8.61 billion US dollars.⁴³ The market for oilfield equipment depends on the investment activity in the global oil and gas market, which in turn is highly sensitive to oil price fluctuations, demand for oil and gas, and changes in environmental regulations. Lower oil prices force oil producers to cut costs and postpone decisions about investing in new development projects. To stay within the cost profile of oil producers, the oilfield equipment manufacturers are required to boost their competitiveness not only on price but also on skills and innovation.

When it comes to Kazakhstan, the oilfield equipment industry is a newcomer and its emergence is mostly due to the development of the hydrocarbon industry. During the Soviet Union time, there were some mechanical workshops (like Petrovsky plant in Guriev which was created in the pre-war years as a mechanical workshop for maintenance services for oilfields at Dossor) but apart from that there was no oilfield equipment industry. An industry expert commented: *"There was nothing, everything else Kazakhstan was receiving from other Soviet republics"* (Interview transcript 29). However, with the active

⁴³ [https://www.export-u.com/INDUSTRIES/Oil and Gas Top Markets Report.pdf](https://www.export-u.com/INDUSTRIES/Oil%20and%20Gas%20Top%20Markets%20Report.pdf), accessed on 25 July 2020

development of large oilfields the new industry came into existence and now there are more than 30 companies of different size operating in the sector.

There were several factors that supported the process of emergence of these new producers in the industry. One of the most important factors is the state support through the national oil company “Kazakhoil” that played a catalytic role by sourcing oilfield equipment locally.⁴⁴ In addition, improvements in the state’s bargaining power has also been applied in pushing the agenda for greater use of local goods and services. There are three types of subsoil users in the oil industry – international operators, national companies, and other foreign companies (e.g. China). This division by ownership also reflects the different degrees of the state capacity to influence the procurement policies of each type of subsoil user. As discussed, all types of relationships with international oil operators are regulated by specific international agreements. These agreements identify the rights and responsibilities of parties, including the areas of local procurement. The coercive power of the state was limited within these agreements while the international operators decide on local sourcing based on considerations of price, quality and in accordance with their internal governance procedures. In contrast, national oil companies (that are owned by the state) were important in inducing the emergence of local oilfield equipment producers. Foreign oil companies are subject to regulations stated in their contracts on subsoil use and have also direct obligations on local sourcing.

In the mid 1990s the oil industry in Kazakhstan faced an acute shortage of oilfield equipment: the existing technical capacity was outdated and required modernization in order to keep oil production going. At that time the national oil company Kazakhoil had been created to represent state interests in the oil industry, including a technological upgrade of the industry. Kazakhoil introduced a strategy for the development of the oil and gas machinery industry and the creation of a modern technological base for the manufacturing of oilfield equipment. In 1997 Kazakhoil introduced its Corporate Strategy on development of oil and gas machinery in the Republic of Kazakhstan until 2000. The Corporate Strategy was based on the analysis of the demand for oilfield equipment, an assessment of technical capabilities and the production

⁴⁴ <https://www.zakon.kz/4446983-kajjrgeldy-kabyldin-kazmunajjgaz-delaet.html> , accessed on 15 July 2020

potential of local machine-building plants. The Corporate Strategy included pilot tests for equipment and introduced procedures for the development of technical documentation and the hand-over of finished products (Abdrakhmanov and Tashmetov, 2001).

The program gave impetus to the development of domestic oilfield equipment and allowed many local enterprises, not only to survive under conditions of intense competition in the market but also to develop successfully. The procedure on engaging a local supplier was based on the assessment of the national oil company's need for new types of equipment, then among all the machine-building enterprises in Kazakhstan a specific producer is determined depending on the production potential and technical capabilities for the development of this type of equipment. Then rounds of working meetings with representatives of the manufacturer are held directly at the oilfields or at the production site of the plant. Only after taking into account all concerns of the interested parties, the manufacturer is included in the program as a potential partner of the company. An industry expert explained: *"As part of this program, many enterprises began to produce new products. Customers, suppliers, and quantities - all were determined (in the program). In the early years everything was going fine - new products emerged, (industry players) have determined these by themselves. Now this program is no longer there, and we have joined the WTO, and any direct support for the local producers contradicts the WTO rules"* (Interview transcript 8). The main task of the Corporate Strategy was to organize the production of technical equipment that was urgently needed to ensure stabilization and increase the oil production at the oilfields operated by the national oil company: deep well pumps, lifting units for underground well repair, rigs, automated field loaders and spare parts for a wide range of oilfield equipment. In order to determine common interests and search for mutually beneficial forms of cooperation, Kazakhoil organized working meetings with heads of regional administrations (akims) and representatives of enterprises in the regions. An industry expert explained how this proceeded: *"There were two persons - the Vice-President of Kazakhoil and the head of Department of the company. These two persons played a crucial role in the development of the oilfield equipment industry in Kazakhstan. This relates to the question of the role of personality in the history. They were not {business} leaders, they simply were very reliable government officials. They were given a task, they began to visit enterprises and provided advice to our enterprises what they could produce and how they*

could do that. They helped the enterprises of the North Kazakhstan region - in Petropavlovsk. There was a cluster of machinery enterprises for the defense industry. Now they have mastered a wide and comprehensive range of machinery products for the oil and gas sector and there are more than 100, maybe more than 200 items being produced.” (Interview transcript 29)

By 2000, Kazakhoil became one of the leading oil companies in terms of procurement orders placed at local industrial enterprises. The company provided proposals to the government on ways to address issues related to the development of oilfield equipment production facilities based in Karaganda, North Kazakhstan and Almaty regions – these are still the main regional producers of oilfield machinery. As a result of the implementation of the Corporate Strategy there was an increase in the value of local contracts indicating increased production capacity. In 1998 the total value of delivered contracts amounted to 3.7 million US dollars, of which nearly a half (47 percent) or 1.7 million US dollars was the share of the Kazakhoil. In 1999 out of 4.8 million US dollars contract value the share of the company accounted for 52 percent or 2.5 million US dollars. By 2000 the value of contracts with domestic producers reached the level of 27.8 million US dollars, of which 66 percent or 18.3 million US dollars was the share of Kazakhoil. In the first half of 2001, the direct value of contracts with domestic producers amounted to 23.7 million US dollars. Following the example of Kazakhoil, other oil companies began to actively procure from local producers large lifting units with a capacity of 40 tons, cementing units and other equipment. There was also progress in the production of more specific types of equipment. For example, in 1998 the company purchased 200 pieces of deep well pumps from domestic producers, in 2000 - already 2,796, and in 2001 – 2,525 sets. Production of rigs in 1998 was not mastered at local plants, but by 1999 already 3 sets were made for Kazakhoil. In 2000 domestic producers supplied 20 rigs and in 2001 they reached 70 pieces. The progress is obvious and several local plants reached high shares of oilfield equipment in their production assortment: in Petropavlovsk region - Munaymash plant (90 percent), Petropavlovsky Zavod Tyajelogo Mashinostroenia (60 percent), Kirov plant (60 percent); in Almaty region: Instalcon (40 percent), Almatinskiy Zavod Tyajelogo Mashinostroenia (30 percent), GidroMash-Orion (60 percent). Hence, almost all large machine-building enterprises of the country have mastered the production of oil and gas equipment. The second stage of the Corporate Strategy was

introduced in 2000 and was aimed at increasing the volume of output in the oilfield equipment sector. The priority of the Corporate Strategy was on development of new types of equipment. To support product development, the company provided technical support in the form of attracting new technologies and *know-how*, exchange of information about the specifics of the oil production process and the operational factors that must be taken into account in the manufacture of equipment and its adaptation to specific conditions. To ensure a smooth operation and maintenance service for the supplied equipment, domestic producers were fostered to specialize in the production of spare parts, which further stimulated local production and brought local suppliers in to maintenance and service. Despite the progress achieved, there were still hurdles to further development of the industry: (1) many types of products were still not produced in the country (e.g. pipes, tubes etc.); and (2) specific types of steel suitable for production of oilfield equipment were not produced locally (Abdrakhmanov and Tashmetov, 2001)⁴⁵.

The Corporate Strategy of Kazakhoil was an important step in the initiating the local supply of oilfield equipment. This industry is now intensely competing with international contractors and demands high level of innovation and skills to address the specific needs of the customers. In most cases, contractors are constantly dependent on the oil operators and contracts become highly relational and long-term. In this sense, it was predictable that international operators would bring their trusted supply contractors with them to develop the big projects in Kazakhstan. At the same time, suppliers are highly vulnerable to changes in economic conditions, development phases of the project, cost structure of the lead oil firm and are less resilient compared to oil companies. Thus, the task of the national oil company was to act as a bastion for local suppliers.

Kazakhoil played a critical role in initiating the emergence of new industrial manufacturers. There were no power constraints as Kazakhoil is state-owned while the state has the authority to create a supportive regulatory regime. Nowadays, there are many local oil and gas equipment producers that value business relationships with Kazmunaigas, which was created in 2002 from the merger of Kazakhoil with the national Oil and Gas transportation company, as a milestone in their business development and continue to work with it even today. As

⁴⁵ <http://www.investkz.com/journals/28/388.html> , accessed on 25 July 2019

some industry participants note, Kazmunaigas has less complicated tendering procedures but at the same time a more supportive approach to local suppliers: future procurement plans are distributed in a timely manner and well in advance with full disclosure of technical details so that potential suppliers have a chance to prepare and plan their production process. At the same time, in contrast to the international oil operators, Kazmunaigas does not always require international product certification as local plants are used to work according to local technical standards (GOST). However, it is important to note that output at Kazmunaigas projects is declining because most are old oilfields that are close to exhaustion or require change in extraction technology and as a result the products of existing equipment suppliers will not be suitable to serve the task of production expansion if no innovation occurs. Hence, Kazmunaigas also depends on progress in extraction technologies and innovation in technological equipment to keep the production at current levels or expand when possible.

Further development of the oilfield equipment industry is associated with industrial policy measures. The Strategy for industrial-innovative development for 2003-2015 was based on the analysis of the existing transformative potential of the economic structure. The Strategy identified priority non-resource industries for promotion and the oilfield equipment industry was among them. The increasing volume of investments in the oil and gas industry in Kazakhstan was considered as a favorable environment for diversification of the economic structure. It was expected that investors intended to invest more than 80 billion US dollars in the development of oil production. These investments to be used for the creation of production infrastructure and social facilities, and a wide range of goods and services could be produced in Kazakhstan to satisfy the demand. In this respect, the state saw its leading role to establish the links between the extractive and non-extractive industries. The main tool to support development of the oilfield equipment industry was through the placement of state orders (*goszakupki*). The state orders system is based on defining the medium and long-term demand of the state bodies, national companies, organizations with state participation, as well as other companies subject to regulation on public procurement. The demand is then reflected in the procurements plans of these organizations and coordinated with the authorized state bodies. The purchase of goods and services from foreign suppliers when domestic production is in place requires justification. The other industrial policy

tool was to require foreign suppliers to transfer and establish in Kazakhstan the production facilities for goods and services purchased by Kazakh organizations on a permanent basis and in large volumes.

The rise of local content and the government's active industrial policy contributed further to support the industry development. In 2010, as a part of implementation of the 1IIP, the Program on local content development was introduced. The Local Content Program (Government Decree 1135 from 29th October 2010) specified the types of equipment, order amounts and producers to which orders potentially could be placed. The types of equipment are identified based on the data for imports of industrial goods. The idea was to organize local production of these industrial goods and intensify the process of import substitution of highly demanded industrial goods in Kazakhstan⁴⁶. The task was to provide domestic producers with long-term orders. In the 2IIP, the oilfield equipment industry was among the priority sectors and its development has been supported through focus on the production of specific types of equipment. The industrial policy is aimed at the creation of strong business relationships between resource extraction projects and local equipment suppliers. Since Kazakhstan has joined the WTO it no longer has the right to establish requirements for prioritization of local producers of equipment. These also apply to the use of local content rules – one of the major tools in the promotion of local production. Overall, as a result of all the actions the new industry emerged and its development progress in terms of nominal output value is captured in Figure 8.

Because the oilfield equipment combines different types of goods there is the generic indicator - special purpose equipment, not included in other groups – that aggregates industry data for all products. The only data item that is explicitly defined in national statistics relates to oilfield equipment used for exploration and production (e.g. pumping units). However, even this limited historical data clearly captures the fall in industry output at the time of crises: the financial crisis and the oil price plunge. The industry recovered from the oil price decline and is supported by ongoing expansion in oil projects, including the three major oilfields.

⁴⁶ Program on local content development in Kazakhstan for 2010-2014 via <http://adilet.zan.kz/rus/docs/P1000001135>, accessed on 27 December 2019

Figure 8: Special purpose and oilfield equipment output in Kazakhstan, million US dollars, 1998-2018

Source: <https://stat.gov.kz> official web-site of Statistics Committee of Kazakhstan, accessed on 15 April 2018

Despite the impressive growth of the oilfield equipment industry it is still largely import-dependent. As reported by the Union of Machinery Producers of Kazakhstan, the reasons for high imports have systemic nature and are rooted in the overall low competitiveness of local producers, absence of local production capacities of certain types of steel, high level of moral and physical depreciation of capital funds, high deficit of qualified local staff as well as low attractiveness of engineering profession in the country. The share of machinery imports in procurement of oil companies is around 88 percent.⁴⁷ Most imports arrive for the development projects at major oilfields. Today around 60-70 percent of total national export is mostly minerals, while around 40 percent of total national imports are all types of machinery and equipment. Because of these three large projects, Kazakhstan is among the top markets for oilfield equipment. According to data reported by the Ministry of industry, domestic production of oil and gas equipment

⁴⁷ <https://primeminister.kz/ru/news/reviews/mashinostroenie-v-kazahstane-s-2000-goda-obem-proizvodstva-uvelichilsya-v-24-raza> , accessed 23 July 2020

in 2017 reached 1.8 billion tenge (378.42 million US dollars), while the domestic market size of this equipment estimated in the same year was at 21.2 billion tenge (around 6 billion US dollars), less than 10 percent of existing demand could be satisfied by domestic production even at full production capacity. The major share of oil and gas equipment is imported to meet the demand of the ongoing expansion of big oil projects.

Still, not all of the oilfield equipment produced locally can cover certain demands of the major subsoil users. This is because subsoil users decide what specific extraction technology they intend to use and determine the choice of equipment at an early stage of planning the project. Nowadays, the oil and gas industry, by and large, already use the most recent scientific developments that are available and seek ways to move in line with technological progress and apply technological innovations as much as possible in their production processes. For example, around the globe there are talks on “digital mining facilities” that use all the advancements of Industry 4.0. At the same time, there are only few global companies that have innovative and technological capacity and expertise to supply equipment for such huge projects (e.g. General Electric, Halliburton, Schlumberger, etc.).

Projects in the Caspian region are very large and complex, in some cases production started a long time ago and the depth of wells is over 1,000 meters. In the case of offshore oilfields, the depth reaches more than 4,000 meters. The deeper the operations go under the ground, the more abnormal mining conditions arise and there is a need for other specific materials, specialists, and equipment. In addition, there is a high level of sulfur in the oil, and abnormally high pressure due to the depth of wells. Also, in the case of offshore production - it is happening in the part of the Caspian Sea – it freezes during winter. These technological and environmental complexities require the use of reliable and advanced equipment. If we take the three large projects, based on the specifics of these fields - high pressure, temperature change, acids and other chemical elements that affect the equipment and materials, only a small part of the equipment that meet the required standard is produced in Kazakhstan while the rest is mainly unique equipment that comes from global suppliers. When it comes to some critical equipment – e.g. compressors - they all are imported. An industry expert explained: *“Our equipment that is supplied locally, most probably is not the primary one, it is additional, and it is produced here. In case of all necessary intermediate initial inputs – like steel - they all are*

also imported. When it comes to our local producers, not all plants can produce the required intermediate materials. There are certain shortages on the raw materials and technological base on which to make the final equipment. Not all plants can produce it, there is not enough specific skills, technical facilities, and specialists that can create them" (Interview transcript 3). Though the oil industry is very conservative it is still a technologically dynamic industry. This implies that local suppliers also have to at least follow the trend in technology innovation to enter the supply chain.

There are several internationally competitive local companies that appeared after the country became independent, but their number is still small. An industry expert described the current situation: *"There are competitive firms but not at the highest level. If we compare with international companies, in Kazakhstan only 7-8 companies meet international standards. All procurement is carried out according to international technical standards. There are few such local companies. Those industrial goods that do not have the required quality standard could not pass the quality check. ... Today it is hard to say that they {operators} are actively working with Kazakhstani enterprises. But the local companies themselves are also not always complying in terms of quality. Kazakhstani goods do not always meet the standards of quality."*(Interview transcript 1)

A weak local absorptive capacity allows the capturing of the "low hanging fruit" – non-technologically complex industrial goods. The strong local competition takes place for the supply of such equipment, while global suppliers provide most of the technologically advanced equipment. However, "the low hanging fruit" strategy is still beneficial if local firms have the capacity to upgrade over time, reach the high technological standards of leading firms and become either a direct supplier or subcontractor. Dynamic learning strategies could also bring firms to a progressive learning curve and help them to become more competitive. Supplying to international oil operators upgrades a company's profile in many ways. The local firm could start with the production of spare parts and gradually change to making the equipment itself. There are also opportunities for localized maintenance of primary equipment, like repair services, as the competence for producing this type of complex equipment could be missing. The successful local firms have also focused on building competitiveness against imports. There are a few success stories that point to the decisive role of international competitiveness and

commitments of local business owners to constant improvements and learning. Local firms that managed to enter the supply chain of international oil operators consider this as a take-off point to increasing their international competitiveness. One industry expert provided this useful illustration: *"If we hypothetically take the market as 100, roughly speaking 10 percent according to my subjective assessment are ready to compete. That is to say that they have a certain quality, competence, and desire. There is only a question of provision of additional financial support and some further support from the state or oil firms. There are some local companies that are close to this level. Foreign equipment producers that know this market are entering by creating joint ventures and building consortia. This industry segment is not large, but this is due to the fact that our enterprises focus on the domestic market and on local projects. If the company is aimed to export goods, there should be other things taken into consideration. Depending on that, those local suppliers who already work with large oil operators now, they have already gained some experience, know the requirements of western investors, large western companies, and they are capable also to start exporting. To go to export markets it is necessary to have the best competencies and capabilities."* (Interview transcript 3)

This situation, where only a small percentage of local supply companies can compete for oil and gas equipment, raises the question: why are a larger number of companies not accessing this market. We explore capacity constraints that limit the progress in developing the local industry for oilfield equipment in the next section.

6.2. Capacity constraints for the industry development and specific barriers to work with international operators

The 1IIP views oil and gas machinery and equipment as an industry that will develop from the existing demand and gradually to become an exporting industry. The path to such transition is envisaged to happen by building the competitiveness of domestic producers. The main issues that constrain development of local producers in the machinery industry in general as reflected in the 1IIP are: (1) strong technological gap; (2) low competitiveness of produced goods (price, quality and cost); (3) lack of connection to international producers and

access to engineering documentation; (4) low value of investments in the industry; (5) missing production cooperation between domestic producers (i.e. complementarity of investments); (6) depreciation of capital funds reaches in some cases 80 percent; (7) lack of qualified skills; (8) and low level of post-sale maintenance of machinery and equipment (State program, 2010)⁴⁸. In a separate state planning document - The Program on Machinery Industry development for 2010-2014 - the oil and gas machinery and equipment sector is considered as the first priority due to strong potential for its development based on high demand from oil companies. In addition to industry constraints mentioned in the 1IIP, the Program notes the following issues that holdback oil and gas machinery industry growth: (1) very narrow assortment; (2) low innovation in the industry; (3) low load of existing capacities; (4) unfair price policy of the leading steel producers toward local machinery producers; (5) lack of qualified staff both for production and administration processes; (6) underdeveloped infrastructure such as weak R&D laboratories, testing centers, missing technical standards, etc.; (7) very low production share of technology intensive goods; (8) many local producers continue to produce small scale and in a small batch that negatively affects economies of scale; and (9) lack of access to information about procurement plans (Government Decree 1002 from 30th September 2010)⁴⁹. In turn, the 2IIP targets widening of the product range produced by local plants as well as enhancing competitiveness and inclusion of local suppliers into global value chains. The 2IIP finds that the main industry constraints are: (1) low labor productivity of the industry; (2) inefficient monitoring of the local content; (3) low access to finance; (4) weak R&D in engineering; (5) weak price competitiveness of local producers due to existing tax and custom duties exemptions for oil operators; and (6) high entry barriers into the supply chain (State program, 2014).⁵⁰

⁴⁸ State program on accelerated industrial-innovative development of the Republic of Kazakhstan for 2010-2014 via <http://adilet.zan.kz/rus/docs/U100000958#z0> online database for legal documents, accessed on 13 June 2020

⁴⁹ Program on machinery industry development of the Republic of Kazakhstan for 2010-2014 via <http://adilet.zan.kz/rus/docs/P1000001002#z0> online database for legal documents, accessed on 13 June 2020

⁵⁰ State program on industrial-innovative development of the Republic of Kazakhstan for 2015-2019 via <http://adilet.zan.kz/rus/docs/U1400000874#z0> online database for legal documents, accessed on 13 June 2020

These industry-specific capacity constraints are also reflected in findings of academic researchers, though more at national level. For example, when it comes to technological change and total factor productivity Deliktas and Balcilar (2005) find that in the set of transition economies, including Kazakhstan, during the period of 1991-2000 it was negative. In Kazakhstan, the value was -4.1 percent indicating the technical regress. In turn, the technical regress also affected the total factor productivity during the same period, which declined by 1.26 percent. Mukhtarova et al. (2017) argue that a low level of innovation activity works as a stumbling block for technological progress and does not help the country to change production patterns and structure of the economy. Low innovation activity is rooted in a weak demand for innovations, the missing links between science, education and business, and insufficient funding of R&D activities both from the state and private agents. In their turn, Bozhko and Naizabekov (2017) explore whether there are sufficient personnel in the field of engineering and technologies available to achieve the targets of the 2IIP. The authors strongly argue that the existing educational system does not allow effective supply of qualified personnel in the field due to a range of reasons: (1) poor technical and material equipment of educational laboratories at main technical colleges; (2) the need to renew professional standards with reference to existing market conditions; (3) misalignment of educational programs in the field with the industry needs; and (4) weak practices on forecasting of the industry needs for specific professions (p. 409). In a similar study on labor market capacity to meet the industrialization agenda Orynassarova (2016) finds that industrial expansion leads to increased demand for skilled labor, specifically of engineering professions. The author finds that engineering labor force has a low distribution and one of the reasons is a high outflow due to emigration of technical experts outside of the country. Graduates in technical specializations do not fill up the outflow mainly due to the low number of university and college enrollments and consequently low graduation rates as well as weak training levels. The general conclusion that the author makes is that the engineering profession is in short supply to support the needs of the country's industrialization strategy.

In their public interviews, some industry experts also share their opinion on bottlenecks for the oil and gas machinery and equipment industry development. Key consumers of domestic oil and gas machinery and equipment products are oil enterprises in West

Kazakhstan, and more importantly, international oil operators. Though oil operators take an active part in supporting the local content policy and industrialization strategy of the country, there are strong issues that need to be resolved for the industry to continue to grow. The most pressing issue is the provision of currently missing raw materials to domestic plants. Local suppliers are highly dependent on imported raw materials and intermediate components. This is viewed as a major obstacles to the competitiveness of domestic plants in terms of technology and cost. For example, the estimated annual total demand of machine builders for high-quality steel grades is around 2 million tons, of which for metal castings - 300 thousand tons. There is a strong need for the development of base industries like steelmaking to give additional impetus to such industries like machinery and equipment. The other problem in industry development is the strong dependence on imported technologies. There is a strong need to increase technology transfer and innovation in the industry by cooperation with industry leaders and original equipment manufactures (OEM). This is perceived as the way for Kazakhstan to receive the latest technologies in the field of oil and gas machinery and equipment and create a modern, globally competitive industry. Local businesses will have to integrate into GVCs, increase exports of new products, and move up along the value addition and maximize the extent of products processing.⁵¹

One of the major problems in the industry that is constantly reported to the government by the local producers are either missing or very low number of procurement contracts to three main oil operators – TCO, NCOC and KPO. At the same time, oil operators work with a range of local producers of specific goods and take actions to place procurement orders with domestic machinery and equipment plants. The oil operators work through trial orders as well as provide information about the future procurement needs. In turn, oil operators inform that local producers sometimes do not show interest in mastering the production of seemingly relatively simple goods, despite the possibility of an ensured order for several years in advance. Hence, there is the situation of mutual accusation of reluctance to take cooperative actions from both sides – demand and supply. As reported by the local consulting firm the Center for Strategic Initiatives, the

⁵¹ Public interview of Pshembayev Meiram, member of the Majilis, Head of public council for entrepreneurship development in Nur-Otan party via <https://liter.kz/polozhitelnaya-dinamika-razvitiya-nef/> , accessed on 25 July 2020

reasons for low participation of local producers in the supply of oil and gas machinery and equipment to oil operators are manifold. The first and main reason is weak competitiveness of locally produced items due to low quality and that items do not comply with technical and quality standards of the oil operators. Second, most often local manufacturers do not have international certifications and lack technical specialists who are skilled to introduce international standards. Industry experts report that there is a long-standing issue of aligning local technical standard with the international standard. In most cases local manufacturers refer to Kazakhstan's quality standards while oil operators rely in their operations on international specifications. As a result, oil operators continue using of time-tested internationally certified imported materials and components that have proven reliability and long service. In the meantime, local factories in order to introduce the international certification need to change their supply chain on raw materials and components (e.g. special types of steel) and have to negotiate with foreign manufacturers and receive higher costs relative to the more familiar Russian or Chinese materials. Third reason is the issue of trust. Oil operators have weak trust in capacity and capabilities of local suppliers. Oil operators deal with highly acidic environment in production of oil and require stable functioning equipment. Any accident or renovation is extremely costly by all concerned. Oil operators observe the technical stance of some local plants and do not always see the potential for production of equipment of the required quality. In addition to this, there were cases when local producers are late to deliver and impose high risks to operations of the oil operator. Next, lack of business and administration skills as well as poor quality of tendering documentation submitted by local producers. It is often that local producers operate in a receiving mode and improve the documentation when there is a request from the oil operator. Weak preparation of market research information and tender offers prepared by inexperienced specialists substantially reduce the chances to receive procurement contracts. Last but not least, many local producers continue to rely on state orders and guided procurement from the national oil companies. It is also the case that local producers are not willing to deal with the modernization, search for additional funds, and introduce new technologies while it is much easier to complain about missing orders to authorities.⁵²

⁵² media article from electronic magazine in Kazakhstan:

Beyond the already mentioned industry development issues, this section examines the specific constraints of local suppliers to engage with international oil operators. Operators are international consortiums, where lead oil firms operate in accordance with their own procedures to comply with international standards that govern all areas of their operations with the most emphasis on safety and environment. Thus, procurement contracts of operators with suppliers of main equipment are closely connected and stable and are driven by international standards of operation. This makes access of local suppliers to this market very difficult and limited. Operators demand technologically comprehensive products from suppliers that can deliver the expected level of safety, quality, and timing in accordance with international standards; are certified accordingly (e.g. for pipelines the steel has to be of certain grade); and have qualified personnel who can deal with all the issues that might arise during use of the equipment. Examples of a fire accident at Tengiz and the pipeline leak in Kashagan point to the fact that any mistakes are costly economically and most importantly environmentally. Shareholders of international oil operators are internationally active lead oil firms and for them it is important that the organization of the production process goes according to international technical, environmental and safety standards. Pressured by international society to support sustainable economic development and take actions to mitigate climate change, environmental responsibility becomes an integral part of any profit maximization strategy of these lead oil firms. At the same time, production processes need to be in line with the schedule of works. Lead oil firms need to stay not only in the technological corridor but also be in control of logistics, management of suppliers, operational standards, etc.

Tendering procedures of the oil operator are its internal rules and the state capacity to intervene on these is limited for two main reasons. First of all, the risk of *promoting losers* is very costly. Secondly, the state does not have enough resources to decide on the technical capacity, productions processes of local producers and to judge to what extent these processes comply with international standards and are technologically consistent. In this case, the distribution of rents from oil and gas extraction to the local economy flows in two ways. First, the

state receives direct payments from operators in the form of resource rents – taxes, royalties, and other payments. Second, the state delegates its authority to redistribute further rents from extraction of national wealth to operators in accordance with their internal governance rules that they follow since it is expected that operators will always choose the most competitive supplier in all means and that competition is fair. In this sense, to capture the positive spillover from the procurement of oil companies, there should be enough local absorptive capacity in place.

The last, but not least factor, that has a strong influence on capturing the spillovers from oil extraction, is a determination and desire of local suppliers to become and stay competitive, keep upgrading and changing themselves for the better, and the readiness for constant learning. It is, first-of-all, this aspiration of local entrepreneurs and their willingness to find their own niche in this market that plays a role. Local suppliers have to be honest with themselves when answering the question: have they done enough in order to attract interest and stay competitive? This is a very important question because there are areas of responsibility of entrepreneurs only and neither the state nor oil operators could do it for them. For example, there could be language barriers or marketing difficulties that require organizational and managerial decisions. Building business relationships with lead oil firms requires time, leadership and commitment. Local business has to convince subsoil users that it can comply with the high standards that they require. An industry expert says: *“Enterprises working in oilfield equipment are of large and medium size. In total there are about 100 firms or maybe a little more, but the market is large. I know that not all plants are 100 percent loaded and customers do not load them fully with contracts, even when they have to. But not all enterprises try to develop further, take out investment loans, they do not have funds for business development, though instruments to support modernization are there.”* (Interview transcript 21)

Overall, the development of the industry is dependent on solving the *chicken-or-egg* dilemma. When the government demands from international oil operators higher levels of local sourcing of goods, international oil operators have their own procedures to choose the supplier. The market research undertaken by oil operators during the tender process includes not only screening the technical documentation but also site visits. There are cases when the plant is old and cannot produce the goods of required quality and price. In this setting the oil

operator cannot take the risk and place the order. On the other hand, local suppliers in the absence of orders have no economic grounds to invest in production of specific equipment. A state representative explains: *"It's like a "chicken-or-egg" situation: they {operators} say - we are ready to buy from you, but you are not technologically ready and the quality level does not comply with international standards. They {operators} are also responsible in front of their shareholders for timely delivery of projects and smooth operation. The process is not simple. It is a very complex issue to become accredited as a supplier."* (Interview transcript 15)

An examination of the constraints that create this *chicken-or-egg* dilemma provides more understanding on how the issue could be treated.

6.2.1. Weak economies of scale and high production cost

Based on the linkages theory, development of supplying industries requires a strong demand from extractive industries. Undoubtedly, oil operators create demand for oil and gas equipment that could be supplied internationally or locally. When it comes to local production, the main question is to what extent this demand is sufficient enough to initiate a deep and large-scale localization. As suggested by unbalanced growth theory, if there is a strong demand and local manufacturers think they can meet this demand, they would begin to produce goods anyway. However, it looks like the volume of demand is not enough to create the impetus for installation of production lines, unless the machinery and equipment is purchased with some regularity, e.g. on an annual basis. To achieve the required scale of production, it is possible to export to neighboring countries. But entrance to neighboring markets, e.g. Russia or China, is difficult because these countries have a much more developed industrial structures. A state agency representative explains the process: *"We analyze procurement plans of large enterprises, identify products with constant demand, that happens annually, we also check if there are products with export potential, we look for our companies that could launch production. The work is quite complicated – 80-90% of our*

enterprises are not ready even to start production, it is all imported, I'm talking here about machinery.” (Interview transcript 18)

Farole and Winkler (2014) note that firm size positively relates to the local firm's capacity to absorb FDI spillovers and larger firms are better positioned to compete with international competitors. This is because firm size is positively correlated with productivity for several reasons: (1) better ability to comply with supply standards and volume requirements; (2) better chances to attract skilled workers; and (3) greater visibility in the domestic market. However, even a smaller size firm could benefit from FDI, if they have a greater proportion of skilled workers. Apart from firm size, industry size is also important as it provides opportunities for scaling.

According to national statistics, at the end of 2018 there were 8,264 active enterprises in manufacturing industry, of which the number of small size enterprises (with the number of employees less than 100) was 7,552, medium size enterprises (with employees number between 101 and 250) – 459, and large enterprises was 253.⁵³ Thus, the small size enterprises are dominating the number of manufacturing enterprises.

However, even large enterprises are struggling to compete due to scale constraints. To start a production line with new equipment a trial order could be placed. But in most cases requests even for a trial batch are so small that it is impractical to produce it and even less plausible to apply for international certification, which is additionally very costly. As one local producer explained: *“How can I supply equipment cheaper? My price will be more expensive... I explain - I am a new supplier, and to make this trial batch, we need to buy the machines, to invest we take bank credit, we hire new personnel, we pay for training and for utilities - water, gas, light. I can't sell it cheaper because I have to pay salaries and the bank credit. And to bring the raw material – I also paid taxes and custom duties. Already at the beginning – we are not competitive and a trial order of 500 pieces does not allow me to buy the steel on a wholesale price and transport it. All these issues are outside the responsibility of the customer, nobody will give a big contract, and all risks are on local producers... Costs are high. The requirements are also high - operators demand quality, but they also must understand that it is expensive, it is hard for us, we need to import many things, the same machines, welding materials.” (Interview transcript 26)*

⁵³ <https://stat.gov.kz>, accessed on 1 February 2020

Hence, it turns out that the size of actual demand coming from extraction operations is not enough and many local production projects are not profitable initially to install production lines given weak economies of scale. At the same time, operators observe this situation and direct their demand abroad to reputable suppliers. A vicious circle of no economies of scale continues further. Thus, operators have to import, because in Kazakhstan placing an order of specific equipment is equal to building a new plant from scratch and to reach some level of profitability it requires much stronger economies of scale than is currently available and as a result imports are cheaper in terms of timing, effort, and price. An industry expert explains: *"If we consider the cost of production of goods here, the equipment made in Houston and delivered to Tengiz on average is 10-20% cheaper than what is made in Kazakhstan. It does not always turn out that TCO is able to buy cheaper locally than it is offered from abroad. TCO will always say: with equal quality we buy in Kazakhstan, but the second deciding factor is always the price."* (Interview transcript 14)

The exit from this vicious circle calls for collaboration among operators to jointly create adequate and sustained volume of demand to facilitate the installation of new production lines and attract investments, both international and local, in building local supply capability. Once sufficient demand is in place, partnerships with the leading original equipment manufacturers is one way of upgrading local capacity. It must become economically feasible for them to create production lines here rather than supplying directly from abroad.

However, installing production facilities require consideration of the production process and costs associated with it. Here the first issue raised by local producers is again the lack of raw materials (i.e. steel of required quality) that are imported and this raises production costs substantially. Large operators require use of such type of steel that is not produced locally or even in geographically proximate Russia. A local producer says: *"it is very expensive to start producing it in-house. We can buy it three times cheaper in Italy"* (Interview transcript 21). On the other hand, initiating steel production of the required quality assumes again the presence of economies of scale. Lack of essential raw and intermediate components is holding back local steel production. This in turn leads to partially localized production characterized with a high level of imports of materials and local assembling manufacturing. Although it is impractical to try to reach 100 percent localization and produce absolutely all types of equipment and machinery domestically,

some level of localization is critical to achieve sensible progress in industrial development and induce increased diversification. In this case, the linkage theory could be a guiding principle in the promotion of industrial development as the direction of state support is guided by the industry's development needs. The state in turn could coordinate investments in complementary industries (i.e. steelmaking).

Thus, weak economies of scale limits domestic technological catch-up of the industry and keeps local producers at assemble or maintenance services level. Although, services are also important, their transformative impact is still lower compared to manufacturing (here we are not referring to knowledge intensive services like engineering, scientific research, etc.). In countries like Kazakhstan, which have a small domestic market, are land-locked and have neighboring countries with more advanced industrial structures, the demand side deficiency becomes self-reinforcing and keeps constraining industrial development with the outcome that industrial goods continue to be supplied from abroad.

At the same time, weak economies of scale offer more opportunities to small-scale producers rather than large industrial plants with production lines that require a large production volume both for economic and technical reasons. Hence, the main decision is on whether to have a large (maybe monopolist) plant or many local workshops - is a debatable question. But it looks like local conditions do not provide the grounds for the emergence of large-scale industrial entities that could drive the industrial transformation of the country. Overall, solving this dilemma calls for industrial policy and better coordination between markets players.

The normative case for industrial policy assumes the presence of market failures. The source of market failure in the case of oilfield equipment in Kazakhstan is related to coordination failure. Coordination failure arises in a situation when a specific sector (i.e. manufacturing) needs to reach some critical size for firms to enter. For a firm it becomes profitable to invest in this specific sector only if enough firms simultaneously invest in other sectors. The task of industrial policy in this case is to coordinate complementarity of investments because individual economic agents could fail to invest in a coordinated manner when they act in their own interest. Cherif et al. (2016) suggest that mineral economies are plagued more by market failures rather than government failure. Market failures prevent mineral economies from developing their tradables sectors. The

authors suggest that in the case of mineral rich economies the market failures occur due to skewed incentive structures: the tradables sector is exposed to international competition and requires years of investment while the returns are highly uncertain; non-tradables sector, in contrast, is ensured by oil revenues and looks more attractive to enter. Thus, to change the incentive structure, industrial policy can play a crucial role in developing tradables sectors. The scope of the industrial policy could be not only to address weak economies of scale, deal with coordination failures but also to close the technological gap – the other important constraint to industry development.

6.2.2. Technological gap

The classic Solow model (Solow, 1956) indicates that technological progress is the main driver of GDP growth. At the same time, the experience of late-industrializers indicate that in addition to technological progress there are other sources of growth – capital accumulation, productivity gains and innovation systems. All four factors are interlinked and affect the growth process in a combined manner: technological catch-up does not happen independently from capital accumulation as it is embodied in plant and equipment, and also affects the production practices that in turn result in productivity gains. The empirical evidence on productivity gains in advanced economies suggests that these are delivered through rising expenditures on R&D and increasing educational qualifications of the workforce. Still, in the absence of technological change, the productivity growth tempo diminishes. For example, productivity gains between the mid-1990s and 2000 in the US were driven by investment in ICT while European and Asian regions were lagging behind due to lower competitiveness of these sectors (Yusuf, 2014).

As summarized by Aghion (2016) the sources of productivity growth are determined by the Schumpeterian paradigm that evolves around four main ideas. The first indicates that productivity growth is delivered by profit-motivated innovations that arrive in different forms: process innovations; product innovations; and organizational innovations. Policies in this area are called to ensure intellectual property rights, foster R&D activities (e.g. provision of tax credits), and

development of research universities. The second idea refers to the process of creative destruction when new innovations make the old innovations obsolete and foster the process of reallocation. The third is about the difference between frontier and imitative innovations that rely on different sets of policies. The fourth idea relates to Schumpeterian waves – big technological leaps that result in the diffusion of new “general-purpose technologies” (i.e. electricity, ICT, etc.) to various sectors of the economy.

When it comes to mineral economies the success or failure of diversification efforts depends both on the initial technological gap and the size of the oil windfalls. Cherif et al. (2016) came to this conclusion by analyzing the development paths of oil exporters over time. They define the initial level of technology in the oil exporting country by the real value of machinery and transport equipment exports per capita in 1970. This value is plotted against average per capita oil revenues during 1970-2012. Oil exporters with low oil revenues and high technology (i.e. Canada) managed to expand the technological level further. Norway, in contrast, defined as a country with high oil revenues and high technology, fell below its initial technology level and did not increase its exports of technological goods. Oil exporters with low technology and high oil revenues also did not increase their exports, with the exception of the United Arab Emirates and Oman that managed to reach the technological export level of US in 1970. Countries with low technologies and low oil revenues – Malaysia, Indonesia, and Mexico – managed to successfully diversify their economies. The authors argue that high-tech economies were better prepared to withstand the Dutch disease as oil revenues increased. Still, Norway, despite its technological sophistication experienced a steady decline in machinery exports due to an increased wages rate inflated by oil revenues. However, policies pursued in low-technology and low oil revenue countries put them on a development path and point to the decisive role of industrial policy.

For Kazakhstan the pathway to an innovative economy lies in increasing the quality of human capital that is achieved mainly through excellence in schooling by: (1) improved teaching quality; (2) better facilities at learning organizations – books, computers, etc.; (3) creating a cultural environment that attaches great significance to learning and scholastic achievements; and (4) preschool education. Thus, the quality of schools and universities is one of the main pillars of Kazakhstan’s national innovation system. The other important pillar relates to a

greater role of firms as innovators. Research-oriented firms could drive economic diversification as they increase their competitiveness, enhance productivity and affect their own supply chain through diffusion of learning. At the same time, research universities are the other anchoring factor in the innovation system as they drive advancement in general science. To foster the emergence of such a supportive national innovation system, the state could be a catalyst by creating guidelines on technological/industrial development; investing in costly R&D projects and providing training (Yusuf, 2014).

As discussed, subsoil users demand state-of-the-art technological production. In most cases local producers employ imported technological solutions or rely on technological transfers that takes time. Adaptation to new technologies in manufacturing facilities does not happen fast and time works as a constraining factor. For example, even if the tender is announced one year in advance, the technological transfer (that is introduction of new production lines) is sometimes much longer. It is necessary to bring all technological solutions to the required standards, train people, prepare production facilities, etc. Thus, a dramatic leap in technological capacity is not fast and it requires the accumulation of knowledge and policies to bring the science in line with industry demands. Without policies to support technological catch-up, local producers can take only simple and small steps to increase their performance. At the same time, in simple works the competition is intense, while development of any technologically complex good requires collaboration between business and science. An industry expert suggested: *"We need to modernize the plants. Such things cannot be solved immediately, it is necessary to find a balance between the demand, types of goods, the scientific community, which also should do something, and the business partner."* (Interview transcript 14)

In Kazakhstan, the weak link between business and science is one of the critical constraints that limit local absorptive capacity. However, this is a general impediment that exists beyond the oil and gas equipment industry. The linkage theory argues that the more technologically distant is the input industry to its customer, the harder it is for linkages to emerge. Overcoming this constraint requires the creation of better links between industry and research universities that is currently missing. A local producer explains: *"As in the Soviet times, I would suggest that our universities and research centers be partially assigned to the large enterprises. For example, they could inspect the*

equipment requirements for Karachaganak and provide proposal for design the way they see it, after they approved the design, we could process it, and offer where we would modernize or change something and we could come out with a ready project for something new, we can offer it as a scientific activity. Since we have separate universities, we have to conclude separate agreements, which is also good, but they are not interested in loading the enterprise, they are interested in their pure scientific activities and such research orientation is not in our interest" (Interview transcript 10)

Overall, the level of innovativeness in Kazakhstan remains relatively weak. This is not only reflected in the low sophistication in exports but also in the relative modest investment in R&D. The expenditure on R&D in 2016 in Kazakhstan was less than 0.5 percent of GDP while the OECD average was around 2.5 percent. In 2016, public spending on education was around 3 percent of GDP while the average for OECD countries was above 5 percent (OECD, 2019). In the Global Innovation Index for 2019 prepared by INSEAD, Kazakhstan is ranked 79 among 129 countries. The shift from a resource-led economy is constrained by low innovation activity. As Kurmanov et al. (2016) find the share of innovation-active firms in 2016 was at 8.1 percent of the total number of firms. Innovative SMEs contributed around 1.4 percent of value added in GDP in 2015. Weak innovational activity of firms is due to the general low innovative capacity of the enterprises as a consequence of the lack of funding and the lack of skilled people. The other important factor is low demand for innovation overall and the lack of information on the direction for innovations due to weak communication links within industry. A State agency representative explains Kazakhstan's level of technology as: *"The problem is that we are not yet ready to create our own technologies. We are in industry 2.0. We remain at the level of technology in Soviet times. In order to raise the level of own production it is necessary to invent own technologies and to localize them here. To build plants with the technologies it is necessary to connect with science. We have already learned how to do simple things but not the high-tech equipment. Other countries have their own inventions and own design bureaus. In simple things there is a lot of competition, and in technologically complex things - we need to develop our science"* (Interview transcript 6).

Thus, the technological gap and weak innovative capacity hinders the competitiveness of local suppliers. In order to close the technological gap innovations are required along all dimensions of

production activities – product innovations, process improvements and organizational innovations. This includes the introduction of international technological standards, new production technology, and increased qualification of people. All these innovations still need to fit within the price expectations of the customer. Thus, policies are required to support this process.

6.2.3. Limited access to finance

The importance of the financial system for economic development is a highly discussed topic in the academic literature. In mineral economies, financial development is also important as in other countries. However, the existing empirical evidence shows that resource-based economies tend to have smaller banking systems and less liquid capital markets relative to their per-capita level of income. In resource-rich economies financial deepening happens at a slower pace due to both lower demand for financial services and supply constraints that eventually result in a smaller financial system. At the same time, banks in resource-rich economies are better capitalized, more liquid and more profitable but this does not mean that there is better access to finance for consumers. Firms of all sizes in resource-rich economies use less external financing compared to other countries. Thus, there is a negative link between resource wealth and financial development. Policies to foster inclusive financial deepening are important to create incentives for market-based lending because the missing incentives are primarily sources of the lack of intermediation rather than the lack of resources (Beck, 2011).

These findings are in line with the case of Kazakhstan as firms face challenges in accessing the bank finance due to eligibility and affordability barriers that result in lower bank credit provided to the economy overall. High eligibility barriers indicate that banks are rationing the credit rather than pricing it against the risk profile of the firm. An industry expert suggested: *“Today the banking sector in Kazakhstan has accumulated certain financial resources but not as large as required and getting finance has its constraints. The cost is high, long-term money can be given only by the state institutions – like the Development Bank of Kazakhstan, but they have their own priorities.*

There is always a question of eligibility: providing collateral and guarantees. All these cost money too.” (Interview transcript 3)

Commodity booms affect the financial system in resource exporters. Beck and Poelhekke (2017) find that the volume of financial sector deposits declines in countries that experience unexpected resource windfalls. This finding is valid after controlling the level of financial development, inflation, growth of GDP and country fixed-effects. The authors also find that the volume of private sector lending also declines. Hence, the financial sector plays a smaller role in intermediating (absorbing windfalls) resource booms and resource-rich countries with less developed financial systems tend to have slower aggregate growth. At the same time, mineral booms result in increased government foreign assets and deposits with banks. In turn, increased government deposits result in higher government consumption but not in an increased volume of private lending. In particular, based on cross-country data, the doubling of a commodities price brings a decline in deposits growth by 3.4 percent but increases the growth of foreign assets by 9.6 percent and government deposits with the central banks by 19.3 percent with no increase in private lending. This finding indicates that resource booms undermine financial intermediation and hold mostly for countries with repressed financial systems. A more intuitive indication of these findings is that resource windfalls, because they are not absorbed by the financial system, might not lead to a decline in the cost of financing. The other intuition behind these findings is that direct government spending, instead of bank credit, might result in a higher number of white elephant projects, especially in countries with poor governance, and this substantially constrains the ability of resource-rich countries to follow a sustained growth path. Overall, the findings of Beck and Poelhekke (2017) are in line with linkage theory and indicate that the fiscal linkage has more chances to emerge and its transformative power largely depends on the ability of the state to invest its resource rents.

When it comes to Kazakhstan, both the financial depth and access to finance is limited. The access to finance is defined not only by the direct cost of funding but also on its affordability when it comes to associated costs. The access to finance in Kazakhstan seems to be constrained due to high costs. An industry expert says: *“The price of money in Kazakhstan cannot be compared to the price of money abroad. If we go into details on how the state supports this sector, what loans there are available – today there is no money on the market or they are*

very expensive, 16 percent rate... There is a very simple logic in place: to participate in the tender, you need to provide a bank guarantee. But not every company today can deliver a bank guarantee, because it is expensive. Not every company's balance sheet will allow the bank to issue such guarantee too.” (Interview transcript 28)

The banking system of Kazakhstan has never recovered from the financial crisis. The state provided a stimulus package and state loans to support failing commercial banks, and over the last 10 years the amount of state support exceeded 20 billion US dollars making the banking industry as the most subsidized sector in the economy. By the end of 2018, the size of the banking industry remains small with total bank assets at 43 percent of GDP and the share of credit portfolio in total bank assets at 54 percent. Bank credit to the economy declined dramatically and in 2018 it was 21 percent to GDP as shown in Figure 9.

Figure 9: Bank loans to the economy as a share of GDP (in %), 1998-2018

Source: <https://nationalbank.kz/ru> official web-site of National Bank of Kazakhstan, accessed on 5 November 2019

<https://stat.gov.kz> official web-site of Statistics Committee of Kazakhstan, accessed on 5 November 2019

When it comes to the allocation of credit across the sectors of the economy, there is an increasing allocation of bank credit to manufacturing. However, it is still much lower than the funds directed to the services sector – trade, logistics and ICT. Within the services

sector the biggest share has been for trade finance. Construction also used to have a larger share in the credit portfolio but after the financial crisis its share declined dramatically indicating the collapse of an asset bubble on the real estate market. The cost of financing indicated by the average interest rate on corporate bank loans provided has seen a declining rate but it still remains high at 11.7 percent in the national currency (KZT) and 5.2 percent in US dollars denominated loans as of December 2018. The change in the structure of the banks credit portfolio by types of industries (left axis) and the average interest rates on bank loans in national and foreign currencies (right axis) are presented in the Figure 10.

Figure 10: Bank credit portfolio by sectors of economy to GDP, in %, and bank loans interest rates in national and foreign currency

Source: <https://nationalbank.kz/ru> official web-site of National Bank of Kazakhstan, accessed on 5 November 2020

<https://stat.gov.kz> official web-site of Statistics Committee of Kazakhstan, accessed on 5 November 2020

The evidence indicates that the cost of capital in the country is very high despite continuing state efforts to provide cheap funding. All types of funding are in a great shortage – working capital and capital expenditure. Industrial manufacturing is a sector that relies heavily on external financing and requires long-term investments but access to

these is very limited. Overall, the financial system suffers from limited resources: deposits to GDP by the end of 2018 were at 27.4 percent share and are low relative to the per-capita income level of the country. A half of total deposits are corporate deposits, including the SOEs. At the same time the ratio of bank credit to deposit by the end of 2018 was 77 percent, indicating an undersupply of bank lending⁵⁴.

Thus, an underdeveloped financial system is one of the main constraints to the growth of non-resource industries and the private sector in general. The main unsolved issue is access to funding at an adequate (low) price and preferably with no currency risk, i.e. in national currency. At the same time the exchange rate fluctuations triggered by oil price volatility and other external factors have a destabilizing effect on entrepreneurs' intentions to enter into business since in most cases they will need to rely on imported equipment and technologies. An industry expert provides the view: *"It is very expensive for the company to get loans in Kazakhstan. The effective rate is very high. Bank credits are unavailable. Commercial banks look for their margins. State programs are ineffective now. It is very difficult to get long-term money."* (Interview transcript 1)

Apart from the banks, the capital market is also a potential source of funding. However, the securities market in Kazakhstan is illiquid and inactive due to constraints on both demand and supply side: lack of large institutional investors and an insufficient number of retail investors while larger firms could access international exchanges. The market capitalization in 2013 was around 15 percent of GDP. The insurance market, the other important source of long-term funds, is also unusually small with total assets at 2 percent of GDP in 2015. The sole pension fund is owned by the state and has accumulated around 12 percent of GDP in its assets by mid-2015 and is used to finance state programs through buying Ministry of Finance treasury bonds (OECD, 2017). In summary, all types of financing sources require further development, especially the ones aimed at venture financing, to provide both long- and short-term funding for expansion of manufacturing industries that are highly dependent on external financing. A representative from one state agency said: *"The private sector financing should receive further development on the first hand, this is venture financing, the securities market. Everything is interrelated."* (Interview transcript 4)

⁵⁴ <https://nationalbank.kz/ru>, accessed on 5 November 2020

In the context of oil exporters, financial development has a positive impact on the growth of the non-resource sector (Samargandi et al., 2014). When it comes to the role of financial development for international trade there is evidence based on the firm-level data from China that financial constraints negatively impact firm's export activity (Manova et al., 2015). On the other hand, there is the empirical evidence on the positive impact of financial development on entry of new firms in sectors that depend on external financing and firms of smaller size benefit the most. Most importantly, financial development supports the post-entry growth of firms in sectors that depend on external finance (Aghion et al., 2007). Summing-up, financial development could positively contribute to the promotion of the tradables sector in mineral economies. Hence, it is important to promote financial deepening in mineral economies.

6.2.4. High entry barriers to the market

Tordo et al. (2013) note that the oil and gas industry is overall highly capital intensive, technologically complex and is characterized by specialized inputs. These characteristics often work as barriers to local sourcing. The authors indicate that new entrants in the upstream oil and gas sector face a high level of market concentration, critical to achieve economies of scale and competitiveness. For example, the international market on drilling services and associated equipment was growing at 17.8 percent on average annually during 1999-2007. The market niches for directional drilling (Herfindahl-Hirschman Index (HHI)⁵⁵ – 1755), conventional logging (HHI – 2477), logging drilling the filling (HHI – 2694) are dominated by the top 3 players – Schlumberger, Baker Hughes, and Halliburton; for drilling bits (HHI – 2289) top 3 market players are Baker Hughes, Smith International, and National Oilwell Varco; for drilling muds (HHI – 2317) - the top 3 companies are Smith International, Halliburton, and Baker Hughes. The rapidly growing market for well lining and completion with an average annual

⁵⁵ Herfindahl-Hirschman Index measures the degree of market concentration. Highly concentrated markets are with HHI above 2500, while values below 100 refer to competitive markets.

growth rate at 18 percent over the same period is also highly concentrated. The top 3 players in niche for steel pipe of coating and production piping (HHI – 1743) are Tenaris, Vallourec and U.S. Steel; top 3 market players for completion equipment (HHI – 1954) are Baker Hughes, Halliburton and Schlumberger. When it comes to production and maintenance the top 3 surface equipment (HHI – 1571) providers are Cameron, FMC and Vetco, while for contract compression services (HHI – 3482) the top 3 players are Exterran Holdings, Compressor, and J-W. Hence, the authors conclude that to succeed in localization, it makes sense to support the development of subsectors with relatively low entry barriers (including low technological complexity and limited capital investment), so that local capacity could expand quickly and efficiently.

The ease of entry into any industry is determined by various factors. The central factor is the fixed costs – high sunk costs are a natural barrier to entry of new firms. The sunk costs, in turn, can be exogenous or endogenous, or both. Exogenous sunk costs refer to investments incurred to acquire production facilities (plants and equipment) and technology. This type of cost is not a choice variable for firms willing to enter. Endogenous sunk costs relate to R&D and other outlays that firms make to increase the perceived quality of the product. Endogenous sunk costs are choice variables for new entrants. In addition, there are switching costs and network externalities that also might be an obstacle to the entry of new firms, and consumers might not have incentives to switch to new suppliers. The switching costs arise when there are transaction costs from switching to a new supplier or when there are learning costs involved. The network effects relate to compatibility of new products with others as well as the introduction of standards for products (Motta, 2004).

It is important to note that very often oil operators have long-term sourcing arrangements for key equipment and supplies to secure lower prices, ensure quality and reliability of supplies. The main feature of global supply chains is that they are very well integrated and lock out local suppliers even when there is local capacity in place. In this situation, the policies facilitating integration of local producers in the contracting strategies of oil operators could play an important role (Tordo et al., 2013). Hence, apart from the general entry barriers to the industry itself, there are governance related entry barriers within the procurement system of oil operators. Procurement at international oil operators is a multi-stage procedure aimed to ensure timely provision

of goods and services required for operational activity. The exact procurement process varies depending on the internal procedures of each firm but there are common elements. Overall, procurement is a dynamic ongoing process. It usually starts with the detailed planning of the goods and services given the budget constraints, inventories level, and required quality of goods. These considerations form a basis for the development of a contracting strategy. Possibilities for local supply largely depend on a contracting (or procurement) strategy. Oil and gas projects are technologically complex, have high cost, operate under uncertainty (price volatility), and engage a large number of actors during the long lead-time. It is typical for the oil industry to have special governance mechanisms to deal with the complex procurement. An industry expert described the situation as: *“Large subsoil users employ complex procedures for pre-qualification and procurement procedures. Often they are closed. The state does not regulate the procurement procedures of large oil and gas companies, the government cannot help. It has no enforcement.”* (Interview transcript 19)

Olsen et al. (2005) investigates contracts and governance mechanisms for dealing with the complex procurement. With the development of the oil industry as projects become larger, oil firms changed to new contractual forms that primarily aimed at smoothing the coordination among the parties involved and reducing costs. In general, the authors distinguish three major forms of contracting arrangements: (1) individual contracts; (2) EPCI (engineering, procurement, construction and installation), and (3) project alliances. In individual contracts, the oil operator is responsible for overall planning and monitoring of the project and each contractor delivers its scope of works as defined in the individual contract. There could be a new contractor for each phase or task of the project, i.e. engineering, fabrication and installation. Under the EPCI framework, a main contractor coordinates and monitors subcontractors, while it is responsible for the entire product, phase or task. Compensation for a main contractor is defined as a mix of fixed prices, profit-related rates and reimbursable elements. A main subcontractor normally engages with subcontractors based on individual contracts. In a project alliance, an oil operator enters in to a partnership with several contractors by sharing risks, rewards, and resources. Under this framework the oil operator is an equal partner, rather than a customer. Within the project alliance contract, a special steering committee is created for coordination purposes. In individual contracts, the oil operator decides

how procurement is divided between contractors, and the oil operator and a main contractor jointly undertake coordination between phases of the project. Under EPCI a main contractor allocates the tasks between its own company and subcontractors. In a project alliance contract, participants jointly decide on the distribution of tasks and coordinate phases of the project (Olsen et al., 2005).

The contracting arrangement affects opportunities for local suppliers. For example, EPCI contractors in most cases turn to specialized goods and services providers (e.g. OEMs) that in turn might be willing to transfer some of the tasks to lower tier suppliers. At the same time, key suppliers can exercise some power through technology, long-term relationships or concentrated production activity that is highly specialized in a specific service or product. Strategic items are mostly negotiated through centralized procurement, while non-core items could be subcontracted (Farole and Winkler, 2014). Entrance to governance arrangements related to strategic procurement that is characterized by highly relational contracts based on trust is very hard for local suppliers. A state agency representative explained this from the point of view of local companies: *"It is difficult for local business to knock on the doors of large companies - customers. It is hard for our companies – SMEs – to access them: they have well-established relations, foreign management in these companies does not know our manufacturers, and they are used to work with some big names, companies, and do not often give our companies the opportunity to prove themselves. There are such problems. The issue existed even before, now the policy in TCO, KPO, NCOC is also changing"* (Interview transcript 6)

The important point to note is that the contracting strategy of the project by and large depends on the capacity of the local market. To collect the data on local technical capacity, oil operators engage in data collection through both market surveys and sending of questionnaires. During this process operators also share the information about the project. For example, the operator creates the procurement list of goods and services for the construction of the pipeline. The list includes all necessary parameters and required deliveries of different equipment. Based on the market screening and local technical capabilities, when the demand exceeds what the local market is capable to deliver, there is already an understanding that most of the product will be imported. This is due to the fact that the project implementation schedule does not in most cases allow time for the development of local capacity.

In addition to governance of the procurement process, there are technical requirements for goods that also work as an entry barrier. The oil industry uses various technical and organizational standards developed by different organizations or standardization bodies. The purpose of using industry standards among other things is to ensure the quality of goods and procedures for the delivery of services. There are specific standards related to oilfield equipment required by oil operators. American Petroleum Institute (API) is a standard-setting organization that develops, maintains and distributes consensus standards for the oil and gas industry. There are more than 700 API standards that cover various areas to ensure safety, assure quality, control costs and minimize confusion of industry operations. API certification is seen as an industrial quality standard that covers the production process of a good or a provision of specific services. The American Society of Mechanical Engineers (ASME) is the other standard-setting body that develops technical standards associated with mechanical engineering. To become a supplier in most cases international certification is required to assure quality of the product and consistency of its production method. However, obtaining certification is costly (hundreds of thousands of US dollars) and does not provide a guarantee for contract conclusion. A local producer described their experience: *"We face a number of barriers in terms of ASME standards – we once received the certification in 2008, but it did not provide us with the expected effect. The period during when it was valid there were no orders for us. Therefore, we canceled it, and in principle, we have enough {orders} with national companies for today. In the future, we of course will consider certification again."* (Interview transcript 16)

The need for certification, which is associated with the change in production processes, and requires training and organizational change, makes the process of supplier qualification very long and costly. The award of a supply contract is a multi-stage procedure and it starts with registration with the online systems of oil operators and filling in numerous forms for pre-qualification. During the pre-qualification phase there are site visits to check the quality and it is possible that the local supplier will need to upgrade its production facilities to satisfy the technical requirement. One local producer explained their experience: *"In fact, the process is very long. It started around 2007-2008 when KPO and TCO have learned about us for the first time, they made a visit. Unfortunately, in the first visit we did not receive the contract because*

those requirements for products were high, and we could not meet them. After we received the technical requirements, by trial and error, we found our mistakes, and have developed specific standards, we released a trial batch, tested it, then we again knocked at KPO and TCO doors. As a result, only in 2015 the TCO responded. After long negotiations, meetings, qualification procedures, and approving us as a potential supplier, the 2-days audit was carried out. We started to supply our products both directly and through their contractors, which are also important. In relation to KPO, the process still continues, and, unfortunately, has not yet been fruitful. A couple of days ago, we had KPO's visit, we successfully passed the technical audit, we hope for further negotiations, and invitations to tenders. I would like to see some trial orders" (Interview transcript 22)

Contracting strategies engaging local firms at early stages of the project are supportive to local sourcing. For example, for engineering, procurement, construction and management support services (EPCM) for the expansion project at Tengiz oilfield, the main contractor is a joint venture of international engineering service companies and local engineering institutes. The participation of local institutes at this stage allows the introduction of local suppliers in the procurement plans based on their knowledge of local producers.⁵⁶ Still, the human factor also plays a role in gaining the entry in the supply chain. Excluding any direct lobbying for specific suppliers during the tendering, it also might be the case when foreign experts responsible for the design of the project are not aware of local producers of equipment and so project engineering is organized from abroad. Changing or deviating technical documentation for the sake of engaging with local firms might cause additional transactions cost. Thus, incentives to engage with local suppliers sometimes are too weak already at the stage of project design.

6.2.5. Information asymmetry

Information asymmetry is a specific type of market inefficiency under which market players do not have full access to the information

⁵⁶https://www.rigzone.com/news/oil_gas/a/145582/tco_awards_epcm_support_services_deal_for_tengiz_expansion_project_to_kpvy/, accessed 6 December 2019

required for their decision-making. Information asymmetry together with coordination failure and knowledge externalities is a major source of market failure. Tordo et al. (2013) indicate that it is a common issue in the oil and gas industry. Even in countries that have mandatory minimum targets for the share of local goods and services in total procurement, the qualified local suppliers are not fully aware about supply opportunities because tendering processes and procedures of oil operators are designed to target international bidders. Additionally, even when the information on opportunities is open to local suppliers, the visibility of future demand could be still lacking and negatively affects the ability of local suppliers to make investment decisions to tap the future demand and become more competitive. In countries with a developed oil and gas industry, the information asymmetry is addressed both through regulatory requirements to improve transparency and non-regulatory approaches. Tordo et al. (2013) describes the experience of Brazil and Norway on eliminating imperfect information between local and foreign suppliers through non-regulatory approaches. In Brazil the government-led Program for the mobilization of the oil and gas industry (PROMINP) introduced in 2009 the web-site to provide information for equipment and components required for oil and gas projects. The site provides information about supply opportunities and encourages interaction between suppliers and buyers. Registered suppliers can disclose information about their products. The site is not open to importers and foreign suppliers. In Norway the Petro Arctic Supplier Association (PASA) facilitates information exchange between operators and local businesses through updates on project progress, qualification and training programs. Hence, removing the information asymmetry is an area for intervention that could bring great benefits to the local economy.

In Kazakhstan, procurement of oilfield equipment operates through tendering. The access to information on tendering opportunities works through the online notification system. At the same time, not all local companies have gone through this process and sometimes they fail to get registered themselves. The other question is how open is access to this information about tenders. It seems there are failures related to information access. Though there is some information about procurement plans, it is not sufficiently detailed to specify required technical solutions. To win the tender, the bid (i.e. commercial offer) must be accurate in technical details, and to prepare it correctly one needs to have the maximum amount of detailed

information, including technical specifications. Sometimes there are failures on these areas or there is a need for additional communication. However, oil operators do not always respond to additional requests in a timely manner and as a result local suppliers miss the tender due to the waiting time for a response. Sometimes local producers do not have the information about terms, technical documentation and related quality control procedures. The question is not on the cost of acquiring such information but that information is not accessible. This is the outcome of the existing contractual framework that defines procurement plans of operators as confidential information. This in turn creates the other issue related to overall marketing information: it is very hard to build the marketing strategy when there is not enough information about what kinds of equipment has been procured locally, what is the domestic output, etc. These issues complicate market analysis further and place local producers in an *informational vacuum* about marketing and production strategy. As a result, they are not ready for tenders. A local producer said: *"We do not see the demand that operators have, there is no list of purchased equipment. There is some general information, but specifically what equipment is necessary – technical requirements – these data are not available."* (Interview transcript 16)

There is also a problem of closed access to tenders. The evidence shows that to satisfy the requirements of operators one has to go through multi-level procedures starting from online registration and going to on-site technical audits. Once this is done expectations are that the orders will follow. But it looks like it is not always the case. Local firms are searching for large and stable orders in order to organize production facilities. Stable and sufficient demand is crucial. However, many local companies do not know what kind of tender will be arranged and do not have access to technical documentation. An industry expert commented: *"Many domestic companies are not ready to take risks, investing huge amounts of money in the constant modernization of their own production and marketing activities, when there are no guarantees in the form of a stable market. This creates uncertainty for Kazakh producers and is directly related to the pricing factor and "closed" procedures of procurement at TCO, KPO and NCOC. In turn, this "closed" procedure of procurement does not allow a local company to obtain a guarantee for a contract for the supply of goods, work or services and further participation in the procurement even when*

the domestic company has passed the preliminary qualification.”
(Interview transcript 24)

Another issue for local firms is that when they fail to win a tender there is no feedback on why they have failed. Of course many of them could assume the root cause of failure especially from informal sources but if the problem really lies in the technical space some more transparency at this stage might help local firms to work on their constraints themselves or apply for support if this information becomes available to them. However, reasons why operators are willing to have this information confidential are unknown.

6.2.6. Trade regime for imports

The share of imported oil and gas equipment is high and apart from the lack of local production facilities there is also another reason to explain this. At the time of signing the main oilfield contracts and given that there was no local production of technically sophisticated equipment, a number of trade preferences were offered for the development of large oil projects to control the costs. To create better regulatory conditions for implementation of these oil projects, foreign investors were excluded from import duties on the equipment. Imported equipment enters the country duty-free in accordance with international contracts signed with the operator. This puts local producers in a disadvantageous position when it comes to pricing. At the same time, it creates incentives for opportunistic behavior and those local suppliers who have found the way to import equipment are in a better position than actual local producers who bear the costs of not only production facilities but also for imported parts. There are also cases when imported equipment is presented as if it was produced locally. An industry expert explains this: *“They have extremely unfavorable conditions for local content – the issue of exemption from customs duties on imports. Here the price imbalance is not in support of locals.”* (Interview transcript 9)

The unfavorable trade regime works against local producers. The value of imported equipment is high and it is much larger than local producers can supply. As a result, local producers are simply left without orders.

Summary

This chapter revealed that there are market failures that hinder development of the local oilfield machinery and equipment industry. Entry of local suppliers into supply chain of international oil operators is the critical factor for industry growth. One may note that the micro-foundations of failures of individual firms to form business relationship with oil operators lead to industry level challenges. Local firms, which have already entered the market and incurred the costs of entry, are still excluded from a progressive development trajectory because of the unfavorable trade regime and information asymmetry. At the same time, examples of successful local firms that managed to stay in this market and build a strong relationship with international operators shows that it opens the way for dynamic learning-by-doing. Obviously, rational firms perceiving the potential profits in this market will have to pay not only the high price for their entry ticket but also handle the strict practices of international oil operators in managing their supply chain that are not always open to new entrants. To some extent, leadership, determination and commitment are important ingredients of the successful corporate strategy for entering the supply chain. However, there are rampant market failures that undermine entrepreneurial enthusiasm and hinder the emergence of competitive local suppliers.

As it was shown, firms may fail to overcome economies of scale as they cannot meet demand in sufficient volume. This calls for coordination policies either from operators to combine their demand levels together or from the state to control market entry. At the same time, there are high transaction costs associated with entering into new contract relationships both for international operators and local firms. For operators there are searching costs as they have to screen the local market to find appropriate suppliers and run technical audits, quality checks, etc. In most cases, all the required equipment for the operation process is known, technical and operational standards are also all known, and what operators demand is something that fits into their technical, operational and governance routine. Whenever an international operator demands any specific item, it already knows the specific equipment it needs and necessary standards. It is up to the international operator's internal decision-making process whether to look at opportunities of local sourcing in Kazakhstan, and examine

whether it is possible to localize any of it at all. While for local firms, there are adaptation and compliance costs that might require international certification and more funding.

The other important point is a technological gap. In most cases enterprises have to import the equipment to produce parts. To get new equipment and bring it in, one has to have some certainty that there is a guarantee of purchase. No one gives such guarantees to local firms and they have to compete in accordance with the rules set by international operators. Thus, there is always the dilemma whether to pay the high entry ticket price (certification, new equipment, etc.) and enter the market knowing that firms who already did so still suffer from a lack of orders. Solving the “chicken-or-egg” dilemma requires collaborative practices to jointly address the industry development constraints. The combination of market failures in different areas, e.g. limited access to finance together with information asymmetry, calls for active public and private policy efforts. However, these efforts should avoid saving opportunistic rent-seekers while prolonging the survival of local enterprises that are not competitive. Instead, the efforts should go in the direction of helping the emergence of enterprises that, ideally, are competitive, maybe not globally, but at least regionally. The presence of such enterprises will push industrial transformation forward and diversify the economic structure. The most important conclusion of this chapter is that there are strong market and coordination failures and pure reliance on market forces could not lead the industry to reach its current level as well as continue to grow further. The next chapters examine the policies and governance arrangements that are in place to deal with the market failures and the institutional framework under which all these developments are happening.

Chapter 7. Policies

As discussed in Chapter 6, oil extraction projects have provided the groundwork for the emergence of local supply industries. However, the weak local absorptive capacity remains as one of the major constraints to the transfer of economic benefits from the extraction of oil to local manufacturing industries. This weak absorptive capacity is the result of market failures, which exist also outside the oil industry, and are combined with coordination failures. The aim of this chapter is to demonstrate what targeted policy efforts are in place to address these market and coordination failures. This chapter examines the first driving variable of the conceptual framework - policies. Horizontal policy efforts were discussed in preceding chapters and this chapter examines vertical policy efforts that are relevant to harnessing the development of one specific industry – oilfield equipment. The chapter avoids providing any normative assessment of whether policies in place are right or wrong as it is very hard to theorize on possible outcomes that could arise without these supportive efforts. In Chapter 4 it has been argued that the three driving variables of the conceptual framework need to be considered in a holistic way as they are closely integrated. Therefore, governance arrangements that surround implementation of the policies are discussed in the next chapter to assess the effectiveness of policy efforts while the role of institutions is examined in Chapter 9.

The highly selective policy tools discussed in this chapter could be summarized under the definition of policies aimed at supporting local competitiveness. The use of these tools is justified by the weak local capacity and is aimed to ease the constraints that local firms face due to market failures that are also located outside their industry. The policy toolbox discussed in this chapter commences with the incentives to enhance inter-firm linkages between international operators and local suppliers in the presence of the market failures discussed in Chapter 6. Installing such linkages is a critical first step in creating the benefits from oil extraction to the wider economy. This chapter discusses the state measures to embed the oilfield equipment industry in the supply chain of oil operators and how this is helping local firms to increase their competitiveness in terms of price and quality.

This chapter will also examine the role MNCs play in the process. The building of linkages is driven not only by state policies but also requires the valuable input and participation of the international oil operators. This is a very important feature of the process as the state has limited capacity for coercion and influence over the internal procedures of oil operators, especially those related to procurement. Still, despite the engagement of the state and oil operators in the agenda on local suppliers development, each party approaches this task from its own perspective. If for the state it is important to involve as large number of local firms as possible, international oil operators have strong procurement procedures to ensure the best quality equipment for a reasonable price as the successful tender. It is hard to evaluate how strong the pressure is from the state as its negotiating arguments are not publicly known. However, it is obvious that without agreement and subsequent implementation by the international operators this tool-box would be very hard to implement. Thus, the tool-box is a mix of assertive and cooperative policy efforts that is being implemented by both the state and international operators to support competitive local suppliers.

7.1. Access to finance

The state has created various organizations and schemes to provide access to finance for domestic enterprises as there are market failures in the financial market. The funding option depends on the size of the enterprises. For SMEs funds are provided mainly through the Entrepreneurship Development Fund Damu, a subsidiary of the National Holding Company Baiterek that is a management company for all state-owned financial development organizations (11 companies in total and includes a development bank, investment fund, export promotion agency, housing bank, and a mortgage company). The Damu Fund has three instruments to provide finance for SMEs: (1) conditional deposits in commercial banks to provide bank credit for manufacturing enterprises; (2) subsidized interest rates; and (3) provision of a state guarantee. The Damu fund is the financial operator of the state program Business Roadmap 2020 that is aimed at the development of entrepreneurship through a range of state support

measures. The financial support is provided to enterprises from priority sectors as indicated in the 2IIP, including the oilfield equipment sector. The subsidy cap on the interest rate on bank loans and leasing contracts for manufacturing industries is limited to 50 percent of the nominal interest rate that is calculated with the base rate of the central bank plus a 5 percent margin for the bank. The subsidized bank credit can be used for investments, modernization and expansion of the enterprise capacity. The maximum value of the subsidized bank loan is around 7.5 million US dollars and the subsidy period duration is limited to 5 years. The state guarantee through the Damu Fund is provided up to the value of 540 thousand US dollars. The conditional deposits in commercial banks are used for channeling finance to manufacturing industry through the operational network of banks. In this framework, the Damu Fund places the deposit in local banks, which participate in the program, that in turn after consideration of the application for funding provides a bank loan to enterprises in priority sectors. The funding to Damu Fund is provided through the state budget and from the National Oil Fund. During the period of 2011-2017 the Damu Fund provided financial support to manufacturing enterprises amounting to around 8 billion US dollars through all three financial instruments.⁵⁷

State financial support to larger manufacturing enterprises is provided through the Development Bank of Kazakhstan (DBK). One particular example of this support is the case of AtyrauNefteMash (ANM) – a large oilfield equipment manufacturer that has more than 90 years of history and is one of the oldest machinery plants in Kazakhstan. Established in 1918 as a mechanical workshop for railway transport, today it is a specialized supplier of heavy oilfield equipment in the Caspian region. The plant is located outside of Atyrau city in Western Kazakhstan. ANM specializes in the production of heavy-weight tanks and vessels: high-pressure vessels, columns for oil refineries, and air coolers. In the future it aims to manufacture pipes, flanges and fittings for these vessels. The plant works with high-carbon steel as required by international operators as well as with all types of alloys and stainless steel. The plant has its own facilities to roll cold steel with thickness of over 200 mm. Local content is around 90% as the steel itself is imported. In 2018 ANM supplied the first of two three-

⁵⁷ <https://www.damu.kz/programmi/subsidy/> The Damu Fund corporate web-site, accessed on 20 December, 2019

phase super heavy thick-walled separators to KPO to use at its Karachaganak field that has a high hydrogen sulfide content in associated gas – the first time such equipment with the given wall thickness and steel sheet composition was made in Kazakhstan. ANM manufactured oversized and super-heavy equipment for the Integrated Gas Chemical Complex in Atyrau – a multibillion US dollar project operated by Kazakhstan Petrochemical Industries LLP – and won the contract in a tough competition with international bidders. These types of contracts require the use of advanced technology for welding and special flaw detection techniques. To fulfill the contract, ANM invested in new specialized equipment and trained its personnel. In addition, it has invited foreign auditors to provide recommendations to ANM on internal processes in accordance with international standards of documentation management, procurement, software and staff development.⁵⁸

For customers in the region, the benefits in engaging with ANM include convenient logistics, optimal manufacturing terms, and the provision of a warranty service for maintenance. About 90 percent of ANM contracts are held with international operators – KPO, TCO, NCOC and their contractors. As mentioned by the ANM general director in a public interview, the plant had signed contracts with international operators. The value of ANM contracts to supply goods with KPO is 5 million US dollars, and with TCO - 8 million US dollars. ANM is a first-tier (direct) supplier for 200 tons in weight vessel for storing liquid nitrogen for NCOC. For Maersk Oil Kazakhstan GmbH ANM is participating in all of its tenders at Dunga oilfield. In 2018 ANM entered into the joint venture with the South Korean company MTS that has done the engineering services for Tengiz Future growth project and the new cooperation agreement with Italian KBM to work on KPO expansion project is in process.⁵⁹

In 2015-2016 ANM started its technological modernization program to expand its productivity. To increase its capacity ANM has purchased modern equipment from leading original equipment manufacturers, reconstructed the plant, trained its personnel with

⁵⁸ <http://www.anm.kz/about/> corporate web-site of AtyrauNefteMash, accessed on 20 December, 2019

⁵⁹ Interview published in “Oil and Gas of Kazakhstan” magazine, pp. 42-50, issue 4, 2019

world-class specialists in welding, design, quality control, and introduced new types of welding, steel processing, and flaw detection practices. As a result, its production capacity increased to 20,000 tons (2.5 times its production prior to the modernization) and new production items are introduced according to international standards – API and ASME. ANM is already certified with both ASME and API. The total cost of ANM capacity expansion was 15.3 billion tenge (around 46 million US dollars). The DBK has provided almost 70 percent of this modernization funding in the form of a long-term (up to 14 years) tenge loan of 10.6 billion tenge (around 35 million US dollars) under the 2IIP. However, ANM experienced a shortage of working capital to import materials for the signed contracts with customers. Additional funding up to 1 billion tenge (around 10 million US dollars) for working capital has been provided by DBK’s daughter company (share of 97% in the capital) - DBK CV Equity Fund – venture capital fund for direct investments.⁶⁰

This example of ANM shows that there are strong location advantages for local suppliers to engage with international operators but these require a constantly improving business strategy, access to both long- and short-term finance, cooperation with international contractors and commitment from the oil operators to work with local firms. Whether ANM will remain as an independent local supplier or end up as an affiliate within an international contractor depends on the aspirations of its owners, as it is a private company. In either scenario, ANM demonstrates that the country will benefit from the emergence of new skills and capacity on its territory.

The other important channel of finance to support development of local suppliers is provided through partnerships between the government, oil operators and international financial organizations. For example, in late 2016 TCO entered in to an agreement with the European Bank for Reconstruction and Development (EBRD) to launch a two-year programme to support SMEs that is aimed to provide consultancy services to local businesses through seminars and enterprise assessments. The consultancy services are provided by leading international experts in the areas of strategy, marketing, human

⁶⁰ <https://www.kdb.kz/en/pc/news/news/8239/> DBK corporate web-site, accessed 15 November, 2019

resources, finance, and bookkeeping. The government of Kazakhstan, TCO, EBRD and BG jointly provided the funds for the program.⁶¹

The local banking industry is also introducing its new bank products adapted to the needs of local suppliers. Specific bank credit is provided for working capital when the local supplier already holds the contract with an oil operator. The amount of such credit is limited to 80 percent of the contract value and the duration is limited to 12 months while the interest rate for such funding starts with 13.5 percent in tenge. The bank has a list of enterprises and supply contracts to these customers is considered as eligible collateral. The other similar bank product is a loan secured by future receivables from the list of eligible customers. Such a loan is limited to 90 percent of the value of future receivables and to 4 months in duration with the nominal interest rate starting from 12.5 percent in tenge.⁶²

Overall, though there are various financial schemes in place, the evidence suggests that access to finance is more open to either large or very competitive enterprises that already hold contracts with oil operators.

7.2. Kazakh tenders, early tenders, and trial orders

Tendering rules are important policy tools. Tender procedures include the rules, principles and processes through which procurement of goods and services happens. In international practice, tendering procedures are agreed between an oil operator and a line ministry (or the national oil company when it represents the state authority) and may simply reflect the global practice of procurement as a main approach to tendering. Tender documents indicate the basis upon which contracts are to be awarded. Tender procedures specify whether the bid and its evaluation happen on the basis of international competition or there are preferences to local bidders. Most importantly, the tendering documentation can define the additional weights assigned to local suppliers and provide scores for the share of local

⁶¹ <https://www.ebrd.com/news/2015/ebrd-and-tco-sign-new-small-and-medium-business-support-programme-for-kazakhstan.html>

⁶² ForteBank presentation at the Machinery Forum, September 2018

content of the bid as a part of the overall assessment (Tordo et al., 2013).

In Kazakhstan around 80 percent of the total procurement of goods, works and services in the oil industry accrue to three oil operators – TCO, KPO, and NCOC. While the average share of local content is around 30 percent, the share of goods remains low (7-12 percent) and there is no information on the exact share of local content in procurement of oilfield equipment. The way the tendering procedures within these operators are organized and to what extent they favor local suppliers offers a basis for further development of local industries. The three main oil operators – KPO, TCO and NCOC – each has their own tendering procedures that are outlined in contractual agreements with them. The procurement process is open to only those that are registered in the vendors database and each operator has its own database. Once the local company is registered it has access to information about ongoing and future tenders depending on its specialization. Tendering procedures, including bid evaluation criteria, are confidential. Competitive bidding in tenders is the major procedure for procurement operations. However, the single source method is also in place when there are economic, technical, operational or market justifications for this mode of procurement. For example, under the Tengiz expansion project the government and the oil operator reached agreement that local content will be a mandatory criteria in the evaluation and assessment of the bids of potential suppliers. At the same time, entering into a joint venture with a local producer is seen as one of the main requirements in awarding long-term supply contract to foreign suppliers.⁶³

The important tool in promoting local sourcing through tenders is the *Kazakh tender* that international oil operators use to engage local firms on a direct contract basis. Provision of Kazakh tenders is also mentioned in the PSAs signed with the operators. In this case, there is a domestic-only tenders list that covers specific types of goods sourced locally. But this does not imply that contracts are awarded on an uncompetitive basis. The rule on adequate price and quality is still in place. In addition, there is a recent innovation to tendering procedures that received the name of *early tenders* – a tender, which is conducted in a way to provide an early opportunity for interested local companies to develop production facilities of new types of goods within

⁶³ Observation from Local content forum attended on 7 September, 2018

Kazakhstan. The idea is to give a chance to competitive local suppliers to participate in large oil development projects. The *early tender* mechanism assumes that the contract is awarded to a local supplier that undertakes an obligation to establish production facilities of goods of the required quality and price in the country and deliver within the expected timespan. The aim of this mechanism is to create a pool of local suppliers capable of producing the goods of required quality. Under the early tender mechanism, local companies are given time for investment, the operator supervises the quality but it offers the contract in advance of the delivery date. If the quality of the final good is adequate, the operator is obliged to buy. This mechanism has been launched with several companies in a pilot mode for orders but not yet for technologically sophisticated equipment. A state agency representative describes the early tender mechanism: *"Some operators – KPO and NCOC - have an early tender mechanism. It was launched a couple of years ago. Operators announce a tender in advance, disclose the technical information in advance, and indicate the demand volume for products, and the technical requirements. If there are interested manufacturers who can make the products according to the specified technical requirements, operators announce such tender. Roughly speaking, such a tender is announced two years before delivery date. The potential supplier undertakes during the specified period the necessary investments to produce and deliver the goods with reference to requirements requested by the operator. And the operator takes the obligation to buy at the specified price, and this is already a long-term contract"* (Interview transcript 2)

The other important arrangement is the long-term contracts that are concluded for longer than one year. Long-term contracts are meant to create a stable demand for specific type of products and provide local suppliers with more stable orders to remove the uncertainty and offer favorable conditions for planning the production process. In this arrangement standard contracts are for two years with the possibility of an extension.

The other important tendering mechanism is the placement of trial orders. The major task of this option is to check whether technological and production capacity exists at the local producer level. Once a local producer manages to produce and successfully supply the trial order, it is a proof of its capability to produce the product. This mechanism offers local firms an opportunity to increase the quality of the product or adapt it to the needs of the customer. An industry expert

explains their experience: *"Before there was no manufacture of drilling bits for oil and gas sector in Kazakhstan. The first time they tried it did not work, but the operator did not refuse to continue working with the enterprise. The operator provided its recommendations on how the product needs to be improved. The company re-delivered the trial batch, and on the third time the company has made improvements and modified their product. In the end they signed a contract for supply. Large oil enterprises, they are very cautious about local goods, they try first in small volumes."* (Interview transcript 2)

To organize the process of engaging with local suppliers in a progressive way, the practice is to create the list of equipment that have potential for local supply depending on their delivery time – short-term, mid-term, and long-term. Separating the products into different groups allows preparation of the timeline for placing early tenders and trial orders with local producers. As one industry expert explained: *"Five years ago large operators joined at the negotiating table and identified needs in the most purchased goods. Several forums took place, a number of invited investors joined, and they disclosed the demand for the top 10 most popular products with an annual budget around 300-500 million dollars."* (Interview transcript 2)

Still, utilization of this tool is associated with high transaction costs for all participants. The success of its implementation depends on the determination of both parties. These tools could be a good solution to the *chicken-or-egg* dilemma when both parties carefully communicate expected outcomes. With the receipt of a trial order, local suppliers also receive access to new knowledge, new experience, qualified experts, and training while still producing a product, which potentially could be exported. Thus, it is a good example of learning-by-doing for all stakeholders of the process. For local suppliers this tool is a good way to overcome uncertainty: they understand the expectations and adapt accordingly to the required level of quality and price, and the operator buys at the end if all requirements are fully met. This mechanism also works as a motivation for technological and productivity upgrading and overall business development. However, these tools are still used for products of not high technological complexity.

Overall, the work on engaging local suppliers in the supply chain is underway and the fruits of it are emerging slowly. The process is one of a trial and error but still it creates more points of interaction between local producers and oil operators. Though the process is not

easy for both sides, the local company has the opportunity to increase plant capacity, invest in training of personnel and introduce new technology. While this process of learning-by-doing might have some errors, it still provides the local manufacturer with more opportunities for future development and offers a way to enter the global supply chain and participate in other projects around the world. These highly tailored tendering tools allow the identification of the local supply potential that is under development in Kazakhstan and once they receive such support they could upgrade further.

7.3. Supplier qualification and reference visits

A qualification assessment is designed to evaluate each company against the pre-identified qualification criteria in terms of production and technical capabilities, safety standards, environmental requirements, etc. The main purpose of this procedure is to reduce any project risk by recommending only suppliers with sufficient potential or capabilities to meet project requirements. Qualification is a multiple-step procedure of capability assessment for companies. All potential suppliers go through this process under which subject matter experts review each supplier's capability and opportunities for engagement. Site visits sometimes are part of this qualification process and play a crucial role in building relationships between operators and local producers. As one industry expert explained about quality assessment: *"The main stumbling block for establishing contacts between customers-oil companies and local manufacturing companies of goods, works and services is the quality of work performed and not just international standards are considered. The fact is that each project, more or less large, which accounts for about 70% of the market for oil and gas equipment in the Caspian region, carries out mandatory pre-qualification. Often pre-qualification is a task of a certain level, including quality, labor safety, environment protection, provision of bank guarantees, and experience. Depending on the general quality of the company, and of its products, it will be decided that if they do not meet the quality, or once do not provide the service on time, they are all in the "black list" (Interview transcript 9)*

Reference visits are conducted as one of the ways of supplier assessment and are called to evaluate what technological and

production capabilities are actually available. Visits take place in various regions and sometimes are organized by local authorities to support development of the economy in the regions. In most cases these visits require thorough preparation for both operators and suppliers. For operators the aim of such visits is to assess the existing expertise of potential suppliers with the intention of identifying opportunities for local sourcing of equipment. These visits range from initial “facility verification” visits to exploration of the broader capacity and product range, and more specific assessment visits where multidisciplinary teams of subject matter experts perform detailed assessments on specific capabilities. These visits inform operators on whether a company has introduced certain technical or quality standards, whether there are any technological inconsistencies and to what extent their production process satisfies the operator. Visit findings are translated into reports to further develop contracting strategies on possibilities to engage the visited local producers or provide any additional support when specific capabilities are missing, e.g. special training on welding techniques, staff certification, skills improvement, etc. A local producer explained: *“When you meet with the customer personally it is the most effective, there is an understanding of what they want and what we can offer. Until they by themselves identify their needs, it does not matter how much the state will help – if they do not have the demand, then there is nothing.”* (Interview transcript 16)

At the same time supportive practices are also in place. For example, as shared by one of the local producers that is participating in the expansion project at Tengiz, in order to win the tender it first had to purchase equipment from an international producer for welding and quality control. Within this project the customer – TCO – has very high welding standards, which are introduced by Chevron based on its experience in exploitation of pipes in high sulfur environments. Before the production commenced, a series of technical audits took place from TCO on quality control, welding procedures, and metals quality. These were followed by recommendations on improving the welding process and the company followed them to remove all defects. Eventually the production by the local supplier has launched. Now representatives of the customer are constantly present at production facilities to inspect the quality control and compliance to all technical procedures, and they have the right to stop production if any misconduct is observed. Thus, the openness of the operator to support local suppliers by sending its technical specialists to the production facilities contributes to building

the skills and increasing the capacity of local suppliers. One local producer's experience: *"But operators are more open now, this year is better than last year. There is an understanding, there are some steps, the fact that they visit enterprises and look. This year they have visited our company, have looked around, I have close contact with the Department that deals with local content."* (Interview transcript 11)

However, the main issue with reference visits is that local suppliers do not always have access to such reports. Thus, there are ways to improve the cooperation in this area, to create more production facilities that operate in line with the requirements of the oil operators.

7.4. Partnerships between international contractors and local firms

The government in Kazakhstan is taking steps to localize production facilities of OEM. There is a strong economic argument for doing so as oil operators procure annually a large volume of products from OEMs. The information about brands, types and volumes of OEM products is collected through reports from oil operators to assess the combined potential for economies of scale for localization of their production facilities in the country. Given the existing demand and its expected stability in coming years, the government is negotiating with OEMs on the possibilities for localization. A state agency representative explained in detail the situation: *"We are now considering how to attract OEMs. We can offer free economic zone, administrative guidance, training of local staff. Operators will have more confidence when the plant is based here. We requested from three operators what equipment they buy from OEMs, we made our analysis and identified fifteen equipment positions, quantities, and procurement forecasts. On our dialogue platform already there are three operators. Kazmunaigas held three meetings and soon the Energy Ministry will have a meeting too. At the moment we are preparing a Memorandum between the Ministry of Energy and the three operators. We are developing a road map. We identified two areas of work: Ministry of Energy, PSA authority works directly with operators and the Ministry of Energy and the Government works with OEM's. This is a new idea. We have the clear vision and we need to work. We must offer OEM's good*

conditions. From us they can reach out to Russia, Azerbaijan, Belarus, and Central Asia. Hard work is awaiting ahead.” (Interview transcript 32)

The work on attracting OEMs to the country is carried out with each operator. For example, KPO has identified 8 OEMs that supply products on a constant basis – General Electric, Honeywell, Cameron, PetroValves, John Crane, Flowserve, Baker Hughes (General Electric) and MAN Diesel. KPO has determined the list of products for localization, organized joint site visits to local producers to discuss opportunities for partnerships and introduced amendments to tendering documents in support of localization. As a result, the memorandum of understanding is signed with one of the OEM, while PetroValves have opened a small workshop in Aksai city. Other OEMs are working on localization proposals and economic calculations. The approach of KPO to localize OEMs production assumes that it will provide the long-term contract (up to 10 years) with the indicated minimum value in exchange for localization and investments of OEMs. In their turn, OEMs are expected to find a local partner interested in localization, provide investments for modernization and new production facilities, technology transfer and skills development. The government role in this setting is to invest in further development of local capacity and offer additional support measures, i.e. exemptions from import duties of all necessary intermediate goods, machinery and equipment. Currently localization of OEM production facilities is disadvantaged by import duties and there is little economic sense to move production facilities into the country while the products can be supplied more competitively from abroad. Thus, the process requires involvement and contribution from each stakeholder.⁶⁴

One of the contracting strategies employed by international operators is to demand from their first-tier or engineering-procurement-construction (EPC) contractors to maximize the local content. This requirement is included in the bidding process and is one of the criteria for a successful tender outcome. For components that are readily available or known to be available locally, it is expected that the international contractor will maximize the engagement of local producers. For those technical products that are not manufactured in Kazakhstan, the international bidders are required to submit their

⁶⁴ <https://petrocouncil.kz/en/what-kind-of-work-is-carried-out-by-kpo-for-the-development-of-local-content-and-localization-of-production-of-oem-goods/> , accessed on 2 August 2020

prospective plans that outline how additional support through local services, such as maintenance and production of spare parts, will be provided to local companies. These have to include any possible opportunities for training and technology transfer to local firms. Thus, the performance of foreign contractors in regard to local content commitments stated in the tendering documentation is monitored. Some international operators explicitly indicate the requirement for formal partnerships (in the form of joint venture or affiliation) with local firms as an entry condition for the bidding process. A state agency representative explained: *“And we agree that the requirement should be to create a joint venture, and already KPO itself communicates with these companies, sends a prequalification sheet from its database, and demands from international companies that they search local companies. It is clear that all these large companies have long been present in Kazakhstan, they have partners already and they fit such requirements. There is no such thing, that we through forums have to collect information or on an individual basis. All this is done systematically.”* (Interview transcript 15)

Overall, encouraging relationships between local and international companies will enable knowledge and technology transfer, contribute to long term capability and competitiveness of local firms, and maximize opportunities to enlarge the list of equipment and machinery manufactured locally, especially those of high technological complexity. There is an initiative (with a strong push from the state) to attract five leading global OEMs to create joint ventures with local companies to foster technology transfer, production of components, and development of local services (repairs, warranty, technical maintenance). As observed during one forum: *“We will introduce those mandatory requirements for the establishment of joint ventures. Also we are looking for complex vehicle and equipment made in Kazakhstan and governed by Kazakh personnel, this will be the base for sustainable development for the local market, bring inward investments, assist in technology transfer from abroad to Kazakhstan. My message to international companies: if you want to be more competitive and meet our local content expectations, invest in Kazakhstan, find partnership with local companies.”* (Observation from the forum on local content)

The move toward building of partnerships with international suppliers indicates the presence of a strong will to expand local sourcing under the condition of an open economy with accession to WTO and deepen the technological complexity of goods produced locally. It also demonstrates that the focus of measures to support

localization is becoming clearer while the content is changing too: the dialogue is moving from simple goods to technologically more complex products. This also indicates the readiness of stakeholders for greater collaboration and cooperation. One particular solution to attract OEMs lies with the oil operators. If they could organize tendering well in advance of actual need, this will give international companies time to consider localization options and establish joint ventures. Hence, the governance of planning the procurement within oil operators requires adaptation to offer opportunities for localization. The arrival of OEMs and international contractors will boost the competitiveness of local producers via the location advantage, and even if they work through subsidiary companies, there is still enough room for the demonstration effect. The presence of international producers of equipment will facilitate knowledge, skill and technology transfer and these could be transmitted to a larger number of local producers through movement of the workforce. Hence, the building of competitive local suppliers cannot happen by accident but requires a deliberate effort by all stakeholders to advance the industry. The benefits of domestic industrial upgrading will outweigh the difficulties associated with creating favorable conditions for this to happen.

7.5. International standardization

Technical regulations and technical standards play an important role in driving international competitiveness. The technical regulation system is an important part of the country's industrial policy. Before 2005, the system was lacking coherence and consistency with numerous not systemized documents providing regulations in various areas. This was affecting the application of standards, creating difficulties and confusion. As a result, there was an issue of distrust in the quality of local goods in general. From 2005 the new Law on technical regulation came into force and introduced a unified system of technical regulation aimed at harmonizing local standards with international technical regulations. The idea was to improve the quality of goods and improve the standards of production in general as well as to simplify the application of standards. The technical regulations are integrated into industrial policy as a way to increase competitiveness.

The system of technical regulation is required to regulate public relationship when it comes to definition, establishment, application and execution of mandatory requirements for products, services, and processes. The system establishes the legal framework aimed at ensuring the safety of products, services and processes in the Republic of Kazakhstan.⁶⁵ Hence, the technical regulatory requirements are an important tool in fostering quality improvements of local products. Harmonization of national standards with international standards opens the ways for recognition of local goods at international markets. In this respect, accession to the WTO was a major motivating factor for the alignment of national and international standards.

As indicated in 1IIP it takes at least one year, on average, to fully implement the harmonized technical regulations. This time period includes necessary measures for modernization of production, creation of a testing base, and adoption of harmonized standards. In 2010, the level of harmonization of national technical standards in the machinery industry overall with international standards was estimated at 80.3 percent as noted in the 1IIP and annually the general level of harmonization increases on average by 1-2 percent with the introduction of new standards. In the 1IIP, the use of technical regulations is required to create conditions for production processes that meet international standards, the introduction of management systems and technological upgrading. Policy measures in this area among other things include: (1) introduction of national and international regulations based on international standards for products within specific industries; (2) subsidizing SMEs in the implementation of management system standards; and (3) creation of conditions for production of innovative products and voluntary confirmation of the application of standards. The 2IIP continues with this work on harmonization of standards and the annual adoption of national and international standards as a way to accelerate industrial development.

The machinery industry is highly specialized and technical regulations play a crucial role in ensuring the quality of goods. International certification is the most common way to enter the oilfield equipment market. For example, API has developed standards for the engineering of oil and gas operations, technological requirements for machinery producers and standards for manufactured equipment.

⁶⁵ <https://www.zakon.kz/85435-gosudarstvennaja-sistema-tekhnicheskogo.html>, accessed on 25 October 2019

There are numerous API standards for various oilfield equipment products - pumps, compressors, and cables. The authority of API is recognized around the world and its standards are part of the tendering criteria together with national and industry standards.

The direct form of support provided to local suppliers is to reimburse costs for international certification. This comes both from international operators and the state. International oil operators could fully sponsor the certification. In this case, such support is free for the local supplier but not free for the country as eventually all the expenses are returned with the cost of the oil produced. The state provides support in terms of reimbursement of certification up to 50 percent of total costs. International operators also organize seminars that aim at preparing participating companies for the installation of various machinery and equipment, to improve maintenance in accordance with internationally accepted standards like ASME or API, and to provide them with practical knowledge and understanding of quality requirements involved in design and fabrication. The provision of continued support to local suppliers in acquiring international certification and development of practical approaches to combine international and local standards (GOSTs - that are in use since the Soviet Union time) are important to increase the level of competitiveness of local producers. However, from interviews it seems ambiguous whether this type of support will continue from the state. Oil operators provide support for certification with ASME, API and ISO standards within their supplier development programs. An industry expert commented: *"Some operators have programs that allocate funds to obtain international certification, for example NCOC, that helped to obtain the ISO standard for more than 50 companies. Several enterprises have received and implemented the API standard, which is very expensive – from 100 to 500 thousand US dollars. They (oil companies) have such programs, and they help."* (Interview transcript 2)

7.6. Local content certification

According to local regulations there is a requirement to confirm the country of origin of the goods. A product of Kazakh origin is a commodity that has been issued a certificate confirming its origin on

the territory of Kazakhstan and is known as “CT-KZ certificate”. The certificate is a document certifying that the country of origin of goods is the Republic of Kazakhstan. The certificate is intended for domestic circulation to confirm the share of local content in goods for procurement operations of a subsoil user holding the contract which was concluded before January 1, 2015, and valid until the expiration of the contract or until January 1, 2021, depending on which event comes first. These dates are provided in accordance with the transition period agreed with WTO. The National Chamber of Entrepreneurs Atameken issues the CT-KZ certificate. The procedure for issuing the CT-KZ certificate includes: (1) application of the producer to any of the regional chamber of entrepreneurs in 14 regions, cities of national importance and the capital; (2) revision of submitted documents by the relevant office of the chamber; (3) applicant chooses the expert organization from the web-site of the chamber to undertake the expert audit; (4) the audit and issuance of the report within two working days from the date of registration of the application with a full package of documents; and (5) award of the certificate. The validity of the certificate is between 12 and 36 months from the date of issuance.⁶⁶

Local content in goods is calculated as a percentage of the value in the final price of the goods, including any domestic materials used to produce goods and any other processing costs incurred in Kazakhstan during manufacturing. Thus, a CT-KZ certificate reflects the share of local content and provides the nominal (monetary) value of all domestically incurred costs. In this respect, CT-KZ is used to identify the level of local content in any good. If the good is not manufactured in Kazakhstan, the CT-KZ is not provided.

This certificate is sometimes used as evaluation criteria during tenders and depending on internal procedures could add points during screening of tendering documentation. In this case, the certificate helps local producers to gain more points compared to foreign bidders that still offer a lower price. However, 100 percent local content is unlikely as local producers still import components to produce the final product though design and manufacturing are fully local.

⁶⁶ <https://atameken.kz/ru/services/5-sertifikaciya>, accessed on 20 November 2019

7.7. Information sharing

There is a wide range of tools available to create access to information of different types – tenders, market analytics, procurement plans, etc. The important source of information is market analytics that identifies the demand for various types of goods based on procurement plans and reports of subsoil users. Assistance in communication and information exchange between local and international companies is aimed at improving the awareness of industry participants about the market. One of the joint initiatives of the Ministry of Energy and the three major operators is to create a unified database – Alash – that automatically manages interactions between suppliers and operators. Alash is the single source of information about prequalified oilfield service companies for international operators. For suppliers, registration with Alash provides an opportunity to engage with all three operators. However, Alash is not obligatory for oil operators and they still rely on their own supplier databases. Such initiative helps to reduce the searching costs. The Alash database will not be used as a tool for pre-qualification and qualification of companies, due to the fact that each operator has its own processes and procedures for pre-qualification. The Alash focus is on the correct reflection of capabilities of companies in the database, as well as increasing the number of registered companies. The expectation is that the database becomes a single stop for the registration of local suppliers with all three oil operators and they will gradually move to using a single unified registration system.⁶⁷

7.8. Market awareness and partnership facilitation events

There is a very intensive schedule of events with the intention to create networking platforms for the industry: forums, conferences, exhibitions, workshops, and seminars. In most cases during these forums or conferences there is signing of Memoranda on joint actions

⁶⁷ <https://www.alash-kz.com/en-gb/ALASH-for-Suppliers>, accessed 18 September 2018

or presentation of strategic documents. For example, the IV Forum of Machinery producers in 2018 presented the draft of the Comprehensive Machinery Industry Development Plan for 2019-2030, although there was no open discussion of its milestones. The other business-to-business annual event organized by NADLoc – the state authority responsible for local content development - already for the second time is the Subcontracting Exchange. Relevant state bodies and development organizations are invited. The forum is a one-day event, organized in two parts: (1) a plenary session that includes a short presentation from state bodies and development organizations on their industry development plans and actions; and (2) business-to-business discussions. All participants are requested to fill in survey questionnaire for the database on local producers. At the same time local producers can connect with representatives of NADLoc for information on demand for their products and potential buyers. The second session is highly interactive: for each large customer there is table where representatives of the buyer explain the procurement procedures and potential suppliers can present their products. This is organized for networking and contact building. Apart from buyers there are also tables for development organizations that provide consultations on available state support for everyone who has an interest. They first examine what is the product one produces and what support is required.

The other important event for oil and gas industry is KIOGE – the annual exhibition that takes place in Almaty and gathers all industry players together. Each international operator has its own stand and normally there is a wide range of specialists who can provide consultations on different questions. At the 2018 KIOGE exhibition each of the international operators had a workshop on its pre-qualification procedures and procurement policies. In addition, each operator independently organizes local content forums dedicated to a specific industry, i.e. chemicals, machinery, to introduce producers (international and local) to project requirements. The objectives of such local content forums is to provide information about the status of ongoing or future expansion projects, collecting feedback to develop a sustainable and effective local content strategy of the project, early engagement of national and international contractors to provide opportunities for provision of goods, works or services and promotion of partnership opportunities between international and local contractors. Overall, this tool is widely used and allows at least the

sharing of contacts. However, individual presentations take place mostly at production facilities.

The idea of these events is to gather a specialized audience – market players – to discuss existing industry development bottlenecks. For example, local content forums are commonly used for disclosing the opportunities in projects, sharing information about demand volumes and technical requirements as well as on priority products with constant demand to guide the market. However, the type of information shared at such forums is of a general nature. The specific details are discussed during individual meetings and production site visits.

7.9. Suppliers development program

In Kazakhstan, international donor organizations play a role in fostering the development of local suppliers. Apart from EBRD's financing programs, the World Bank is financing a supplier development project as a part of its mandate to help the country in its economic diversification efforts and achieve sustained economic growth. The World Bank believes that fostering procurement from local firms will allow maximum benefits to be derived from FDI in the form of increased income streams, job creation, technology transfer, higher levels of competence in local firms, etc. The World Bank follows its experience in applying such supplier development programs in other countries. The oil and gas and metallurgy sectors are chosen as pilot industries given the high concentration of MNCs. Before launching the project there were interviews with industry players to identify the main challenges and the constraints they faced in entering into exchange relationships. The findings indicate that international operators are willing to deal with firms who reflected their standards in all areas: technical, operational and cultural. Thus, the project needs to go beyond technical matters and cover management and customer relationship practices too. Information asymmetry – when international operators lack the information on local firm capabilities and quality – has been identified as the other area for action. It proposes to create a suppliers' database that includes only local suppliers that are recognized by operators. The project assumes stringent selection procedures for companies who are willing to

participate in the project and receive development assistance. The evaluation of participating firms through self-and external assessments will be conducted to create an individual business development plan with the participation of leading consulting firms that are accompanied by local consultants. The evaluation process is intended to engage NADLoc to build the capacity and leave the legacy after the project is completed. The implementation tools are mainly seminars, workshops, and individual consulting support. It is also expected that within the NADLoc individual staff leads the participating company as a key account manager to allow dissemination of overseas expertise to local cadres. The project provides the selection criteria and the formation of a steering committee consisting of representatives of international operators, state authorities, business associations and banks. The final aim of the project is to cultivate competitive suppliers from the pool of carefully selected local firms (World Bank, 2012).

Summary

The aim of this chapter is to introduce policy tools being used to address local capacity bottlenecks discussed in Chapter 6 – technological gap, high production costs, information asymmetry and others. These factors constrain the international competitiveness of local firms and work as hurdles to the development of business relationships between local firms and international operators. The tool-box described here in most cases is highly selective and is concentrated on local oil and gas equipment and machinery producers. There is a strong rationale to employ such selective tools to support price competitiveness of local suppliers in relation to imports. However, these tools are aimed not only at price competition but also to technological upgrading and improvements in organizational and business management practices. Thus, the primary focus of these selective efforts is to facilitate the participation of competitive local firms in the supply chains of international operators. The final goal is in lifting up the local absorptive capacity to create a cluster of at least regionally competitive local suppliers that are technologically up-to-date and dynamically improving. Reaching this goal is crucial because otherwise there is a risk for firms to remain dependent on protectionist

policies. In addition, this chapter provided examples of targeted policy efforts in Kazakhstan that could be adapted in other countries depending on their contexts.

Overall, the use of selective tools is justified as it helps local firms to overcome their main development challenges that result from a combination of different market failures existing outside the control of local firms and arise from general macroeconomic and institutional conditions in which these firms operate. Without such selective tools in place, it will be very hard for local firms to promote their competitiveness level as they are operating in extremely harsh conditions of international competition and unfavorable trade regimes. Local firms need to adapt to the high requirements of international operators and overcome information asymmetries. Thus, as previously discussed, building local absorptive capacity is too important task to leave it to market forces alone.

Although, selective tools help lift up some specific industry constraints, these have to be joined by horizontal policy efforts that aim at the promotion of a favorable business climate, infrastructure development, increasing the resilience of the financial system, enforcement of the rule of law and protection of property rights. These have been discussed in preceding chapters. In this respect, any selective tool should be linked up to the wider industrial policy of the country. Placing selective policy tools that deal with firm-specific or industry-specific constraints in the context of supportive horizontal policy is a good combination to create the grounds for industrial transformation based on oil extraction operations. Still, Kazakhstan lacks the critical mass of enterprises in the manufacturing industry. Small private sector constrains the industrial transformation and there is a need for its expansion relative to high share of SOEs in the economy.

This chapter clearly indicates that state policy tools have a catalytic effect on the emergence of new industry and that there is a process learning when the state gradually increases its bargaining power and capacity to introduce policy. Thus, over time the state learns and as external conditions change it has to adapt its policy to new rules (e.g. WTO, financial crisis, and low oil prices). The increased bargaining power of the state allows it to push its agenda on fostering local suppliers. On the other hand, international operators agree to such policy pressure as there is economic sense in doing so. As a result, various selective tools emerge that are provided by international operators but with some push from the state. Overall, these create

seeds of state-business relationships in the development of the local suppliers base. Collaborative arrangements increase policy efficiency and help to avoid strong state failures such as *picking losers*.

It is important to note that voluntary policies are more persistent and less cumbersome to international operators than mandatory requirements. The tools in use are associated with high transaction costs for all stakeholders. When it comes to operators, localization is by and large dependent on their approach to tendering. It has been demonstrated that tendering in advance offers greater opportunities for local industry players. Hence, there is a need to align governance arrangements related to procurement planning and tendering practices to localization policy efforts. Once these arrangements are in place, they will form the institutional foundation for deeper localization. Thus, governance plays a crucial role in the promotion of local suppliers.

To conclude on policies, in Kazakhstan as firms face a wide range of market failures, these require targeting competitiveness of local firms at a sectoral level while creating a favorable business environment at the horizontal policy level. At the same time both private and state policy tools play an important role. However, to maximize the effect of policies they have to be accompanied by supportive governance practices and institutional framework. The next two chapters discuss the governance arrangements that are in place to ensure the implementation quality of policy tools. In contrast to this chapter that mostly discussed the question of what is done, the two chapters discuss how the process of steering local suppliers is happening and why there are constraints that limit policy efficiency. Thus, the next two chapters cover governance and the institutional framework around the policy tool-box discussed in this chapter.

Chapter 8. Governing the market

The ownership structure of the oil industry is different compared to the rest of the economy due to the presence of the FDIs. Though the soil itself is the property of the country, the state participates jointly with its international partners in oil projects and as discussed in preceding chapters all relationships around major oilfields are guided by stable international agreements with foreign investors. Thus, state authority is limited when it comes to intervention in this market, including in the area of procurement of local goods and services. Any attempt to develop local suppliers has to take into consideration not only the nature of the oil industry that affects the way supply chains of international operators are operating but most importantly the governance mechanisms that international operators have established to govern their exchange relationships in this market. Similarly, the state also has introduced its own governance arrangements to implement the policy tool-box and align it with the contractual framework of the industry. Exploring these governance mechanisms is necessary to understand the factors that support or undermine policy success.

The state could address market and coordination failure and reduce the costs of getting information. At the same time, policy failures could be rampant if there is a lack of governance capabilities. State interventions to address market failures can result in a poor outcome due to insufficient governance capabilities. The state might not be able to pick winners still, however, it could minimize the waste and costs of industrial policy by organizing its implementation in a proper way to reach the policy objective. Growth outcomes hinge both on the types of policies that are in use and on the governance capabilities that allow curtailing the likelihood of government failure. Promoting the localization agenda requires strong state capacity for the enforcement of rules that seem to be weak. In the absence of such capacity these efforts result in the creation of formal rules that often do not work.

Increasing the competitiveness of local suppliers goes beyond regulatory tools and administrative pressure to force large players to source locally. The main goal in fostering local competitiveness is to improve quality and reduce costs. There is a move to increase local competitiveness through building competencies, transfer of knowledge,

and through the introduction of new technologies, so that local suppliers can achieve a higher level of global competitiveness.

The process of developing local suppliers through increasing their competitiveness requires new approaches to governance that build on a wider engagement of stakeholders. In the first stance, the move toward greater public engagement through public councils is discussed as a major governance innovation to the policymaking process. It also assumes greater emphasis on accountability both on the part of the state and of private business. These actors become accountable to deliver on competitiveness expansion rather than creating preferential conditions for local suppliers. With no accountability in focus such efforts bring only temporary benefits. While business is encouraged to increase its capacity through training, the introduction of new technologies and competitive strategies, such practices require a greater level of interaction and deliberation to find solutions to bottlenecks. Such deliberation allows the creation of tailored support measures for local firms as well as designing responsibility mechanisms.

This chapter identifies major governance gaps. Despite selective tools being in place, these are not perceived as effective due to existing governance constraints. Under intense international competition there is a demand from the market, if not for more protection then at least for more guidance. Industry development is happening more in a non-systematic rather than orderly way. There is an understanding that it is necessary to move forward, and the state has to define strategic goals – where the industry is heading. The Machinery Industry Development Plan for 2019-2030 is adopted as a long-term vision for industry development. According to this draft, the SWOT-analysis of oil and gas machinery and equipment sector identifies strong opportunities for sector growth: estimated mid-term demand around 20 billion US dollars due to expansion projects at major oil fields and creating joint ventures with international companies to enter global supply chains. At the same time, there are threats: strong entry barriers and stable supply chains, technological gap, low skills, narrow range of manufactured goods and low domestic value-added, weak investment attractiveness of the industry, and WTO rules and regulations. Thus, the main area for policy application is to withstand the proliferation of imports. However, the draft does not discuss how this will be achieved. The main governance problem is that often formal rules do not create a new legal field, but are the result of rapidly changing realities and

circumstances. There are cases when the legislative acts adopted by the Parliament experience hundreds of changes within a year after their entry into force as each state agency has set a goal to achieve international ratings prescribed by its own area of responsibility while the coordinated work of all the government bodies is missing and rules are only partially implemented.

This chapter is aimed at examining the governance mechanisms around exchange relationships between local suppliers and international operators. There is no analysis about the appropriateness of these mechanisms, while existing governance practices in conducting such transactions are discussed. Thus, there is no attempt to scrutinize whether these practices are examples of good governance or not. This chapter outlines the governance arrangements established within international operators that service their relationships with local suppliers. Given the limited scope for state intervention, joint action of all stakeholders is at the forefront. The chapter then examines the collaborative governance arrangements and actions for joint decision-making through deliberation by the state and international operators.

8.1. The move to accountability – the role of public councils

The introduction of public councils reflects the government's effort to activate greater public participation in decision-making and accountability mechanisms as a general approach to policymaking. As defined by Quick and Bryson (2016) public participation is a fundamental feature of any democratic society that allows direct and indirect involvement of relevant stakeholders in the policymaking process. The authors note that the rationale for public participation is strong and offers benefits in the form of generating higher quality policies in terms of their content. At the same time, the authors believe that capturing those benefits depends largely on how legitimate the public participation is, the level of its inclusiveness and diversity or representation, the expertise that it could provide and how the participation process is designed.

Since 2016 the newly adopted Law on Public Councils is in place and provides the legal foundations for implementation of the state's policy on the formation of accountable government and ensuring the

broad participation of non-profit organizations and citizens in decision-making by public authorities at all levels of government – regional and central. According to the Law, public councils are consultative-advisory and supervisory bodies formed by ministries, local governments and state agencies directly accountable to the President, with the exception of state bodies related to national security, defense and the administrations of the President and Prime-Minister. Public councils are formed at two levels – national and local (regional) and are provided with independence and autonomy by the Law. The number of representatives of civil society in the public council should be at least two thirds of the total number of its members. The recommendations of public councils are obligatory for consideration by the state bodies and they have to provide articulated responses whenever requested. The Law clearly states that the main purpose of the activity of public councils is to represent the voice of civil society on socially significant issues. The specific tasks of public councils include representing the interests of civil society in policy decision-making at the national and local levels; increasing the interaction of central, local administrations and municipalities with civil society; organization of public control; and ensuring transparency of the activities of all levels of public governance.

Despite the broad authority of public councils, it remains questionable whether they manage to exercise such authority. Knox and Janenova (2017) drawing on primary data from public authorities, ministries, and NGOs have explored the question whether public councils are achieving their aims. The authors find limited effectiveness of public councils for a range of reasons. Although the Law requires inclusion of members of public councils on a competitive application basis, in reality representation of independent members is limited. In most cases public councils include retired officials of the same state organization that is supposed to be accountable to public councils. State officials are well aware of the mechanisms of the work of state bodies and through their status are able to put pressure on the rest of the members. In this respect, public councils are used to consider decisions of state bodies that are already taken. The authors note that the government has successfully mislead public councils by engaging them in discussion of procedural matters, overloading them with documents, and as a result the potential of public councils is not fully utilized. In part, this is also due to lack of expertise, skills and knowledge necessary to perform the required tasks of the public councils. The problem gets

more complicated as public councils are financed from the funds of relevant state agencies and this undermines their autonomy while the work in public councils is unpaid and is carried out on a voluntary basis. At the same time, the authors note some positive cases too. However, these are largely driven by the personal commitment of relevant high-level officials to engage in public cooperation management. Overall, the authors recognize that there is a great demand for civil activity in Kazakhstan, and public councils are capable of reducing the level of alienation of citizens from the policymaking process. For the successful execution of this task, public councils need to be truly independent and autonomous. Otherwise, they simply become marionettes in the hands of bureaucrats.

The example of public councils is instructive to show the level and quality of the dialogue in general between the state and other stakeholders. In this setting the ruling elite and bureaucrats do not engage in public talks while policy failures are covered by reports that are not open to the general public. At the same time, as society becomes more concerned about policymaking and policy outcomes, citizens are demanding better standards of living. Increased social activity and demand for better living standards has forced the first President to dismiss the government in February 2019. In his opening speech the first President as one of the main reasons for resignation of the government indicated its inability to work with the general public and hear the voice of society. The society, in general, is experiencing a transformation as it becomes more demanding for positive change and the growing lack of trust of society in the state is rooted in weak accountability and transparency about public policies and their outcomes in general, and not only limited to industrial policy. Under limited accountability and transparency on how reforms are implemented, citizens are not aware of the results. The capacity of the society for an objective judgment on policy outcomes and calling on the government to take responsibility for failures is limited. As a result, the quality of policymaking by the state still needs significant improvement. The main conclusion would be that the failure to undertake productive dialogue in any area is an indicator of potential state failure in specific areas, and industrial policy is not exemption. At the same time, there are areas where the role of state governance is not always a primary one.

8.2. The important role of corporate governance

There are areas where private actors play a pivotal role in terms of rule-making without the involvement of the state. Market forces drive private governance arrangements and they gain authority from customer preferences, external audiences, supply chains and developments in global civil society. Thus, these are mandatory for the private agent who makes a decision to follow the specified set of rules. Systems of private governance operate alongside formal regulatory systems to enforce the norms, ensure compliance, participate in rule-making, etc. Hence, private and public governance systems can be complementary. Firms may develop internal norms and practices to regulate behavior of other businesses, e.g. create regimes of good conduct. The question of why private governance is emerging is attracting attention in academia. The dominant explanation for this emergence is derived from the process of economic globalization and the corresponding restructuring of state functions: a decline of the nation state calls for closing the governance deficit by private governance arrangements to overcome any regulatory failure. Other explanations indicate intentions of private governance to forestall binding state-led regulations while others emphasize the shift toward market-oriented systems in world politics. In an attempt to conceptualize private governance, one has to distinguish between two types of private authority – *delegated* and *entrepreneurial*. In the former, non-state actors act as agents of state interests while in the latter it is grounded in the expertise of private agents and their ability to exercise market pressure, persuasion and foster legitimacy (Isailovic and Pattberg, 2017).

As Olsen et al. (2005) note, the governance mechanism plays an important role in handling complex procurements that involve a large number of actors. The authors consider three types of governance mechanisms to explore to what extent each of them contributes to smoothing the coordination process and thereby improving procurement efficiency through reduced transaction costs. In particular, the authors describe three forms of contracts as governance mechanisms: (1) market contracts; (2) internal contracts; and (3) relational contracts. In market contracts economic incentives represent the primary governance mechanism and economic agents respond to price changes to maximize their own utility and profits. Market

contracts are concluded for transactions with a short time horizon, there is no uncertainty or lack of information, all conditions are specified in the contracts and market prices drive the coordination process. Internal contracts govern transactions within the hierarchical structures through authority. When authority is used to govern exchange between independent actors it is associated with giving one party the right, among other things, to develop the rules of exchange. At the same time, there is a distinction between formalization and centralization under internal contracts. Formalization relates to the use of rules, while centralization refers to who has the right to make decisions. Internal contracts have long time horizons and exchange transactions take place under great uncertainty. Lastly, under relational contracts, actors follow specific patterns of behavior that are specified by norms and rules. The expected norms of behavior are solidarity, reciprocity and flexibility. Solidarity means that parties maintain a long-term perspective on cooperation, while reciprocity implies a fair distribution of profits between parties. In turn, flexibility relates to the readiness to change the plans and strategy for the benefit of all actors. In relational contracts, trust plays a major role as a governing mechanism. Trust creates the basis for entering into cooperation as it is expected that another actor will not act opportunistically. Hence, Olsen et al. (2005) concludes that there are three types of governance mechanisms – incentives, authority and trust – and these are rarely found in their pure form and are interlinked. In this sense, effective governance is the one that tailors the mix of these pure forms to the nature of exchange transactions. The authors explore how the interplay of incentives, authority and trust affect coordination between actors and, thus, contribute to exchange performance. They found that trust plays an enhancing role to shape the incentives and use of authority. At the same time, shared incentives with the focus on a common goal are the outcome of increase in trust. Conversely, the lack of trust undermines the development of effective incentives and results in weak authority structures. In this setting, weak authority further undermines the shared incentives and trust, and the overall outcome is the disintegration, rather than integration, and weak exchange performance. Hence, an effective governance mechanism reduces friction between actors, improves coordination and results in integration and focus on common objectives. Complex procurement requires the use of effective governance mechanisms to obtain a good performance.

In this respect, the private authority of international operators does not originate from the state apparatus and is not the product of delegation. It is the set of rules that operators follow in regulating their operations, including on building relationships with local suppliers. There is an economic sense of engaging with local suppliers and the push from the authorities on local content calls on international operators to find ways to governing the operations on local sourcing. Since PSAs do not define specific procedures on how this should be conducted, the pricing mechanism drives operators. However, due to the pressure to promote local sourcing and the weak local absorptive capacity there is a need for the emergence of governance arrangements to address these issues within international oil operators. As a result, operators have introduced internal governance arrangements to govern the process of local sourcing.

In the first stance, each oil operator has introduced its policy on local content development to outline the incentives on local sourcing. Local content policy is aligned with the existing regulatory framework on subsoil users, PSAs and other internal policies (tenders, procurement, etc.). The local content policy is influenced by shareholders incentives to foster local content development. In turn, each shareholder is an international oil company (e.g. Chevron, Shell, Total, ENI) working around the world and building a legacy behind its operations is a part of its corporate culture. Thus, local content policy is a part of the wider corporate policy of shareholders. To enforce implementation of the local content policy there are governance arrangements within the organizational structure – each oil operator at least has a special unit on local content development or other steering structures within managing boards or it is formed as an independent committee. The objective of these governance structures is to implement local content policy, ensure its objectives are met, monitor compliance and serve the interaction with local suppliers and authorities on local content matters. For example, the objectives of local content units among other tasks is to create and maintain the database of already pre-qualified local companies that have experience working with the operators technical requirements. These local content units are operating to inform external and internal stakeholders on opportunities for local companies. Work with local companies is carried out in two directions: (1) internal request – when there is a demand from specific specialists, e.g. project managers responsible for carrying out specific projects, to undertake market research and determine the

list of companies with required capabilities; and (2) tender procedures that includes pre-qualification, visiting production sites for capacity inspection, technical documentation assessment, etc.

Eriksson and Westerberg (2011) argue that for a new procurement practice to be introduced, buyers need to be confident in its effective use and positive outcomes on project performance. Overall, a broad range of procurement related factors could affect the project performance. Project performance is defined by three major success factors – cost, time and quality – and three additional factors – environmental impact, work environment and innovation. The success factors of procurement procedures relate to transaction costs. The governance of procurement procedures could be driven either by competition or cooperation. Cooperative governance establishes collaborative procedures that include joint specifications with shared responsibilities, the tendering is through direct negotiations, and the bid assessment offers higher weights to relational factors rather than price. Competition governance places more emphasis on competitive bidding from multiple bidders, a higher weight on prices and lower use of collaborative tools in procurement procedures. Traditional procurement procedures governed by competition are best suited to simple and standardized projects with low uncertainty. The authors find that more cooperative procurement procedures have a positive impact on many aspects of project performance and could better address project challenges associated with complexity, uncertainty and time pressure. For example, when it comes to the type of tendering, a fewer number of bidders contribute to project performance in terms of time. At the same time, a higher focus on relational factors rather than price during the bid evaluation could positively contribute to quality, time, environmental impact, work environment and innovation provided by the projects. Cooperative procurement procedures help installing the collaborative climate in project implementation that is based on trust and commitment among project actors. Such a collaborative climate, in turn, contributes to successful implementation of the project. Overall, the more challenging is the project the more the use of cooperative procedures is justified.

Based on this consideration, it is important to understand to what extent local sourcing is seen as one of the success factors of the project. If local sourcing is given the same weight as other success factors – time, cost and quality – then the use of highly cooperative procurement procedures is beneficial. Hence, the level of local sourcing

needs to be embedded as one of the additional factors defining success of the project. However, the evidence indicates that local sourcing is not yet seen as one of the success factors. Still, there is a great move toward this agenda within oil operators. The agenda is already embedded in the corporate policy of operators and their shareholders as they work in many countries and an increasing number of developing countries require higher commitments to local content development. As one international operator explained: *"That process is led by shareholders. ... I've worked a lot with local content development in my career, and I have a passion for it – I'm trying to put it on the agenda, but I don't need to push it very hard because all the shareholders also have this agenda. All shareholders have offices here in Kazakhstan and there are people responsible for local content, and there are subcommittees where they talk in great detail about these topics."* (Interview transcript 23)

Local content policy objectives are to increase the value of domestically acquired goods and services. In relation to oil and gas machinery and equipment it is a hard task due to weak local absorptive capacity. One of the reasons is that engineering services in most cases are conducted outside the country and resulting technical documentation does not consider local capacities. To overcome this issue, there are internal procedures that aim to engage local suppliers at early stages of project design and engineering. These procedures include the identification of potential local suppliers that are capable to deliver the required goods. This is not to say that priority is given to local suppliers, it is only to make sure that they are not excluded, and then standard procurement procedures will follow anyway – the most competitive supplier is chosen. An international oil operator explained: *"We try to plan local procurement early - this work begins at the design stage. We start this discussion at an early stage, when new projects arise ... We also seek for potential within our basic operations: according to our operation plans every two years, we have to shut-down for service and repair works. As part of this work, there is a replacement of spare parts, valves, etc. We identify the range of products – that are not too technologically complex, which can be replaced, or repaired here locally. Our technical experts are also interested in this work, it is necessary to finish maintenance quickly - each day of no production costs a lot of money."* (Interview transcript 27)

Although there are governance arrangements, the use of cooperative procurement procedures is still limited. At the planning stage of procurement when determining the list of participants of the

tender, operators also include local vendors that meet the criteria to make sure that local suppliers are not discriminated against. However, each operator has different bid assessment criteria when it comes to referencing local suppliers. For example, when the tender evaluation is conducted the weights assigned to local content, among all other issues, could be set as high as 15 percent - this is quite a high threshold and comparable to the weight assigned to the most important criteria - labor safety and environmental protection. In addition, to that when the technical assessment is carried out there is a points system. If, for example, local content in the product is present based on a CT-KZ certificate, there is a higher grade. However, such evaluations are applied only when there is already local production in place. An industry expert commented: *"In any case, there is a competitive tender, even if the Kazakh plant has ASME certificate, it will participate in the tender on equal terms with the foreign plant. There are no conditional discounts. This is the main barrier for Kazakh companies. If their criteria are satisfied, they do not look at the price factor. Sometimes the price of Kazakh factories is higher, they still buy."* (Interview transcript 2)

When there is strong evidence that procurement from local sources would be competitive in terms of price, efficiency of operating parameters, delivery terms and quality, preferences are given to locally sourced equipment, products and services. To make sure that local content policy objectives are achieved and local content targets are met together with safety, production, cash flow and other considerations, there is an internal enforcement procedure. For example, within the system of staff benefits, local content development targets are set as one of the key performance indicators. At each managerial level there is a targeted percentage of local content and individual accountability to achieve that specific threshold. This is to indicate that within international operators there are strong internal processes and management mechanisms to govern activities on local content promotion.

Overall, the aim of governance mechanisms is to receive evidence that there are competitive local suppliers in place and make sure that reasonable efforts are taken to search for such evidence. It is up to the internal commitments of stakeholders to make sure the system is working properly. It is necessary to take into account, for example, there were scandals in large projects on corruption in procurement, where affiliated suppliers were chosen. There is an internal integrity policy to fight corruption. As state agency

representative stated: *“Security departments are overpopulated, it affects the production cost, to make sure there are no integrity issues.”* (Interview transcript 6)

Still, it is up to an operator’s internal policy how to treat local suppliers during tenders, i.e. give them any privilege given that quality is not affected. Thus, the existence of all these arrangements does not undermine targeting economic and operational efficiency but puts emphasis on the importance to pursue a high level of transparency, accountability and inclusiveness. That means procedures are applied in a transparent and coherent way, there are specific mechanisms to make people accountable for their decisions and there is overall adherence to principles of fair competition. Otherwise, governance arrangements could be easily violated and fail due to the lobbying of shareholders or rent-seeking interests of economic agents and individuals within and outside of international operators. Thus, the task is to avoid having governance mechanisms as a formality and avoiding the situation when local content policy exists only on paper. When governance arrangements are guided by the principles discussed above, they strengthen the likely success of the implementation of the policy tool-box for the development of local suppliers.

In an ideal case, a local content governance framework includes specific procedures, practices, guidelines, management systems, and policies to deal with local suppliers in an efficient, transparent, and fair manner. In this case, the contribution to development of the host economy is achieved through the maximization of engagement with competitive local suppliers. More importantly – governance arrangements of international operators when properly applied are called to build long-term relationships based on trust, shape incentives and show authority to obey the rules. Thus, there is a great chance for convergence of governance arrangements of international operators and their long-term suppliers.

8.3. Pilot agency

The government’s specific governance arrangements to foster local suppliers resulted in the creation of two specialized organizations – PSA Authority and NadLoc. These organizations exist within the

general framework of the organizational structure of central government and are assigned special functions in relation to local content development. At the government level the task on local content development is divided between two ministries. The Energy Ministry is responsible for monitoring compliance of procurement of goods, works and services during operations on exploration and production of hydrocarbons according to contracts. The PSA Authority is under the administrative guidance of the Energy Ministry. The PSA authority represents the state in Karachaganak and Kashagan projects, while the Energy Ministry is directly engaged in the Tengiz project. The Industry Development Ministry is responsible for providing state support to local companies, including in the area of local content. NadLoc is a subsidiary of the Industry Development Ministry.

8.3.1. PSA Authority

Initially the Kazakhoil Company was designated as the authorized body to represent the country's interests within the PSAs in the North-Caspian Sea (Kashagan) and the Final PSA of Karachaganak field at the end of 1997. In 2001 the government authorized the Ministry of Energy to represent the interests of the state in the PSAs. In February 2002, through the merger of Kazakhoil and the national company "Transport of Oil and Gas", the new national oil company Kazmunaigas was created. Kazmunaigas then had the authority in the PSAs. However, in 2010, in accordance with the decree of the government, the functions of the authorized body were transferred from Kazmunaigas back to the Ministry of Energy. Kazmunaigas, as a result of this decree transferred its 100 percent stake in the authorized capital of "PSA LLP" to the trust management of the Ministry of energy. With Government Resolution №355 dated June 20, 2016 "PSA LLP" (hereafter – PSA Authority) is defined as the authorized body in the mentioned PSAs. Thus, the PSA Authority is under the management of the Ministry of Energy and consequently has the right to act as the authority in the North-Caspian and Karachaganak projects. Kazmunaigas owns 100 percent shares of PSA Authority.⁶⁸

⁶⁸ <http://psa.kz/about/> corporate web-site, accessed on 3 March 2018.

Given the rights assigned to it, the PSA Authority participates directly in the management bodies of the operators – NCOC and KPO. For example, within KPO there are various committees where the PSA Authority takes part: Management Committee, Procurement Committee, Sales Committee, and Sub-Committee on Local Content. These committees are dedicated to the discussion of budget, major contracts and implementation of social and infrastructure projects. Through participation in these committees, the PSA Authority has direct access to the process of decision-making, including the ones on local content development. For example, within such committees detailed discussions of technical documents take place, technical specialists are involved and areas where there are opportunities to attract local suppliers are explicitly defined. The PSA authority has its own technical department and local content experts. Those experts check the proposals of operators on local content values and when there are opportunities for greater local sources, these are negotiated extensively with the operator until the parties reach a consensus. Additionally, there is a reporting system to monitor how the agreed target level is being implemented. When it comes to inter-ministerial coordination on local content development, the PSA Authority provides its policy proposals through the Ministry of Energy. Any new policy initiative related to local content development is aligned to the contractual framework of the oil operators and negotiated with the operators through the PSA authority to find legal opportunities to implement these initiatives.

The core function of the PSA Authority is to monitor the implementation of projects in the North-Caspian Sea (Kashagan) and Karachaganak on behalf of the country. It is the *watch-dog* and observes and controls the progress of these projects, and protects the economic interests of the country. Under economic interests is included the costs of the projects. Obviously, the lower the costs, the faster the project will be implemented, and the higher is the economic efficiency of these projects. All project development costs are reimbursable by shareholders with the revenue from the oil sale, i.e. the cost oil. A state agency representative explains about the PSA Authority: *“The main task of the PSA Authority is not the development of local content, but ensuring the careful use of the subsoil. Each project reimburses the associated investment costs through the cost oil first and only then the profit is shared. And to make sure that any extra dollar is not reimbursed to them*

(international oil operators) this is checked by the PSA Authority.”
(Interview transcript 9)

The PSA Authority is thus called to observe the implementation process of the project and monitor the cost structure. There is rationale for such monitoring because there is already a precedent when one operator was asked to repay back to the country the costs of incorrectly calculated expenses for project implementation. There were three-year long profit-sharing disputes between the government and KPO that resulted in the agreement to repay the country compensation of 1.1 billion US dollars due to incorrect calculation of oil revenues. In addition, the parties agreed to amend the terms of their production-sharing agreement so that the country will receive a higher share of revenues in the future.⁶⁹

When it comes to the local content development, it is a priority item in the agenda. The PSA authority has the right to operate on behalf of the state to demand implementation of the state’s industrialization policy and all instructions of the government related to the use of local goods and services. At the same time, it has the authority to implement local content policy on these projects as it participates in the management structures. In this respect, the PSA Authority has the capacity to support engagement with local suppliers within KPO and NCOC. Still, the PSA Authority does not have a direct platform to connect with local businesses. This is mainly due to the potential conflict of interest between the agendas on monitoring the project costs and pursuing increased local content. This could be very costly. Hence, the PSA Authority cannot directly engage in the promotion of local firms but it can still create an entry point for a local supplier within the general implementation framework of the projects. Even when there are requests, complaints, letters from local suppliers, these are transferred to the relevant international oil operator for further communication. Keeping contact with individual local suppliers is not a priority for PSA Authority. It is mainly aimed at large-scale promotion of local content in terms of a specific policy target that increases from year to year – lets say from 50% this year to 55% next year – and guiding the operators to achieve this target. In turn, that target is carefully negotiated. However, this process is not frictionless and happens in accordance with the internal procedures of the operators.

⁶⁹ <http://www.kazdr.kz/en/blog/kazakhstan-hopes-increase-kpo-compensation-oil-revenues-dispute/>, accessed on 27 March 2020

An oil operator explains this: *“There are tough negotiations that result in very strict targets for local goods, works and services. Really tough, if we would not push it hard enough ourselves internally, then these conversations help to push it. With any of these tough negotiations sometimes we need that kind of push for our engineers but sometimes we feel that PSA is not realistic in their expectations too.”* (Interview transcript 23)

8.3.2. NADLoc

To support the industrialization agenda the state has created the system of development organizations to cover different regulatory aspects of industrial and innovative policy. In November 2002, to leverage extraction industries and protect the economic interests of the state within the extraction operations, the state has created the specialized agency on local content – Kazakhstan Contracts Agency. In June 2010 the entity was renamed NADLoc and is under the general authority of the Ministry of Industry and Development. In 2012 NADLoc was assigned the status of a development organization and authorized to implement state support measures on local content. The objectives of NADLoc are to support domestic producers, promote local products on the domestic market, and increase the share of local content in the purchase of the goods and services of the extractives industries. The task of NADLoc is to promote the use of locally produced goods. In relation to the oil industry, NADLoc’s task is to monitor the procurement reports of operators. Overall, despite the status of the sole dedicated body to promote local content, its authority is very limited when it comes to communication with international oil operators.

NADLoc deals with the development of local content but it does not have the right to engage with oil operators, as this is the task of the PSA Authority. In this sense, this division makes NADLoc less effective in implementing its wide agenda. Oil operators discuss the strategy on local content with the PSA Authority. Though the Ministry of Industry assigned NADLoc to work on local content development country-wide, it has no authority to enforce any of the oil operators at Karachaganak, Tengiz or Kashagan. This is because NADLoc is outside of the contractual framework and is not part of the contract with operators.

Hence, the work is organized through general cooperation and partnership rather than direct monitoring as in the case with the PSA Authority that works more as a controlling body. The core task of NADLoc is to remove information asymmetry through creation of on-line supplier databases, collection of reports on local content from mining companies, and making this information available to a larger number of market players.

At the time of writing there had been a decision to merge NADLoc with the Kazakhstan Industries Development Institute (KIDI) and the National Technological Agency in order to create one single development organization - QazIndustry. This decision is in line with the general attempts to increase the effectiveness and efficiency of the system of state support and improve coordination between different development organizations. Reforms of the organizational system of state support are happening due to disappointment with the efficiency of these organizations. As noted in the Concept of Industrial and Innovative Development Plan for 2020-2025, activities of development institutions in the field of industrial innovation are partially duplicated and poorly coordinated. Decentralization of support functions for industrial and innovation activities led to the implementation of poorly coordinated development strategies by the development organizations, which significantly reduced the possible positive effects. There are significant difficulties associated with an objective assessment of the implementation of the policy of industrial and innovative development, including the achieved direct and final results and the effectiveness of the state support tools. To improve the efficiency of industrial and innovation policy the state is going to take action to ensure the quality of monitoring and analysis of the effectiveness of the applied support tools, including through quantitative and qualitative assessments. Additional efforts will be taken to create better access to support measures for producers in the manufacturing industry. All these considerations have created the grounds for merging these three organizations. The other important point here is that WTO rules force the state to move away from selective support toward the creation of supportive conditions for productivity gains through the building of local skills, capabilities and capacities.

8.4. Coordination failures

Coordination failure is one of the greatest sources of market failure. The evidence suggests that there are coordination failures within the state and within the market. On the state side, the failure of the organizational framework to deliver the expected outcome result in the mentioned merger of three organizations. The state administration gets easily overwhelmed with tasks that are distributed across levels of state governance and at the end the task gets lost in transition. For example, the oil industry regulation is under the Ministry of Energy but local content development is within the Ministry of Industry and Development. When there is no integrity in the system of market promotion, the system is not working as a whole organism. There are many areas where improved coordination is required.

The weakest area is in policy implementation. At the highest level of policy-making, the level of the President, there is a clear message that policy is based not only on the best international experience but also from leading consulting agencies who are invited to provide policy advice. This advice is then transformed into a policy message for the government. Thus, at the top level there is a strong political will and clear message. However, when this message is then transformed into policy documents and tasks are allocated between ministries and across levels of state governance (including regional governors – akims) there are a lot of implementation challenges. The main constraint is that once the new policy initiative arrives at the top level, a large number of state bodies get involved in implementation but effective coordination is missing. One industry expert described the situation: *“One of the drawbacks is that there is no overall coordination though everyone is involved; operators also say that there is no coordination in the state bodies themselves. The expected result is not delivered. For 25 years we want to do it but we cannot still increase the local content. We need to coordinate the efforts of all. Meanwhile there is no synergy. There was a discussion, but there was no qualitative dialogue. There was no systematic work, no coordination, too strong negotiating positions among operators because of confidentiality of PSAs.”* (Interview transcript 31)

Hence, mechanisms of interaction are not functioning well. In most cases the state administration is aimed at solving the tactical issues. There are a couple of reasons for this. Firstly, each state agency

is focused and handles its own partition of the task. Secondly, the state reporting system assumes that there is a specific task with a specified deadline and responsible agency. Intermittent reporting on progress adds time pressure and becomes the task itself. At the same time, preference is given to performing the task rather than interaction and joint action. Third, there is an issue of taking responsibility to deliver on the task, especially when it is time-demanding the desire to take this responsibility is limited. Lastly, there are always vested interests or conflict of interest because policy targets do not align and this affects the incentives to deal with the market failure. One oil operator expressed this view: *"The one (interaction) I personally think can be improved is, for example, between the oil companies, between KPO, TCO, and NCOC. But also the smaller players in the country to really get clarity on what our demand is and how demand is forecasted. ... sometimes when there is an instruction from the top, by the time it gets translated into institution or into rules, it almost gets lost in the translation. It is a very comprehensive field, sometimes a bit messy. But it is just a minor problem. The fact that infrastructure, the support, and the funding are available is very good. We are making optimal use of that, we are not taking part in every committee or conference, but we are a very active player. ... If you go to the Prime-Minister it becomes too vague, of course the risk is: if you put it with the Minister of Industry and Development how is he going to influence the Minister of Energy, or of Finance to have a joint approach. I know that at the Prime-Minister level there is a lot of interest..."* (Interview transcript 23)

There is a need to observe the gaps at the national economy level, to look at the production in a consolidated way, evaluate the needs of each industry and coordinate on joint actions. In the absence of some explicit forms of coordination, development of the market is constrained due to a large number of actors with divergent incentives and fragmentation of the tasks between actors. An oil operator described the problem: *"There is the problem – too many actors, no one-stop-shop windows. Even operators have talked about this. We are constantly approached by different entities - NADLoc, PSA Authority, KazEnergy, KazService, and we don't know to whom and for what we need to refer. Even for local content there are now two agents - there are PSA Authority, NADLoc, and Information-Analytical Center (IAC) for Oil and Gas. They all demand something: some create rules, others - collect reports. It is all a bit fragmented. Even two of the Ministries cannot decide. Ministry of Industry and Development with NADLoc, and IAC with*

the Ministry of Energy. Too many stakeholders and scattered. There is no clarity of distribution of duties.” (Interview transcript 27)

At the level of the implementing agency tasks are allocated in a way to give ministries some level of independence to deal with a specific industry. However, development of one industry does in many cases require complementary investments in the other, e.g. development of machinery requires investments in research facilities and human capital. The second issue is that access to state support is uncoordinated. The state provides a wide range of supporting tools but these are all spread across different types of development organizations. This issue is addressed through the creation of QazIndustry. Next, within the state governance there is an issue of disconnect between its levels and as a result implementation quality is affected. To improve the strategic guidance The Concept on Industrial-Innovative Development for 2020-2025 offers some future steps. In the first place, the Commission on Industrial Development – an advisory unit within the government – is called on to play a greater role in the provision of policy recommendations to raise the competitiveness of the domestic manufacturing industry in general and on selective support tools in relation to large enterprises with strong potential to foster industrialization (defined as “centers of gravity”) in particular. As a result, the Commission on Industrial Development and the Coordination Council on Accelerated Industrial Development under the Prime Minister will work as coordination units. It is expected that such transformative organizational arrangements will allow a greater consistency and coherence in the formulation and implementation of policy efforts.

At the same time, the state in its desire to improve coordination creates additional platforms and organizations – within the government, under the Prime Minister, etc. – and as a result the system becomes even more widespread and hard to deal with. Organizations that do everything and nothing at the same time come and go within state structures. Overall, there is large number of stakeholders that are involved in the industry steering process. Some of them are organic parts of the process while others are in place only because they cannot be excluded. The example of two pilot agencies above is one of them. As a result, it is hard to evaluate what progress has been achieved. Thus, improving monitoring and reporting standards could be one of the remedies. An industry expert provided a possible solution: *“The state should build a plan for the development of the country for a certain*

period to set trends and based on these trends build its policy for the development of production. And subsoil users - they can only check whether the equipment offered to them corresponds to their production program, whether it will provide safety, environmental protection, and fit their plans to increase production. If the market offers a product and it is competitive, no one will refuse to buy. When this part will be regulated it will work. How effective is the state - is another issue.” (Interview transcript 3)

Lastly, the business itself finds it difficult to organize for joint action. Private agents are busy with their internal processes and do not have any incentives to solve coordination issues of a wider dimension. Overall, the government is aware that coordination failures are widespread and that success of industrial policy depends on how these issues are resolved. One way to address this issue is to increase the level of collaboration with private agents.

8.5. Collaboration on a rise

The remarkable feature of modern industrial policy in Kazakhstan is that the involvement of the business community in the policymaking process is highly formalized. There is a strong move toward more collaboration with private agents on policy issues. This move is reflected in the creation of Atameken - National Entrepreneurs Chamber, the association that collectively represents local business. Atameken was established on September 9, 2013 and is called to represent the interests of SMEs and large businesses, covering all areas of business activities, including domestic and foreign trade. There are 126 accredited unions in its structure. The main task of Atameken is to protect the economic interest and represent local business in the policymaking process. Atameken is aimed at ensuring the wide coverage and involvement of all entrepreneurs in the process of formulation of legislation and other regulatory rules for business. It was created to strengthen the negotiating power of business with the government. The wider objective of Atameken is to improve the investment climate and conditions to do business in the country both for national and foreign investors as well as promote resilience of local business. The specific functions of Atameken include representation

and protection of economic interests of entrepreneurs, involvement of business in the implementation of state programs, and representing the business community in public authorities, including courts.

There are various reasons for such moves toward more collaboration. In the first instance, while business is searching for ways to increase profits, the state is interested in achieving economic growth and development of industries through the creation of more value-added from resource extraction within the country. To achieve this aim there is a need for complementary strategies from the state, local business and oil operators. In practice, often the strategies followed by the actors are divergent. On the part of the state, the main strategy is to achieve socio-economic development, on the part of subsoil users it is a question of returns on investments, while on the local business side it is profit maximization. However, there is a strong rationale for local business to collaborate with the state and align strategies to create additional sources of profits by developing local supply industries. The state needs the expertise that exists within business. The idea of collaboration is very simplistic: periodically gather the expert community and exchange views, determine where to go, and make joint decisions. This helps in addressing policy bottlenecks. While for business it is an opportunity through such associations, gatherings and forums to inform the government on development constraints. An industry expert said: *"I can firmly say that now, compared to what was before – 3-4 years ago – there is movement and state bodies have more understanding of what is necessary for business, because business is the initial chain of economic development, and state bodies have an understanding that in cases where business will have success in the market, this success will affect the development of the state."* (Interview transcript 13)

In particular, there is a Union of Machinery Producers (SMK) that has its own members – local producers of machinery and technical equipment. The SMK unites more than 200 machinery and equipment producers and has 14 regional offices across Kazakhstan. Its purpose is to support development of the machinery industry and represent domestic enterprises of the industry. The Union is the voluntary association of legal entities, established in 2004 to coordinate actions, represent and promote the interests of the machinery industry, as well as take collective actions to develop the market of machinery products. Among other things, at the focus of the SMK is the expansion of local supplies to international oil operators, cooperation with foreign

companies, and discussion of issues of non-tariff measures to protect the market. Once a year the Union gathers its members for a joint Forum to discuss ideas on industry development: during breakout sessions participants are invited to develop practical recommendations for promotion of the industry, and expand its competitiveness and integration into the GVCs. Oil operators and state representatives are invited so that industry players could address specific questions to them. However, whether such forums improve communication is still an open question. They are probably more useful to openly discuss some acute bottlenecks and receive wider attention to industry development needs through the media. Overall, the issues discussed in such forums do not substantially differ from the discussions between operators and producers, or in the cabinet of ministries. The difference is only the wider participation and coverage that allows more attention to search for joint solutions. A local producer commented: *"We have a lot of open questions with subsoil users. Some of these issues are resolved through the Union of Machinery Producers: in terms of tenders and tender conditions. We are members of the Union of Machinery Producer. This association has regional representatives. Every week we communicate by Skype, the agenda is sent to us and we discuss issues. Each regional representative tells us what is happening in practice. If questions arise, we immediately try to solve them: with the help of the Union and the Union of the manufacturing industry regarding tender purchases with subsoil users. These are associations, people who can inform the government in plenary sessions. Our Union works closely with the Ministry of Industry and Development, Ministry of Energy, NADLoc, and all the state institutions."* (Interview transcript 11)

At the same time, subsoil users, oil companies in particular, are organized under the other industry association – KazEnergy. Established in November 2005, KazEnergy is created to support the development of entrepreneurship in the oil and gas sector. The mission of KazEnergy is the promotion of sustainable development of the oil and gas and energy industries, and the coordination of the search for growth points where the energy community could contribute. The aim of KazEnergy is to organize dialogue between business and government, ensuring a balance of interests of the state and energy companies. KazEnergy is a very influential organization, especially when it comes to oil operators. A state agency representative explained about KazEnergy: *"We have KazEnergy, which represents the majority of subsoil users in the country, and we are in contact with them. With*

NADLoc and Kazservice (local industry association of service companies working in oil industry) we have a constant exchange of information. We ask them about the problems, there is a communication platform. We have an interaction and, there is cooperation too. The whole process regarding the local content is under control, the main work is carried out by the Ministry of Energy, when we talk about the oil and gas sector. We have a working group that is under the Prime Minister, and under the Minister (of Energy) there is a working group on the development of oilfield services, where all the representatives, operators, the state, discuss specific instruction and support mechanism. We all work together and we carry out the tasks together. The final outcome is the development of local content.” (Interview transcript 32)

Hence, there is already an extended organizational framework in place that allows collaborating between industries and between business and the state in an organized manner. Individually or through Atameken all these unions are engaged in market consultations. However, it is only recently that the state has turned to active use of this channel of collaboration. The process is working but not without friction. Another industry expert stated: *“There is such a problem. Collaboration is declared, everyone understands that it has to be in place, but not always in practice we come to real joint action. There is no unity. Somewhere interests are different.” (Interview transcript 12)*

The collaboration process has its own driving factors. The major factor is that the state gives strong impetus to it. The state adopted the law on Atameken Chamber of Entrepreneurs to confirm its role as an organization that represents business. It is compulsory for all new legislation and rules to receive an expert comment from Atameken. Here the idea is to ensure that regulatory innovation does not harm business. One particular reason for such arrangements is the desire to improve the business climate. The country has succeeded as its place in the World Bank’s Doing Business ranking is constantly improving: from 58 in 2010 to 28 in 2018. This progress is the result of constant improvements in the regulatory framework on doing business: starting a business, dealing with permits, property registration, paying taxes, protecting minority investors, access to finance, etc. The role of Atameken is to provide consolidated expert opinion of domestic business in the rule-making process: new rules considered from the point of view of national business to increase efficiency of regulations and make adjustments in accordance with requests of businesses when there is a rationale. A representative of a state agency elaborated on the

role of Atameken: *"The precondition (for the move to greater collaboration) was probably the need of the state itself, the need to obtain better data for decision-making. It has always been, not lost, but not so clearly formalized as it is now. Previously, government agencies could make decisions themselves without consulting, but then the government made a decision under the framework of entrepreneurship promotion for participation of entrepreneurs in decision-making. It actively began with the creation of Atameken. And international experience, the same Chamber in Russia - a very strong structure, to which the government refers. We now have Atameken as well. Now we consult with business, but it is not always necessary to discuss everything – a consolidated opinion is very important but there is also an objective lobby. Atameken is now growing, developing, and I think this is the right tool. But there are also risks that lobbyists can push. When a specific proposal is submitted, we bring it to the discussion platform. Atameken is the referee for the business to reach a consensus on the proposal."* (Interview transcript 18)

The other driving factor is that with the start of industrialization there is demand for better policy formulation and implementation. To increase the quality of decisions, private agents are invited to participate in addressing the issues of industries development. It is anticipated that the private sector is mature enough to take its obligations to fulfill the decisions as discussed. At the same time, limited state capacity to utilize selective policy tools requires the government to create the conditions for more contacts with the private sector as well as helping private agents to organize themselves and cooperate jointly. Overall, there is a strong move to employ the network of organizations representing different stakeholders in the process of formal rules creation.

However, despite this strong move towards greater exchange of ideas and embedding private actors in the rules creation process, the process remains very much fragmented and the state still relies on the opinions of a set of pre-selected stakeholders. Thus, there are steps towards greater collaboration but to conclude that collaborative governance is emerging would be premature. It is still questionable to what extent valuable inputs or critical opinions of non-state actors are perceived as incentives for policy innovations: in most cases the discussion happens on operational issues but there are no open policy debates in place. At the same time it is questionable whether non-state actors are ready to invest their time in collaboration and whether the existing arrangements are satisfactory to the participants. Essentially

there is not enough trust in the credibility of the collaboration arrangements. Overall, there is a weak synergy between stakeholders to make decisive step towards collaborative governance; separation between stakeholders is still strong. An oil operator explained the situation: *“What I would say needs to happen first is that there is a better common understanding of what we are trying to achieve. For example, just going from these targets for goods, works and services – yes, we need some of that, like I said, sometimes a good kick for the companies, we are all companies, to move on but now we need to move to the next step – what is a real in-country-value and what does it mean and how you measure it and then how you set targets and what is the best institution or who are the best institutions to make that connect and manage that.”* (Interview transcript 23)

Thus, collaboration is still weak as there are differences in the power distribution between actors. For example, subsoil users have direct relationships with the Government because these are large investors and they demand special treatment. At the same time, though Atameken is active, its engagement in most cases is very formal. There is a demand for better structures for policy dialogue and improvement in the quality of the deliberation process.

8.6. Deliberation

Effective collaboration requires efficient deliberation. The presence of deliberative dialogue drives collaboration as it gives stakeholders an opportunity for mutual understanding of the constraints being faced. In turn, deliberation assumes reason-giving and different kinds of communications within this process: storytelling, references to personal experience, strategically thought out arguments, etc. Thus, the main components of deliberation are the exchange of reasons within a specific community of actors, access to the relevant audience and provision of reasoned feedback. Still, deliberation is context specific: closed-door decision making might bring more benefits than public debates; deliberation is less likely in the presence of polarized positions and high political stakes; and unequal distribution of information constrains the range of issues for deliberative dialogue (Öberg, 2017).

However, in Kazakhstan the preferred mode of deliberation is through the organization of forums and formal gatherings but the deliberative capacity of these forums is questionable. In most cases there are no relevant representatives from the state side who can either discuss in great detail the issue or provide administrative assistance in seeking solutions. When a high-level official visits such forums it is more like a protocolled event with prepared speeches but not really open discussion or airing of issues. At the same time, individual discussions allocated across levels of governance and stakeholders are very much fragmented and specific topics are either discussed individually or not discussed at all. Thus, it is very hard to judge how each stakeholder benefits from these discussions and whether they learn something new and how these discussions affect the intentions of stakeholders and to what extent these are transformed into policy actions. There is no unified platform to integrate all these ongoing discussions.

Improvement in the quality of deliberation faces a range of obstacles. First of all, it is time-consuming to offer each actor an opportunity to express its vision about the issue and potential solutions to it. It is highly likely that even lengthy discussions will not bring consensus as the parties have divergent views and incentives. Secondly, it is likely that local manufacturers take the position of criticism in the process of deliberation because they perceive the entrance to supply is marked as closed and discussions will not change the situation in their favor as their capacity remains weak. Lastly, in most cases discussion is formal and there is no real deliberation in place as the conversation happens at the level of industry and not at the level of specific experts. In this case, the dialogue platform is seen as an organizational add-on rather than the institution for deliberation. A local producer said: *"I think we don't need a mediator. Atameken is not needed here. It relates to the work of specific technical specialists. ... Those people up there making decisions, they're a little far away. The right approach is to make these companies decide on the spot. We want a direct dialogue, they don't even do that. All is too formal."* (Interview transcript 26)

Overall, the evidence indicates both business and the state are not ready for deliberation as it requires changing the rents structure, allocation of responsibility and delivering on a difficult task – deepening the economy. The move toward deliberation also requires change in the governance patterns. The deliberation is still in its infancy. An oil operator explains: *"Unfortunately, this (deliberation)*

doesn't work here in Kazakhstan. Things get, also from the state, very transactional as the next target, e.g. we have a number of large projects, every project by itself has a local content target and every single one has been a fight. ... But what I have said earlier – we are reluctant to make multi-year commitments. These things start like – what are your aspirations, ideas, plans – and you share them but they quickly turn to commitments. When next year you say things have changed, because things are very dynamic, and we need to change to something else, then there is a row – you have promised three years ago. And this is not fair and not the right thing in our opinion and we are moving to a planned economy and it doesn't work. Therefore, we are reluctant to make these commitments, which is also bad because we should provide more transparency on what our plans are. We are actually doing that. We plan and commit per year, we go no further than that. Because we get punished if we don't hold to our commitment.” (Interview transcript 23)

Summary

The aim of this chapter is to demonstrate governance and the organizational framework in place to foster local suppliers development. There is clear evidence that private governance arrangements have an important role to play. Internal governance mechanisms of the operators also influence the organizational arrangements from the state side. There is a strong understanding that administrative push by the state will not solve the problem of weak local absorptive capacity. In the presence of strong corporate governance practices of the operators, imposing direct state control over exchange transactions is a highly questionable approach. However, one area for application of state authority is to ensure that those corporate governance practices do not discriminate against local suppliers. There is a two-level governance system in place. The state acts to impose control on rent-seeking behavior of operators by use of a regulatory framework, political guidance and establishing pilot agencies. By imposing the rules on local content, the state does not intervene directly on specific goods or services but creates conditions for the non-exclusion of local suppliers. In turn, the operators through the use of their governance mechanisms control the opportunistic and

rent-seeking behavior of local suppliers and engage with those that have proven capability. The role of state governance is to ensure adherence to the principles of fair competition by all types of economic agents.

However, this is not to praise the superiority of the market approach or call for more state regulation as the other polar case. The sole reliance on market principles is not possible under weak local absorptive capacity. The change to a regulatory state would require a strong state capacity to ensure proper implementation of its policy. In this setting it is more important to move towards greater collaboration and coordination. External conditions (e.g. WTO, lower oil prices) also push the need to improve the quality of policymaking. The move of the state towards public participation and greater accountability seems consistent and logical. At the same time, operators could support the process with the move to governance based on collaboration rather than competition when it comes to procurement. All these arrangements require strong improvements in coordination.

The evidence shows that the current governance system inhibits widespread coordination failures. The sources of such failures differ: starting from no clarity on task distribution within the state, cluttered system of development organizations and moving to separate operators that fail to coordinate on engaging with local suppliers. It is not clear on how the industry is going to develop and how industry goals are aligned with the industrialization agenda and policies in other areas, i.e. National Innovation System development, human capital building, technological catch-up, etc. There are doubts that the system of state support is delivering the expected outcome because there are disappointments with the quality of policy implementation and existing coordination failures.

The state does acknowledge the presence of coordination failures and their adverse effects on policy implementation. There is a logical move to engage more with non-state actors on policy formulation and the rule-making process. In a search for alternative modes of guiding industry development under WTO rules there is a move towards greater collaboration with private agents. The evidence points at the ongoing consolidation of the organizational framework to support greater collaboration. However, this is mostly happening as information exchange rather the exchange of ideas and more open discussion of issues. The deliberative dialogue is still constrained while the deliberation process is more a kind of bargaining or continued

negotiation. These limitations of governance arrangements are supported by the institutional framework, which is discussed in the next chapter.

The general finding of this chapter is that despite the set of highly calibrated policy tool-box in place, the governance arrangements do not fully support its successful implementation. As a result, the industrial policy loses its efficiency because the focus is moved from how to correctly organize the process to what should be done. In this case the industrial policy is still missing its key design features as discussed in Rodrik (2007) - embeddedness, reciprocity, and accountability. Weak deliberation processes, the formal existence of public councils and general low level of accountability of the government in front of society all indicate that embeddedness is not yet present in industrial policy. Reciprocity and accountability are all being only now considered as a potential source to improve the quality of policymaking after all the coordination failures in the framework of development organization have been discovered and admitted by the government. Given that these important design features of industrial policy are weak, the state has a very weak capacity to effectively address market failures even with its highly-tailored policy mix since the state itself suffers from the coordination failures within the system of state governance. The findings of this chapter are also in line with idea of Hirschman (1958) on the influence of non-production forces (i.e. administration and governance) in the development process. Such processes are much harder to master compared to production process. Hirschman strongly believes in the power of “built-in spurs” that ensure for any new ventures to become efficient and dynamic unit of the economic system (p.133). These mechanisms are endogenous and intrinsically differ from production processes. These could become main drivers of competitiveness and in the case of their weakness it is likely that the country will face failures in the inducement mechanism for development. As he notes: “Therefore we have a new kind of imbalance likely to arise in underdeveloped countries: at a certain stage of their growth, the ability to *promote* new ventures may outstrip the ability to *run* them efficiently.” (p. 139). In such situations, the country aims to create sophisticated industries while the basic issues of public administration remain unresolved (p.155). The findings of this chapter indicated that promoting policies outstrip existing abilities of state authorities and private agents to operate efficiently and deal with coordination failures.

To make this discussion complete it is important to understand why such coordination failures exists and what institutions surround the process.

Chapter 9. Institutions

The institutional setting plays an important role in economic development. A resource rich economy on its development path moves from one set of institutions to another by constantly upgrading its institutional setting: from institutions contributing to resource extraction to institutions contributing to economic diversification. This institutional innovation is extremely large-scale. In order to change the status quo, there has to be strong commitment and leadership in place to foster such institutional innovation. Institutions are not simply rules, but also aspirations of people. Institutions define what kinds of policies are implemented while governance arrangements complement existing institutional structures. This chapter examines how institutions enable or constrain industry development and discusses the channels through which institutions influence the process.

The promotion of local suppliers evolves around building their competitiveness. However, creating competitiveness is a difficult task that requires changing the beliefs of not only local entrepreneurs but also other economic agents engaged in the process. In turn, the belief system is shaped by the overall country context and attitude of international operators toward local businesses. The promotion of competitiveness of local suppliers requires addressing deep internal processes that are happening within the state and within private actors. This chapter observes different institutions operating at different levels – firm, industry and country level. The chapter finds that there are strong institutions that support localization. At the same time, informality, rent-seekers and weak economic bureaucracy undermines the development of local suppliers.

9.1. Relationship between institutions and competitiveness

Before examining the institutional framework it is important to discuss how institutions relate to competitiveness in general. The first stream of thought relates to the ideas of Hall and Soskice (2001) that institutional structure provides firms with opportunities to engage in specific activities. Countries differ by their political economy and this

creates grounds for a comparative advantage. In their discussion of varieties of capitalism, they argue that firms play an important role in determining the political economy in the country. The authors distinguish three channels through which institutions of political economy affect the behavior of economic agents: (1) institutions as socializing agencies (i.e. norms and conventions); (2) institutions as a source of power (i.e. application of formal sanctions); and (3) institutions as a matrix of sanctions and incentives to which actors respond in a predictable way. At the same time, the authors argue that though these channels help to explain the behavior of economic agents, they fail to reflect the nature of the strategic interactions between agents. The authors believe that institutions that alter the outcome of strategic interactions are the most important ones along which one political economy differs from another.

To explain their argument the authors place the firm at the center of their analysis. In doing so they make an attempt to connect microeconomics (business studies) to macroeconomics. Firms are key agents of adjustment and their activities aggregate into a general level of economic performance. They define firms as actors seeking to develop and exploit capacities to profitably develop, produce and distribute goods and services. In doing so the firm faces many coordination problems in establishing relationships with internal (e.g. employees) and external (e.g. customers) actors. This process of building relationships is associated with transactions costs, adverse selection, moral hazard and other problems. Overall, the success of the firm largely depends on its ability to effectively coordinate with a wide range of actors. More specifically, the authors define five areas of relationships that are core to a firm's competitiveness and in which firms must resolve coordination failures: (1) industrial relations – the outcome of this coordination is the productivity of the firm and general unemployment and inflation rate in the economy; (2) vocational training and education – at stake here are the skills level and general competitiveness of the economy; (3) corporate governance – solutions in this area affect the availability of finance; (4) inter-firm relations – coordination here will deliver technological progress and capacity of firms to remain competitive; and (5) relations with employees that condition a firm's competencies and the economy's production regime. Depending on how firms resolve coordination problems in these five areas, two types of political economies are identified. The first is the liberal market economies that coordinate primarily through hierarchies

and competitive markets. Hence, relationships are governed by formal contracts in a context of competition and market forces are very effective in delivering on the profit expectations of economic agents. In contrast, in the coordinated market economies firms rely more on non-market relationships to construct their core competencies. In these economies market equilibrium is not the outcome of the integration of supply and demand, but is the result of strategic interactions among firms and other agents. The main argument of the authors is: "In any national economy, firms will gravitate toward the mode of coordination for which there is institutional support." (p. 8) Hence, in liberal market economies markets are supported by the legal system that supports formal contracting while firms form hierarchies to coordinate problems that cannot be resolved by markets. In coordinated market economies the important institutions are those that reduce uncertainty by enforcement of (1) information sharing; (2) monitoring of behavior; and (3) sanctioning for misconduct on coordinated behavior. Examples of such institutions are the regulatory framework that facilitates collaboration and information-sharing as well as powerful business or employer associations. In addition to these three major institutions the authors note deliberation as an institution that facilitates collective discussion and joint decision-making. The important feature of deliberation is that it allows actors not only to identify risks and gains but also to resolve distributive issues associated with them.

Hall and Soskice (2001) conclude that firms in any political economy state face the set of institutions that are outside their control. In this setting the institutional structure not only defines but also conditions corporate strategies of the firms. These institutional structures could be located at regional or sectoral level but in most cases these are nation-wide institutional factors. Though both types of capitalism are capable of delivering satisfactory long-term economic performance, they vary by their capacity for innovation. In this respect, coordinated market economies are better to support incremental innovation – continuous but small-scale improvements. In contrast, liberal market economies support radical innovations. Hence, there are national patterns of specialization in activities that come out as a response to the institutional frameworks. In relation to policy-making the authors argue that in liberal market economies policies that sharpen market competition are more efficient, while in coordinated market economies policies should be aimed at facilitation of non-market coordination. In the latter, coordination-oriented policies

attempt to improve the competencies of firms. But such a form of policymaking is associated with high transaction costs, information asymmetry and time-inconsistency dilemmas.

The application of this analysis to the oilfield industry in Kazakhstan implies that the coordinated market approach is more beneficial for industry growth. However, it requires the development of supportive institutions on information sharing and industrial organizations that are capable of monitoring industrial behavior and sanctioning that is limited, given that MNCs are protected by the stability clause. The evidence indicates that these institutions are still very weak. As discussed, the policy to introduce information sharing is gaining traction and the important policy initiative in this area is the Alash database. The database is a joint initiative by the Ministry of Energy and three major operators – KPO, NCOC and TCO. Whether this database will turn into an institution for information sharing is uncertain, as the operators still rely on their own databases for the pre-qualification of vendors. Currently the Alash database is a policy tool that aims at increasing the visibility of local suppliers and provides access to information about oil operator's tenders for the registered local suppliers. In the area of monitoring of industrial behavior in addition to existing industry associations, like SMK, the new organization has been formed in 2018 – the Petrocouncil. This is the oil and gas industry strategic partnership development council that has a legal form of an association and is created under the premises of the Atameken Entrepreneurs Chamber and KazEnergy. The Petrocouncil has advisory and consultative functions and is designed to improve coordination between industry stakeholders including other unions, councils and alliances with the participation of Atameken, KazEnergy, Ministry of Energy, Ministry of investment and Development, PSA Authority and others. The Petrocouncil aims to increase the efficiency of the consolidated actions of stakeholders in developing the oil industry. The functions of the council include: (1) advocacy through representation of economic interests of oil service companies and oil operators for the fair and efficient development of the oil and gas industry; (2) work as a dialogue platform for industry stakeholders; (3) creating long-term partnerships, consortia, and cultivation of competitive local companies - contractors and sub-contractors – through highly specific and focused dialogue; (4) analytical and informational support to members, including access to information resources of Atameken and KazEnergy, media promotion of industry

successes and achievements of companies; (5) coaching and providing information on changes in industry legislation; and (6) cultivation of the positive image of the industry through proposals for state awards of prominent industry personalities. The PSA Authority is taking action to make procurement plans of operators publicly available and these are published on the Petrocouncil web-site. By now there are procurement plans for KPO and NCOC published.

The other stream of thought relates to the discussion of competitiveness as a general economic concept. Kowalski and Weresa (2019) summarize the theoretical aspects of international competitiveness. They rely on the definition of competitiveness as an ability to generate not only economic value – income and employment – but also deliver on social and environmental aspects of well-being. The authors distinguish between competitive ability and competitive position. The former is seen as an input to the ability of the economy to compete on foreign markets to achieve its competitive position. Hence, competitive ability relates to various factors, e.g. size and structure of production factors, socio-economic condition, international economic situation, etc. Economic competitiveness and its determining factors are subject to different levels of analysis: (1) microeconomic (firm level); (2) mesoeconomic (industry or regional); and (3) macroeconomic (the level of national economy). The microeconomic competitiveness is reflected in the position of the firm in the market. The authors note that the distinction between ex-post competitiveness reflected in the firm's current competitive position and ex-ante competitiveness that is the ability of firm to compete further. As Wang (2014) describes, the academic literature provides two major theories of competitive advantage of the firm: a market-based view and a resource-based view. According to the former, the industry environment and external market orientation are major determinants of the firm's performance. Under this view, the firm develops its strategy in response to industry factors to gain competitive advantage. Hence, a thorough analysis of the external environment works as a starting point for an assessment of the firm's competitive advantage. The resource-based view, in contrast, indicates that the internal environment of the firm drives its competitive advantage. There are various views on the types of resources that firms possess. As Wang (2014) references, the early scholars of the resource-based view defined three major types of firm resources are defined - physical, monetary and human. These further evolve into a more detailed

description to include organizational resources, technological resources, capabilities as well as categories of property-based and knowledge-based, individual-level and firm-level resources, tangible and intangible resources. Overall, the resource-based view concentrates on strategically important resources as the only source of competitive advantage. Distinctive or core competences are all things that make the firm successful in the market. Scholars within this view believe that it is hard for a firm to change its resources but redesigning the processes, routines and activities enables effective and efficient use of resources and allows firms to achieve their competitive advantage. For example, the capabilities-based view is an extension of the resource-based view and suggests that capabilities and not resources contribute to sustained competitive advantage. Hence, a firm could apply its capabilities to perform the task and gain the competitive advantage. At the same time, Wang (2014) notes that there is a strong link between internal resources of the firm and external (industry) environment.

Kowalski and Weresa (2019) note that the determinants of industry competitiveness are reflected in (1) intra-industry relations; (2) complementary and supporting industries; and (3) mesoinstitutional framework (e.g. business associations). UNIDO (2012) in estimates of its Competitive Industrial Performance Index (CIP) relies on the meso-concept of competitiveness – industrial competitiveness that is “the capacity of countries to increase their presence in international and domestic markets whilst developing industrial sectors and activities with higher value added and technological content.” (p.7) In this respect, improvements in industrial competitiveness are associated with learning on how to industrialize and continuous technological upgrade. The CIP Index is organized along three main dimensions: (1) capacity to produce and export manufactures; (2) technological deepening and upgrading; and (3) world impact. This approach allows the ranking of countries depending on their industrial competitiveness. An important point to note is that the CIP Index emphasizes development of manufacturing industries. In contrast to WEF competitiveness rankings, the CIP Index does not reflect the institutional dimension and does not indicate that these are irrelevant. As UNIDO (2013) clearly notes technological capabilities are integral to industrial competitiveness. Technological capabilities at the firm level are affected by factors outside the firm. i.e. meso- and macro-institutional framework, through which production, exchange and use

of knowledge happens. Such institutional support to the building of technological capabilities includes among other things: (1) basic industrial services – provision of finance, export services, management services; (2) technology information services; (3) standards, metrology, testing and quality control services; (4) R&D laboratories; and (5) productivity centers. UNIDO (2013) with reference to Lall (2001) notes that there is a triangle of competitiveness that builds on the interplay of incentives (domestic demand, industrial policy, macroeconomics, etc.), factor markets (technical skills, access to market and to information) and institutions (education, training, R&D, etc.). Hence, the CIP Index is based on these theoretical concepts and has a focus on performance rather than potential and does not reflect key drivers or factors (that also include institutions) that determine the country's competitiveness. The CIP Index directly measures industrial competitiveness and relies on quantitative data and structural economic variables. As a result, the index tends to be stable over short time periods as the process of technological learning is cumulative and takes time.

According to the CIP Index 2012/2013 report Kazakhstan ranked 70th among 135 countries and is far behind other mineral economies like Russia (36), Norway (31), Canada (17) and Australia (28). The general level of a country's industrialization is reflected in manufacturing value added per capita (MVApc). The ability of the country to produce goods competitively and keep up with technological changes is reflected in manufactured exports value per capita (MXpc). The technological complexity of manufacturing is captured in the share of medium and high-tech activities in total manufacturing (MHVAsh) while the share of these activities in manufactured exports (MHXsh) reflects technological content and complexity of exports. Industrialization intensity is captured in two composite indices: share of manufacturing in GDP (MVAsh) and manufactured exports share in total exports (MXsh). Two indicators measure the world impact of the country: share of the country in world manufacturing (ImWMVA); and share of the country in world manufactured exports (ImWMT). Values for these indicators are provided in Table 5. According to the CIP Index report 2018 there was no dramatic change in Kazakhstan's position in 2016 and the country is ranked 69 indicating that industrial competitiveness remains moderate.

Table 5: Competitive Industrial Performance Index of Kazakhstan, 2010

MVApc	MXpc	MHV Ash %	MVAsh %	MHXsh %	MXsh %	ImWMVA %	ImWMT %
346.39	767.39	6.84	13.48	39.96	21.13	0.076	0.112

Source: UNIDO, Competitive Industrial Performance Report 2012/2013

The application of the competitiveness concept to the national dimension is a widely debated topic. Some scholars relate a country's competitiveness to the underlying factors responsible for medium to long-term performance while others argue that searching the ways to increase the competitiveness through selective policies could be very costly and there is no sense to apply this macro-concept. However, despite the academic debate, the term is used to rank countries along the competitiveness dimension and WEF offers one such measure (UNIDO, 2013). Overall, the conclusion is that institutions affect the international competitiveness of a country.

Falkowski (2019) defines two channels of institutional impact on a country's competitiveness. One channel operates through the impact of institutions on transaction costs while the other evolves through the impact on social capital. Both of these channels determine the productive use of resources and impact the general productivity of the economy that is translated into welfare gains. The impact of institutions on international competitiveness could vary: (1) improve it by a reduction of transaction costs, enhancing of political, economic and social system; (2) deteriorate it; or (3) remain neutral. At the same time, international competitive ability has a real component (tangible resources and infrastructure) and an institutional component (regulatory system, governing principles). However, competitive ability and the position of a country is shaped not only by domestic institutions but also international (contracts, treaties, agreements). Hence, to be internationally competitive countries need to adapt to the environment they operate in. The role of institutions in driving international competitiveness of countries is captured in increasing use of the term "institutional competitiveness" broadly defined as the attractiveness of the general institutional framework to do business. Institutions in the area of production, capital, labor, technology and market regulations (e.g. taxes) jointly contribute to the institutional competitiveness of the country. Overall, the role of institutions is to

stimulate the specific behavior of economic actors in a predictable way and direction. The authors conclude that the impact of institutions on international competitiveness is reflected in how they guide actors to deal with transactions cost and the use of social capital.

At the same time, in a globalized world international trade is increasingly structured around GVCs and participation in GVCs is becoming an indication of economic development. Countries participate in GVCs to the extent that domestic firms are capable to link to these chains. Many developing countries use policies to support presence of local firms in GVCs. However, sustained participation in such chains is challenging. GVCs are highly dynamic, participating firms are under competitive pressure, and are consolidated around small number of global suppliers. For firms to enter the GVCs at any stage the minimum requirements on cost, quality and reliability should be met on a constant basis while buyers revise their procurement strategies to improve these elements of their supply chains. By and large the capacity of local firms to meet these requirements is affected by the institutional setting of the country. The institutional context is reflected in the skills level of the human capital, local standards systems, infrastructure policy and the degree of industry institutionalization. To link to GVCs developing countries need to improve along these major dimensions. Extractive industries due to their capital, knowledge and technology intensity have put local firms at a disadvantage and these are mostly engaged in low value-added activities (e.g. construction, maintenance, and non-productive functions). Key factors affecting the inclusion of local firms in GVCs of extractive industries are: (1) human capital availability – both professional and technical in adequate numbers; (2) national innovations system as extraction technologies are becoming technologically more complex; (3) energy infrastructure and services as in most cases extractive operations take place in remote areas; (4) improved public governance to control rent-seeking and corruption; (5) access to finance (Bamber et al., 2014). Hence, at the institutional level of analysis one can argue that a wide array of stakeholders are engaged in the upgrading process at the firm, industry and country levels and these levels. These are discussed in the next three sections.

9.2. Firm level institutions

International oil operators create a level of international competition in the domestic market and there is a need for local firms to learn how to operate in this market. The state takes actions for business to develop, creates entry points to the market, but entrepreneurial drive plays a major role. Much depends on the leadership and vision on how to build relationship with the customer, and the willingness to go forward and develop to meet the quality standards. It depends on the production culture of a particular enterprise and how it relates to complaints from customers on the quality. This is a very important internal mechanism and its efficient functioning could affect the learning process and accumulation of technological innovation and progress at least at the firm and industry levels.

The attitude toward addressing the faults and dis-functionalities has been explicitly addressed by Hirschman in one of his influential books *Exit, Voice and Loyalty: Responses to decline in Firms, Organizations and States* (1970). The way firms respond to quality deterioration is considered as a separate inducement mechanism. As Hirschman notes, in each society there are internal mechanisms that allow fixing misbehavior and dis-functionality. He offered the concept on how these forces work in the area of economics and beyond. Hirschman argues that firms and organizations are “permanently and randomly subject to decline and decay” (p.15) despite the existing competition or any other institutional framework that surrounds them. Hence, an ever-present decay activates the counterforce, i.e. endogenous recovery mechanism. Hirschman offers two alternative mechanisms – exit and voice. Exit is a market mechanism intrinsic to competitive markets and voice is more of a non-market (political) mechanism (p.19). Hirschman explicitly argues that exit (i.e. perfect competition) is not always a best option for a firm’s development and voice could be a much more efficient “recuperation mechanism” as it calls for the customer to make “an attempt at changing the practices, policies and outputs of the firm from which one buys” (p.30). However, voice itself is transaction costly and is relevant to substantial purchases (p.40). Exercising voice requires the presence of conditions that ensure the customer’s ability to influence the quality of the good. In turn, under the voice option the customer is also willing to invest the energy

(money and time) to help the firm induce a recovery mechanism (p.55). At this stage Hirschman introduces the concept of loyalty that works in cases when there is a strong attachment to an organization that "is so much like another one that is also available" (p.81). Hence, the development of firms and industry is subject to the presence of loyalty and voice and the use of these mechanisms for improvements in performance of firms rather than exit. The more loyal are oil operators to local producers the greater are the chances for wider business linkages. In this case, the promotion of loyalty and institutions that support voice could become a valuable strategy for industry development.

At the same time, entrepreneurs are the ones who could deliver the change. Though they act in the same institutional setting, however, business leaders differ by their belief system and thus demand different kinds of change. Some demand change in the rules to favor protectionism, while others are ready to compete openly but require better infrastructure and access to funding. The creation of conditions for entrepreneurs with producer-friendly aspirations is a fruitful strategy. This requires utilizing governance mechanisms that create a supportive environment for the emergence of such entrepreneurs. There is a type of entrepreneurs who rely on state support or support from operators to create competitive local firms. These entrepreneurs are ready to compete at the domestic market level and expand to other markets. Policy actions targeted at this creative type of entrepreneurs could be effective.

Hirschman (1958) argues that in each firm there are shortcomings that disrupt its efficient functioning. The list of such shortcomings could be very long one but Hirschman group at least three categories of deficiencies: (1) absence of growth mentality; (2) poor administration and human resources management; and (3) poor non-production process (i.e. marketing) (p.136). Hence, each enterprise is unique by its business model, its value creation process but most importantly by its production culture. Production culture is the complex system of operational, financial, organizational and business vision of the company. Productivity increase results not only from a technological upgrade but also as the outcome of a comfortable working environment that affects workers directly. It is not only important what the company produces, but how the production process looks and under what conditions people work. Within this system a special role is given to the leader and leadership. The

commitments of leaders, creativity skills, and intuition are important driving factors of building the production culture that brings success. The task of the leader is to create energetic and a goals-oriented team capable of producing a competitive product. The commercial success of the company builds on its people. Building such a production culture takes time, it requires changing the conventional way of thinking, creating the system of knowledge management and sharing experience. In the first stance, it requires leaders, innovators, who are ready to master their crafts and implement new ideas.

Based on the interview responses one can distinguish three types of enterprises depending on their approach to doing business. The first type demands protectionist policies with stable orders and closing market access for others. These rent-seekers are ready to act through political actors to seek stable orders and access to the market. Priority is given to stable order rather than competitiveness expansion and capacity remains weak. The second type of enterprises is already acting in a competitive environment and finds their market niche in a tough competitive environment. These enterprises already produce goods of the required quality together with the provision of maintenance services. Finally, there are companies that have a very progressive leadership, they invest in modernization, build their competencies and state support measures should increasingly target scaling up such companies. Such firms already operate in accordance with international standards, they produce competitive products and their production processes are organized in accordance with the best international practice. These enterprises are rare but still they are already in place: *"We are under API certification – there is a lot on ecology, on safety - already for a year, next year we will get it. We will be as other international companies; we will be seen as a real manufacturer. My dream. And if then in the future, someone could say - these guys have created the machinery industry, after them industry started to work, it will be the highest assessment of my work."* (Interview transcript 20)

Regarding the international operators, these are specially created entities based on the territory of Kazakhstan but having inherited all the governance features of its foreign shareholders. Their operations are subject to signed PSAs, their own internal regulations, and local laws. International operators are a consortium of leading oil firms acting internationally – Chevron, Shell, ENI, etc. All these firms have established operating rules shaped by the international nature of their activity. There are some underlying principles that these

companies follow irrespective of their geographical operations. Due to the global nature of their operations they have mastered their global governance framework. They apply this regulatory framework to the country context where they are operating. Though these rules are very stable but could experience change as a response to the host country context or a strong push from officials to remove or mitigate adverse social, economic and environmental impacts of MNC activities.

Local laws and rules are applied only in those parts that do not contradict the legal framework of PSAs. In this respect, norms on local content development fall under the regulations of the internal governance principles of operators, PSAs, and some limited number of domestic regulations related to local content methodology and reporting. These set of rules guide business relationships with local suppliers. In relation to local content, operators perform specific functions and follow the rules prescribed by their shareholders. There is evidence that operators differ in their attitude towards local content development: some are more active to invest and put in effort to engage with local suppliers, while others are less enthusiastic in their aspirations. Shareholders shape incentives of the operators to engage with local suppliers: *"... they all operate internationally, they have their expectations as well on how they want to act and what legacy they would like to leave behind in the country and how they would like to develop the country, they are not only extracting minerals but also leave something behind. And for them it makes also good business sense because then negotiations about new projects, new reservoirs are looked at. Each shareholder has a different priority of that: some shareholders do not think that this is an immediate priority and others are very active and influencing... Our governance model is such that all the shareholders need to be on board with their positions. What you see in the meetings with our shareholders and also the way shareholders influence each other that is where they often talk about local content as well. One kind of pushes the other. ... at the end they have to say – this is what we want you to do."* (Interview transcript 23)

Each operator has its approach to local suppliers that is driven by the approach of shareholders. Shareholders are important stakeholders and they are public companies that take obligations on local suppliers development not only as part of operations but also as the part of global corporate social responsibility. Large investors have their own vision on leaving the legacy behind their operations not only in training of staff, payment of taxes, but more importantly on building

local industries. Hence, shareholders contribute to local industries development, their aspirations are driven by the principles of fairness, desire to leave a legacy behind, international reputation, economic sense, and strategic behavior in anticipating future project opportunities.

Apart from shareholders, at the operational level, within oil operators there are different people with different degrees of commitments to the localization agenda. For example, if we take employees of oil operator there are people who consider localization not only as part of their job's task but because they have a belief system that it is fair and they are willing to help local industries to grow. Such people are based at different managerial levels and thanks to these people there are local suppliers programs and there are cases when subsoil users exceed their pre-set targets on local content only because such people add extra effort. There are also national staff with understanding that their children will be living in this country and when the oil will end there should be something left – a local economy that provides work for people and companies. On the other hand, there are also staffs driven by the task to ensure operational efficiency and a return on investments leading to low localization targets. Hence, the moral side of the issue – human agency and personal aspirations - is very important since when there are right people who could provide support, understand the situation and the importance of what they are doing, the situation could be changed in contrast to when such people are missing. Nevertheless, the work is underway and operators are open to dialogue because of the aspirations of staff at all levels to promote localization and there is an understanding that such large oilfields have to create greater in-country value: *"It is such an internal partisan work, we try to talk – let's pay attention to local suppliers. It depends on how to reach an agreement, negotiate, how to convince our foreign colleagues so that they turn to the local market."* (Interview transcript 26)

9.3. Industry level institutions

The oil and gas industry is important for the domestic economy as it drives economic growth in many ways. The most direct channel is

through payments of oil rents to the state budget. The other important channel is the contribution of the oil industry to the development of local industries. It was already discussed that local content could be costly in terms of production and transaction costs. In this situation, the state allocated oil rents to push its industrialization agenda. Local manufacturers use state support for modernization, training, technology transfer, and international certification, but this does not guarantee any supply contract with oil operators that use their own procedures for procurement. The number of competitive local suppliers working with oil operators is still small and the share of local content in goods is chronically low. Oil rents redistributed through procurement procedures of the oil operators favor only those local suppliers that managed to pass the qualification requirements. But the state lacks the enforcement capacity to increase local content in the procurement of major operators operating under the PSAs and has to make a choice between local content and oil rents. Currently the fact of supplying to operators is not considered as business efficiency criteria. The state provides support and financing in exchange for exports. Enterprises in core manufacturing industries are kept afloat for the sake of the industrialization agenda, including the ones in the oil and gas machinery industry, and if they are not suppliers of major operators, they are supported by state procurement through Kazmunaigas: small and targeted fixes are less costly than re-mastering the entire system. Thus, the expenses for state support for manufacturing industry represents only a small share of those oil rents received from operators. Under the current political economy, it is more beneficial to ensure the scheduled operation of major projects than to push on local content development in those projects despite all the potential positive externalities this could bring. As discussed in preceding chapters, local capacity development requires strong economies of scale, innovations, and technologies that are currently still missing. One of the assumptions could be that postponing development of oil projects until sufficient local capacity arrives is not an option for the current political leadership and for foreign investors either. Thus, the local absorptive capacity is improving but slowly, in stages, while stakeholders gather experience on collaboration and working with each other. This is summed up by an industry expert: *"To solve it effectively, I say again – coordination, political will, constant dialogue with operators. These are the three components."* (Interview transcript 31)

Meanwhile the industry and the state are searching for ways for increased cooperation. The Aktau Declaration was signed on 25th September, 2012 between Kazmunaigas, TCO, NCOC and KPO as a memorandum on an expression of support for localization and is a non-binding agreement on joint actions. The Aktau Declaration defined a list of goods, works and services, which need to be developed for oil projects with reference to timeline and goods specificity. However, it is not a rule but it is stronger than an aspiration and a clear commitment to act jointly. Still, it isn't implemented the way it was originally envisaged because there is a lack of coordination. There are stakeholders trying to push it forward and looking into the practical issues, but the process is not fast due to divergent incentives. One of the reasons for this is that the oil projects are at different stages of development and it is very transaction-intensive to move to a fully integrated procurement planning system for the purpose of localization. Still, such initiatives maintain the exchange of information at the level of the industry.

The Aktau Declaration calls for the development of mechanisms to improve the coordination and consistency of individual local content development efforts of operators, investors, and agencies. In doing so, a special Industry Task Force was formed consisting of industry stakeholders. The mission of this Task Force is to deliver the Blue Print on local content development and ensure its implementation by defining stakeholders, assigning roles and responsibilities, and drafting the implementation and resourcing plans and schedules. The functions of the Industry Task Force include the identification of areas of synergy, advance the outcomes of current local content development efforts and setting new tasks to contribute to the growth of local supply chain capacity. It is agreed that the Blue Print should not contradict the operator's existing subsoil use contracts, management system and procedures, or any other legislation⁷⁰. Thus, the task of the Aktau Declaration is to agree on joint actions to address local absorptive capacity constraints, harmonize procedures of operators in relation to local suppliers and create synergies. However, there is evidence showing that this is a more formal arrangement rather than a working rule. Still, it creates a formal ground to refer to it in various forums and meetings when it comes to reporting on local content progress. It looks

⁷⁰ <https://www.alash-kz.com/ENG/Aktau-Declaration-on-Joint-Actions>, accessed on 17 July 2020

like this arrangement is used as a reference mostly rather than practice and one can conclude that its institutionalization is not yet complete. An industry expert commented on the relevance of the Aktau Declaration: *"There is an industry initiative, for example, the Aktau Declaration, but I very much doubt its effectiveness. It doesn't work, in fact. There is no company that I know which was the outcome of the Aktau Declaration. I think it's just a reference document, it's not even an agreement, it's a Memorandum."* (Interview transcript 9)

The other important point is that, though, operators have the means to develop local industries and they are actively engaged in this process, the main task of any subsoil user is the extraction of minerals. Building local industries is not the main business of the operator and does not constitute the core of its operational activities. All supplier development programs are happening at the back of ongoing operations on resource extraction. In some cases operators are constrained by their project schedule that does not allow development of accompanying local production facilities. Though, operators are long-term investors, this is not to say that they would engage in the provision of public infrastructure, improve access to finance, etc. They will not take on the functions of institutions that are missing because it interferes with their core activity. Thus, dealing with market failures is outside their agenda because when there is no local capacity they will direct their demand towards imports. Especially now when oil prices are low and even with the strong push from authorities, the operators have to rely on economic sense. They can positively contribute to domestic services, for example, but the promotion of production facilities requires much more effort and stronger commitment. The other question is when the local absorptive capacity is present but weak. Under these circumstances, operators could decide to engage with local suppliers and take such decision based not only on economic sense. We have already discussed that they do contribute to building the capacity of the local supply chain by different types of tools and governance arrangements. But the operator's activities on local content development are shaped not only by the aspirations of shareholders but also by their perception of the capacity of local business and its potential. If there is a desire to contribute to the development of local suppliers, the dialogue starts with products that operators are ready to consider for local sourcing. As a rule, at the beginning these are mainly technologically unsophisticated products because for operators there are certain risks - new suppliers, there is no trust yet. After gaining the

experience of working with local suppliers, the move towards more comprehensive products is possible depending on the local capacity. However, it might be the case when this dialogue does not progress further. Operators do impose strong selection filters on suppliers by the use of their procurement procedures. On the other hand, rent-seekers use the existing support level to enter the supply chain of operators. In some instances, operators do opt for lower local content targets in cases when the rent-seeking attitude of local businesses becomes unsustainable.

Rent-seekers constrain industry development as operators face their hidden agendas to make easy profits. To deal with these hidden agendas, operators often are forced rather not to meet the target on local content and have a tough discussion with the authorities. In most cases the operator is driven by operational efficiency to ensure the right price and quality. There is a very thin line. If one pushes local content too hard when absorptive capacity is weak, oil operators turn to local sponsorship. Hence, localization is a dynamic process, it starts with considerations on sustainability of local business that is achieved not immediately but there should be a clear sign that over time it becomes sustainable. This is the entry point for an operator when it decides to pay a bit more if the local production demonstrates a high degree of sustainability and over time the operator receives the right quality with the right price. When sustainability is not present, the operator faces the situation in which it has to sponsor the plant again and again from year to year. In this situation, the operator would rather engage in sponsorship, social investment projects and expand its budget on social investments and refrain from the market support. Hence, the interplay between local industry development and social sponsorship is important and for localization to take place there needs to be a business sense, maybe not immediately, but over time. When rent-seekers enter that field, their strategies do not result in mutual benefit and constrain industry growth. One oil operator explains the situation: *"Some people talk about local content as rich oil companies and shareholders, that help poor people to develop local content. But very rich people own all these plants, much richer than me, and that is capitalism, and we are part of it, you should not do social investments for those people. You asked how can I get together with those people? Make sure that those, I say rich people, investors, create the capacity that is helpful for us and they generate work that local people can find the job and get training, get progressed. And then the country will be better off."*

But if it leads to investor kinds of pop-up shop that says – I do this project and operator sponsors me and I can move to somewhere else again – that is not a proper local content development.” (Interview transcript 23)

Local sourcing in most cases is aimed at import substitution. When local companies fail to enter tenders of major operators they can turn to other national and private oil companies as well as turn to exports. At the same time, local suppliers face strong barriers from neighboring countries – Russia and China due to their protective policies. But producers from these countries face a less protective regime when entering Kazakhstan’s domestic market. Strong competition in the local market and limited opportunities to export in neighboring markets constrain local absorptive capacity further. Kazakhstan's accession to WTO, as well as the deepening of economic integration within the post-Soviet region – Customs Union, Eurasian Economic Community - entails significant challenges for state policy on the development of local content. Growing regional and global integration increases competition in the domestic market and creates threats to the activities of a number of domestic producers

9.4. Country level institutions

The process of creating backward linkages needs to be properly administered and the state has created an organizational framework to deal with the promotion of local industries. Coordination failures do indeed take place as different agencies and ministries are involved in the process. But the main issue is whether this bureaucracy is delivering the output and performing the task properly. The evidence shows that the capacity of this bureaucracy is still weak. Beside the fact that various agencies and ministries operate under conflicting interests between each other, the overall capacity of economic bureaucracy is constrained by low qualification, lack of proper understanding of the industry, constant rotations of cadres and as a result policy implementation follows myopic strategies when the result is demanded immediately.

There is an understanding on the state side to deliver an effective investment policy, but there is not yet an understanding of the realities of production processes in general. The approach to industry

promotion is very formal. Industrial programs after formulation and approval are often substantially amended because the government realizes the fact that due to the crisis in the economy, program targets are not feasible. This is to say that there is a need to improve the way policy targets are formulated. On the one hand there is a move to create a supportive regulatory framework and promote openness and transparency through horizontal policies. In practice, the state apparatus needs to report on the progress and bureaucrats have no time to wait for long-term results. The myopic attitude creates adverse selection of projects for development. Hence, instead of systemic work on the development of the industry, bureaucrats are trapped by the need to perform on short-term reporting. A high degree of demonstrative formalism is present. One representative from a state agency illustrated the current practice: *"Everything needs to happen here and now. Therefore, they take any first businessman and "push" him literally in all areas. On the contrary, we need to create an environment so that suppliers can work on their own, and if there are violations, then deal with them. And respectively here this does not occur. And among businessmen there is an opinion that it is all made for "window dressing". Trapped in this situation."* (Interview transcript 5)

The state apparatus itself suffers from low staff qualifications, small salaries, while the workload is enormous. This disrupts the work of the administrative machine and affects the quality of policy implementation. There are cases when civil servants are lacking technical education to understand the localization issues in detail. An industry expert understands this: *"Perhaps, we need the strong will and people who understand how to do it. But there are very few experienced managing personnel."* (Interview transcript 9)

The evidence shows that the old political regime inherited from the Soviet Union and characterized by informality and neopatrimonialism has found its ways to adapt to the new economic regime. This combination interferes with the building of competitive enterprises. Non-transparent networks and rent-seekers approaching political elite affect economic rent allocation. The evidence does not indicate directly how this process looks from the inside, but it clearly shows that it is possible. A local producer understands this situation clearly: *"We need to break down the old mechanisms, the old structures, they still interfere. In terms of thinking. Approach to business. The old structures that a business can earn on corruption."* (Interview transcript 21)

There are various reasons why this is happening. Slow institutional reforms with high civilian inertia dampen the demand for accountability and transparency while supporting informality. Economic information related to progress on investment projects with state support is limited even at the level of ministerial reports. There are only some short messages of disappointment with failing industrial *start-ups* of the state, however, it has not yet become convention. All these contribute to informality. The political elite is a very small and stable group of people and has direct access to the rent allocation process. Economic decisions are in most cases orchestrated from the top and get approval through the network of pre-allocated managing seats. One of the richest businessmen of the country - the son-in-law of the first President - heads both the Atameken and KazEnergy. The oligarchic structure of the economy with a small and stable political elite, creates favorable conditions for only those politically favored to be able to build businesses and grow beyond the scale of an SME. The evidence shows that using administrative push is still a fruitful business strategy. An industry expert commented on the unfavorable situation: *"I could name dozens of businessmen who are not entrepreneurs, they are thieves and grabbers. And they are still considered successful businessmen."* (Interview transcript 29).

When demanding for local sourcing the state needs to balance its interest between timely and successful development of oil projects, as these are still major contributors to the budget, and expansion of local industrial production. For example, the exemption from import duties is a very sensitive issue as it affects the project budget but at the same time impacts the price competitiveness of local production. Hence, there is a dilemma in choosing between rent extraction and manufacturing development. In the current setting, a higher preference is still given to rent extraction while local capacity remains weak. Once there are a critical number of competitive enterprises in place, the emphasis could change to local production. Until then the state provides support to local firms from oil rents and works with operators. Thus, the linkage theory works in practice and the progress in this area largely depends on governance while the evidence indicates it remains weak along many dimensions. Political economy is the other factor that impacts industry development and corruption remains the major development constraint not only for the industry but also for the country. A state agency representative calls for reforms: *"In order to implement all the ideas, we need structural reforms. The theme of the*

local content will not be developed until there are structural reforms. An independent judiciary, until the whole system is built, the industry will not shoot.” (Interview transcript 19)

At the same time there is demand for stronger political will and commitment to industry development. The commitment of political leaders at the highest level is believed to be the most efficient tool of industry promotion. It is hard to understand whether it is a search for protectionism or a request for fairness in the process of intense competition. In any case, the execution of political will in Kazakhstan traditionally does not face any resistance; it can be very strong and powerful. Political will can help overcome entry barriers to the supply chains of oil operators, and there are indeed cases when enterprises with personalized political support prospered for many years engaging in those large projects. At the same time, there is evidence on the commitment from political leaders to push for the development of local industries. It starts from the top with a very strong impulse and transfers through the levels of governance but by the time it disperses to lower levels and individual enterprises it loses its strength when faced with the governance mechanism within operators or combined with other market failures and weak economic bureaucracy. This creates the situation when individual enterprises observe different levels of political will: some argue that the state is committed and political will is pushing the industry, while others believe that the industry is left to drifting on its own.

Political leadership and bureaucrats fail to overcome the myopic attitude in the rules creation process. The newly adopted laws and rules are often aimed at solving only operational problems in the economy. The ambitious agenda forces bureaucrats to pursue high international ratings without paying much attention to content and implementation of policies. Solutions to long-standing issues are delayed due to rent-seekers. This selective promotion suffers from adverse selection and lowers the efficiency of industrial policy. The lack in capacity to deal with the existing constraints in the presence of an ambitious goal leads to contradictions and imbalances among rules and policies. Hence the move toward higher institutional quality in the economy and polity becomes constrained, and the status quo persists. The overall assessment of the institutional setting is considered as much distanced from the one required to reach the ambitious aim of joining the TOP-30 advanced economies by 2050.

Summary

This chapter has demonstrated the variety of institutions that affect the development of local suppliers. It shows that these institutions are allocated across different actors and levels of governance – some fall under global or national governance (like aspirations of shareholders), others exist only in the minds of local content managers or state officials, and a third group are guiding entrepreneurs. Depending on the belief system the people engaged in local content have, it will affect their actions. These incentives vary: some are driven by patriotic feelings, while others do not go beyond the tasks prescribed in operational instructions. Overall, human agency cannot be excluded in the analysis of fostering local competitiveness as weak commitments could have very strong implications. They can start with language barriers, foreign engineers mentality and lead to less aggressive local content departments operating on low targets. Thus, all stakeholders have their own guiding principles for economic action and these might differ: politicians are interested in overall economic stability, operators in fulfilling the expectations of shareholders on investment returns, local suppliers in profits from supplies to operators, and bureaucrats in keeping their positions, etc. Irrespective of their location within the governance framework they all affect the development of local suppliers, as this is created as a result of aligning actions and efforts of all actors engaged in the process.

The multi-dimensional nature of local supplier promotion calls for the emergence of some overarching institutions that would guide industrial transformation as a common idea shared by all stakeholders, i.e. producer-friendly institutions as mentioned in the conceptual framework. These are the kinds of institutions that could unite and direct the commitments and aspirations of all stakeholders to build local absorptive capacity and increase the competitiveness of local suppliers. The task of such institutions is to create incentives for stakeholders to share aspirations on localization and take actions to properly implement it. Probably, if the state had pushed development of these types of institutions then there would be more confidence in stakeholders' perceptions that others are openly committed and the market is developing efficiently. In the absence of such institutions, stakeholders are concerned by non-transparent rent allocation, informality and uncertainty about commitments of each other that

constrains development of business relationships: it becomes unclear who does what. As a result, the lack of high level institutions that guide the activity of all stakeholders towards the common aim of developing local industries, there is a great uncertainty on what incentives process participants have. In this situation corruption, favoritism, formalism and rent-seeking have more chances to discredit initially good intentions of stakeholders. Thus, there is a need to create and supply high-level institutions that control opportunistic behavior but favor responsibility, accountability and transparency of economic activity to ensure equal access to the market by competitive and committed producers. In this setting, the state becomes a meta-governor that creates conditions for development of markets by improving coordination, fostering collaboration and joint action at all levels of governance.

The current setting is not yet equipped with the presence of such institutions. One can think of two possible reasons for this. First-of-all, the state is not yet fully capable to foster shared ideas on local sourcing as political institutions still allow informality and rent-seeking. Second, installing shared aspirations require economic grounds and in the current political setting extracting rents from operators is more beneficial than creating conditions for local industries development: development of industries is a lengthy process and they are not able to produce as much return as crude oil exports in the short time period to buy in electoral support. Though major oil projects create a large demand to stimulate local production of oil and gas machinery and equipment, the overall conditions for manufacturing development are poor due to high production and transaction costs. Addressing these issues requires again state actions but the capacity of the state is limited and it cannot overcome the myopic attitude of bureaucrats and political leaders. As a result, the political will and state capacity are strong enough to create the organizational framework, but it is not enough to improve governance mechanisms and ensure efficient policy implementation. In this setting, the state strategy is to supply organizations rather than the institutions needed for addressing the development constraints. The state acts as an authoritarian bureaucratic machine to perform the tasks that it has set not paying much attention to the resulting value – that is the best use of human, physical and financial capital to create competitive local suppliers. Thus, the process prevails over the idea. The idea of local sourcing faces strong obstacles in its implementation due to lack of institutions that

favor the process, as a result backward linkages are unfolding rather more slowly than desired.

Kazakhstan finds it challenging to move away from the economic regime of resource extraction to the diversification mode. The former installed strong institutions (political and economic) for rent-seekers and settled strong path-dependencies. Diversification efforts are not fully institutionalized at the economic and political level, reforms are only partial as formal rules lack proper implementation and are further constrained by the informal institutional environment. In Kazakhstan despite the active policies, reforms are only partial while old political institutions contribute to keeping the status quo.

Chapter 10. Discussion of findings and conclusions

10.1. Interpretation of findings

Achieving deeper localization levels in the supply of oil and gas machinery and equipment faces strong obstacles in Kazakhstan. Such a challenging task is inseparable from building the capacity and competitiveness of local suppliers. The emergence of competitive local suppliers benefits the stakeholders involved in the process in many ways. Commitments to deeper localization enables major international operators to strengthen their positions as investors interested in the long-term development of the country, and it allows local suppliers to expand on the range of competencies and contribute to overall industrial transformation of the economy while the state fulfills its diversification agenda. Despite its clear advantages, the process is evolving slowly and not without friction.

The evidence shows that constraints to reaping the benefits of ongoing oil extraction for local supply industries have different sources. They start from the lack of production facilities that satisfy the high technological, environmental and economic requirements of international operators and extend to issues of information asymmetry and limited access to finance. All these combined together result in a weak absorptive capacity of local suppliers. Weak absorptive capacity is not a separate reason on its own but a combination of factors that limits the ability of local producers to win tenders and participate in the supply chains of international operators. Weak local absorptive capacity is a root-cause of low localization that in turn leads to weak progress in developing backward linkages and slows the process of industrial transformation. This situation is the outcome of existing institutional and governance arrangements despite the active policies.

The expansion of local competitiveness requires policies to supply supportive new institutions and strong governance practices. Within this framework policies are addressing the question of what should be done, while governance is responsible for how this should be done to lead to institutional innovation. In turn, institutions solidify existing practices and behavior patterns of economic agents. Placing local suppliers in enabling environment would allow capturing the

positive spillovers from oil extraction. The evidence indicates that such enabling environment is not fully in place in Kazakhstan and there are intrinsic shortages in each element that undermine the flow of the virtuous circle and leads to sluggish progress in the development of local suppliers for the oil industry. However, this is not to say that the framework is not working. But this is to say that it could do much better and promote faster building of backward linkages. Hence, there is still much unrealized potential that exists within this framework.

Each of the variables - policy, governance and institutions - adds positive motion to the process as well as operates as a stumbling block. In the first place, state policies add an important impetus to dynamically push the process. State policies have been introduced both at the horizontal level and by the use of selective targeted tools. If horizontal policies are called for the creation of a decent business climate for the overall promotion of entrepreneurship and improve conditions of doing business, vertical policies are aimed at addressing constraints faced by priority sectors or even individual enterprises. The important feature of increased state activism is that it is accompanied by growing bargaining power and capacity of the state backed by evolutionary learning. This has allowed the state to execute greater authority (combined with the periods of resource nationalism) over time toward changing the procurement procedures of international operators and demand for more local sourcing as well as improve its regulatory framework. As argued by Heikkila and Gerlak (2017) learning could be intrinsic to institutional change or policymaking. It is an essential element for effective governance that allows grasping the complex nature of issues that require state actions and improve approaches to address those issues. Based on different views on learning as a phenomenon that exists within the governance literature, the authors offer their own definition of learning in relation to governance. Learning is both: "(1) a collective process, which may include acquiring information through diverse actions (e.g. trial and error), assessing or translating information, and disseminating knowledge or opportunities across individuals in a collective manner; and (2) collective products that emerge from the process, such as new shared ideas, strategies, rules, or policies"(p.226). Hence, learning is both an outcome and a process. The authors note that the products of learning could be of different types. As an example of learning products types, they provide a typology offered by May (1992) that includes: political learning about the strategies or tools to influence policy;

instrumental learning about the feasibility and effectiveness of policy implementation; and social policy learning about a social construction of a policy issue. At the same time, policy learning could be also very conservative and does not always lead to innovations. The existing political setting and circumstances could lead to knowledge hierarchies that lead to policy failure rather than to policy learning (May, 1992). Among the factors that influence learning, the cognitive characteristics of individuals play an important role in shaping the learning process. Actors filter information through the system of their beliefs and discard information that conflicts with those core beliefs. This process gives rise to the phenomenon known as “biased assimilation”. Accordingly, beliefs and political interests deter learning even in cases where actors strive for informed governance. (Heikkila and Gerlak, 2017).

In relation to Kazakhstan, the empirical evidence shows that positive policy learning took place and resulted in the highly calibrated policy tool-box to address the constraints of local suppliers. Drawing on the lessons from the state’s experience in dealing with foreign investors and the impacts of oil extraction on local industries, the state has intensified its local content policy. The strong push is coming from political leadership and stricter regulations to support local sourcing. Hence, the knowledge on local content development had been accumulating over time and resulted in a policy change. The evidence indicates the remarkable strengthening of local content policy after the financial crisis with the introduction of major rules and targets. One would argue that this is not a result of learning but a manifestation of increased resource nationalism. Even if this is the case, policy actions are based on a strategy to increase the share of the country in oil revenues and create conditions for spillovers to the wider economy from oil extraction.

The other positive feature of the existing setting is that in addition to state policies, private actors play an equally important role in industry promotion. The redistribution of oil rents is happening not only by means of fiscal linkages through the state support programs financed from the budget but also through the procurement policies of international operators. The evidence indicates that there is a clear economic sense for international operators to engage with local suppliers that is complemented by strong commitments of some of the shareholders – leading international oil companies - to contribute to the development of local industries and economies as a part of their global corporate social responsibility policy. International operators

have their own local content policies and development programs. The governance of local content development is targeted to engage with capable suppliers only, and in turn this has had a disciplining effect on local suppliers. Hence, the entry ticket to a supply chain of international operators is costly (in all means – time, money, and effort) but it prepares local suppliers for international competition. Exchange transactions with international operators are highly relational that require adaptation to their technical, operational, administrative and organizational needs. Thus, transaction costs for both sides of the exchange are high. In this setting the state rightly stays away from directly influencing the governance mechanisms of international operators and allowing them to define the terms of exchange with local suppliers. One particular reason for this governance mode is due to limited state capacity to assess the risks of oil operations and a capacity to accommodate all the transactions costs associated with exchange transactions with international operators. Any mistake in this operational process could lead to dramatic cost implications. Thus, in governing this market the state relies on the private governance mechanisms of international operators. The state does not dictate how and on what terms transactions should be undertaken and leaves allocative decisions to the private sector. This approach is referred to as governing through the market. In this setting, the market is open to competition, including to international competition. The role of the state in this process is to supply rules, public goods (e.g. infrastructure), ensure that competition is fair, and that local suppliers are not discriminated against. But this is not to say that the state is keeping its distance from steering the market. Given the weak local absorptive capacity of domestic industries, leaving the industry development to market forces is not a plausible strategy. The state does take actions to bring down production costs (reimburses expenses on international certification, provides access funding, grants on technological upgrading, etc.), lowers transactions costs related to information asymmetry, and introduces some market-enhancing policy tools, like CT-KZ certification. At the same time, the move from governance based on competition to cooperative governance would add more dynamism to the process with competitiveness on price and quality to remain as a guiding principle. However, utilizing this governance mode requires a change of governance arrangements on the state side and within operators to institutionalize cooperative procurement procedures. The pilot agency, the PSA Authority, which is responsible for monitoring the

progress and support of national interests, plays an important role in this process.

The greater role of private governance in the development of industry opens up prospects for the emergence of the other important institution – state-business relationships (SBRs) – relations between public and private sectors. The forms of the SBRs vary significantly; they range from formal to informal arrangements. The welfare-enhancing role of SBRs is supported by a helping-hand model under which organized bureaucrats engage in steering industries and often have strong ties to entrepreneurs. This helping hand model offers the rationale for an effective role of SBRs in the growth process through effective communication. Hence, effective interaction of private and public actors complements the price mechanism and contributes to industrial development. In this setting, the pilot agency is taking this function – the PSA authority is deeply embedded in the governance framework of the oil operators. Effective SBRs are based on some overarching principles. The list of such principles varies from scholar to scholar, but at some higher level of generalization they favor embeddedness, transparency, accountability, commitment, and political leadership (Lemma and te Velde, 2017). Under this setting, SBRs could take the form of *embedded autonomy* (Evans, 1995) that proved its effectiveness in the industrial transformation of the East-Asian countries. There are also ideas on *visible* and *invisible handshakes* to describe governance mechanisms as means of “societal steering toward collectively negotiated objectives through interactive processes” that assume formal interaction as well as employment of social capital (Nielsen, 2017, p.341). The evidence shows that public and private actors connect at various platforms – forums, meetings, exhibitions, etc. Private actors are actively engaged in consultations on formal rules creation through the network of industry associations. The Aktau Declaration is perceived as an example of a formal handshake aimed at formalizing joint decision-making and joint actions on local content development. Evidence on informal handshakes is hard to obtain. One particular example could be a process of consensus search on local content targets that happens between the pilot agency and international operators. Still, SBRs are not always effective. In the absence of one or even more of the guiding principles mentioned above, SBRs could add little to economic growth and firm-level productivity.

The move toward collaboration and deliberation is the other positive feature of the existing system suggested by the evidence. Under

an ideal scenario, collaborative governance could be a good source of policy innovation and work as a standard approach to policy-making. Collaborative governance goes beyond stakeholders' engagement or market consultations. It assumes that all aspects of policy design and implementation – from goal-setting to outcome evaluation - are the result of highly inclusive joint decision-making. At the same time, collaborative governance does not necessarily rely on fixed policy structures or procedures. It rather suggests a more procedural elasticity that allows utilizing flexible, adaptive and emergent mechanisms to direct diverse interests through collective diagnosis and policy recommendations for the formulation of problem-driven solutions with sustainable benefits. Still, the efficacy of collaborative governance is highly driven by the context that embeds mutual respect, interdependence, and fosters deliberation and debate, promotes credibility and legitimacy that allows stakeholders to “walk in each other's shoes” and gives “a fair shot to argue their position and convince their colleagues” (Gash, 2017, p. 459). The evidence indicates that the state is supplying formal institutions to foster collaboration. The National Chamber of Entrepreneurs “Atameken” was created to allow organized interactions between private and public actors and between businesses. Industry associations – Union of Machinery Producers and KazEnergy in particular - provide platforms for joint discussion of industry development constraints. The move toward fostering more collaboration is driven by the desire to increase efficiency of state policy by taking informed decisions, increase state capacity, and address policy shortfalls. With ongoing regional and global integration, there is a strong rationale for turning to a greater collaboration. Still, deliberative dialogue is limited while the level of trust, mutual incentives and interdependence are still too weak to make a step into collaborative governance.

Despite the mentioned positive features, the existing system entails strong constraints that impede its dynamism. Though the evidence indicates that the state has a limited authority to directly intervene in the market and governs through the market, this is combined with general weak state capacity to implement policies. The evidence indicates the weak economic bureaucracy that is not capable to manage economic cycles and provide macroeconomic stability, ensure consistency and credibility of policies. Under these conditions the state capacity to address market and coordination failures is limited by its inability to properly implement policies. Hence, the effectiveness

of the government's industrial policy diminishes. Within the state itself there are coordination failures that lead to inconsistencies of policy decisions. At the same time, as theory and country experiences show the role of the state in economic development is very important. The most direct contribution of the state to development comes from Weberian type bureaucracy or "entrepreneurial bureaucrats" as coined by Johnson (1982). To address this issue there are ongoing civil service reforms called to build the capabilities of civil servants, increase the quality of the civil service, and its efficiency, transparency and accountability. One important feature of the quality of the civil service is its independence from polity. The evidence strongly indicates this is not the case here. In the current setting weak state capacity requires further investments in development of the bureaucracy to support the take-off of local industries and expansion of the private sector that still remains relatively small and underdeveloped. Hence, economic development requires, in the first instance, development of the state capacity and its ability to introduce the right policies.

The major stumbling block then is broadly political economy that inhibits development on the governance and polity side. The political leadership in the development of the country introduced the approach "economy first, then politics". Under this approach the building of economic institutions is prioritized and is ahead of transformation of political institutions. It was positioned by the political leadership that once the country reaches a substantial level of economic wealth, the relevant political reforms follow with reference to advanced western democracies. The evidence shows that informality and patronage practices are still in place. It also indicates the need for stronger commitments and political will to push industry development. The demand for political will and commitment obtained from the evidence is interpreted as a request for greater order and state authority to enforce fair competition, remove corruption and stop favoritism and patronage practices. In this setting a small and powerful political elite is closed and is directly involved in resource allocation. This allows for a lower level of accountability and transparency. Economic institutions fall under these political interests. As a result, despite the desire to increase the role of the private sector in the promotion of economic growth, it is only marginally involved in policy formulation: all strategic decisions are decided behind closed doors. The major oil firms have direct access to the state. People closely connected to the political elite control the organizational framework

that serves engaging with the local business. Though, the general accessibility of the state has improved, still the level of informality is high. Close relationships between business and the state do not yet transform into productive collaboration and ties with the business community are not equally distributed. Despite the ongoing small fixes to the political system, the overall political status quo is being conserved. In this setting, there are numerous government programs designed to address a wide range of social, economic and political issues, but the effectiveness of such programs is constricted to please the political leadership and the bureaucracy. Fostering localization, therefore, requires political will not in the form of declarations but commitment to supply high-level institutions – economic and political – that overall foster productive activity in the country.

It is important to note that economic development is integral to the general perception of the national identity. There is the program on modernization of the national identity *Rukhani Zhangyru* initiated by the publication article of the First President on 12th April 2017⁷¹ related to the transformation of social values. The central idea of the article is that political and economic modernization is not sufficient to achieve the status of one of the top-30 countries by 2050. The important support to the realization of this national idea is to arrive at it from the modernization of national identity – perceived as a crucial driver of the development process. The article outlines the main directions through which modernization should happen. It begins with the competitiveness that is achieved not only at the national level, but also most importantly at the level of each individual. State efforts are aimed at the promotion of Kazakh culture and building its attractiveness among other cultures. At the same time, the country introduced a dramatic devaluation of the national currency, dollarization of deposits in the banks reaching almost 50%, the average nominal wage around 400 US dollars but the most common wage level is around 200 US dollars. Many qualified specialists opt to migrate outside the country due to low wages. The divide between the wealthy and the poor is expanding after the last financial crisis as the economy faces much lower levels of economic growth. Thus, the state takes action to cultivate Kazakh culture while economic and social conditions

⁷¹ "The course to the Future: Modernization of Kazakhstan's Identity", at <https://www.akorda.kz/kz>, the official web-site of the President of the Republic of Kazakhstan, accessed on 18 July 2019

to live in the country are weakening. This is to indicate the formal approach to reforms when actions are taken for the sake of the idea and not the outcome.

The evidence indicates an increased role in public-government relations in Kazakhstan. At the same time forming an effective and organized partnership with society requires a number of fundamental pre-conditions to be present. First-of all, overcoming the social inertia could be a major step to increase the level and quality of interaction. Social inertia is still strong and allows keeping the status quo by weak public participation. Modern communication technologies are an important tool in organizing the people for collective action and even a protest. Still, these remain constrained as the media is under control, while demonstrative public meetings with social activists exclude any open discussion of embarrassing issues of poverty in the society and criticism of public policies. The next area relates to the creation of access to information and increasing the general level of accountability and transparency of policymaking. The society needs to be well-informed on policy progress and information should be full and logical. Thus, there should be a social demand for transparency and accountability. These will form the basis for a proper working system of checks and balances that is still weak. Lastly, state inclusiveness, its openness for the public dialogue, and its interest in the feedback on the reforms, coverage of all members of society through benefits from introduction of the policy plays a role. In Kazakhstan, the state positions itself as socially responsible since the bulk of the state budget traditionally is directed towards social expenses. At the same time, the fact that the First President had dismissed the government in February 2019 due to growing social disappointment with the government as citizens gathered in state buildings and called state officials to appear in front of them, indicates that policies related to distribution of incomes and increasing the quality of life are still weak. In this setting, the social contract between the state and the electorate that seems to have been working in the last decade started showing weaknesses as incomes continue to decline and policies are not meeting expectations of the society.

Despite all the progress achieved so far, it is not enough. The current reality shows that the existing set of institutions that induced the growth based on resource exports now act as stumbling blocks. Political institutions hamper structural reforms while the society demands further change in the living standards. In the current context

of Kazakhstan, finding the way to securely transit from current limited-access order to open-access institutions that are associated with higher levels of economic growth, the initial condition for such transition is to apply the rule of law to elites that opens the way to impersonal relationships and impersonal delivery of public policies, goods and services, i.e. rules are applied equally to each citizen (North et al., 2009). The active state policy driven by an ambitious development agenda, inspired by international experience and push from international society toward sustainable development evolves around the supply of new organizations rather than institutions. In the existing system, political development is behind economic development that creates the grounds for booms and busts and makes growth less sustainable but the society has already undergone some level of transformation and demands more change. Political institutions fall behind economic institutions and act as an impediment to the introduction of governance arrangements that target accountability, transparency and deliberation. A limited synergy between economic, political and social organization constrains this necessary change. It removes the dynamism not only from the framework of development of local suppliers, but more generally, from the growth process of the entire nation.

10.2. Key messages and proposals for future research

This research embarked from the ideas of Hirschman on the industrialization process in developing countries. He sees this process remarkably different from the experience of advanced economies. However, the important note is that though Hirschman explicitly focused on developing countries, his views reflect largely on the mechanics and drivers of the growth process and are applicable to any country. His vision of development is much broader than instructions for developing countries on how they could build their catch-up strategy.

Going back to one of Hirschman's central propositions – the concept of unbalanced growth – and the application of this concept to the case of Kazakhstan, the following conclusions can be drawn. Hirschman sees the development process and industrialization

specifically as a sequence of disequilibrium that eventually brings the country to a new steady state. In his approach, developing countries could utilize backward linkages in order to reach higher levels of industrialization: establish the last (demand) industry as the first and import intermediate goods but then gradually move to domestic production of those imported goods driven by demand pressure from the master industry. Following this sequence, it is possible for developing countries to approach the higher level of industrialization. Thus, imports give strong impetus to support and guide development actions. This idea is contrary to the dependent development view when developing countries are opting for a large-scale import-substitution to stop imports and escape being used by advanced economies as markets for technological goods. This is exactly what Hirschman sees as an unwanted scenario as there are too many development constraints that would hinder this. Instead, he offers to use imports as a driver and develop a domestic comparative advantage in those imported items. In a simplified form this basically means that the country will build its own competitive domestic producers who are capable of substituting the imports but also keep exporting. However, as this research finds, to break through to this point when local producers are highly competitive is an extremely hard task. For countries that have a low state of industrial development utilizing this path is associated with importing almost everything and this in turn affects the production costs. This happens because there are too many market failures and as a result the dynamics predicted by Hirschman does not arrive. Thus, even if the country is willing to take the shorter path to industrialization as suggested by Hirschman and utilize backward linkages, it is still tremendously hard in reality: restoration of the new equilibrium might not happen at all.

There are many reasons why this might be the case. Missing economies of scale, high production costs, expensive capital, coordination failures, procurement practices and other factors affect the process. All these taken together lead to the conclusion that the task of development in mineral economies is to even out (i.e. balance) the growth process that is initially unbalanced due to the presence of extractive industries. Thus, mineral economies should aim at a diversification strategy by leveraging extractive industries. Promotion and fostering linkages between resource and non-resource industries could help to achieve this task and is in line with Hirschman's theory. In this sense, building competitiveness of local suppliers in satellite

industries as well as producers of other intermediate industrial goods is a valid diversification strategy. However, in the presence of intense international competition costs play a major role and define the level of competitiveness. By costs we mean both production costs and costs of transacting. For production costs there are many ways to reduce them, including with the help of the state's industrial policy (e.g. infant industry argument). When it comes to costs of transacting, these are much harder to target as these are rooted in conventions on doing business. These conventions reflect the belief system, the norms and practices that are nurtured not only in internal environment of the firm (e.g. production culture, management system, etc.) but also in the exterior – governance structures in the industry and general context of the country. Hence, the only way for the mineral economy to industrialize through backward linkages is to foster the emergence of competitive local firms in terms of production costs and costs of transacting. The path to this process is by building institutions that support this at all levels – firm, industry and the country.

Kazakhstan's experience indicates that the country has reached the unbalanced growth as the goal (or objective) due to booming commodity markets. However, the country failed to achieve it as a sequential process and fully utilize the underlying dynamics of it as envisaged by Hirschman. This task is yet to be done in the future. The same arguments apply to other resource-exporters who experienced the similar dynamics and the task for them is to embed the dynamics of unbalanced growth. This is a very demanding process and is not as straightforward as it presented in theory. As an idea the unbalanced growth theory is still valid but its application to the case of mineral economies needs to take into account a couple of additional observations based on the case of Kazakhstan. In particular, further adaptation of Hirschman's concept to industrialization process through backward linkages could be finalized with the following diagram:

Figure 11: The conceptual framework for development of competitive local suppliers for the oil industry

This finalized diagram combines the starting point of the research (i.e. the idea of economic diversification in the mineral economy) with the interpretation of the research findings. This figure zooms into the shaded area of the unbalanced growth process and uncovers the driving factors behind the backward linkage creation process. Based on this finalized structure and to reflect on the industrialization process in mineral economies, the initial concept of unbalanced growth as suggested by Hirschman could be extended with the following ideas.

In contrast to Hirschman perception of the petroleum industry as an enclave, this research finds that it has a very strong potential for linkage creation, and, specifically, for backward linkages.

In the modern world, the emergence of backward linkages is largely associated with an entrance into GVCs. For an oil exporting country to utilize the unbalanced growth sequence, it needs to break into existing supply chains of oil companies – in most cases these are large international firms operating globally with stable supply systems. Hence, the development of local suppliers assumes first-of-all building up their international competitiveness. The oil exporting country can benefit from resource-led growth if it is capable of *producing* enough competitive local suppliers who can meet the requirements of the lead oil companies and endure dynamic international competition. Thus, the strength of backward linkages is conditional on how capable local

suppliers are to enter GVCs. As a result, competition and competitiveness could be named as one of the guiding governance principles that need to be in place.

This process of entering into GVCs is extremely hard if the country is lagging in technology, skills and experience. In this case, market forces will not be sufficient and the inducement mechanism might arrive outside the market, i.e. from the state. As Kazakhstan's experience shows, the procurement policy of the state can play a catalytic role and the national oil company might work as a major driver from the demand side. The role of the state is to provide strong stimulus for the development of new producers. In this case, the state is taking steps to defy existing comparative advantage to create a new one. By doing so the state creates this pressure for action and sends signals to economic agents to enter a new activity. The evidence shows that this initial step is done by the state rather than the market. Once there are some pioneer producers in place, market forces could take it from there and act with more strength. In particular, additional inducement mechanism enters the process – lead oil companies. As our research finds, international operators are driven by market dynamics and seek additional sources for operational efficiency. One of these sources could be traced to supply chains and willingness to promote local suppliers, as this is profitable. Hence, private and public policies are equally important. This is the area where all stakeholders could benefit from cooperation and governance arrangements need to target deliberation and greater collaboration. When such arrangements are weak, this will lead to the weak alignment of private and state policies and policy implementation failures.

The establishment of backward linkages is associated with high transaction costs for all stakeholders. For example, the change to cooperation mode requires the alignment of goals, internal procedures, management processes, information exchange requirements, and more importantly - acceptance of mutual dependence. Even the implementation of policy is not free of transaction costs. Hence, there is a need to supply strong institutions that will support collaborative practices and joint actions. Such institutions will unite stakeholders under a jointly shared agenda – the creation of strong linkages. If such institutions are not in place, stakeholders are divided and are not ready to incur the transactions costs because they cannot observe the benefits (i.e. potential gains) of such a move. As a result, transactions costs of

collaboration remain high and the sequence of unbalanced growth is interrupted.

The state has a much stronger role in the supply of institutions and in driving the sequence of unbalanced growth. It does require high capacity from the state to deliver on policies and more importantly the capacity to learn in the process. Although Hirschman assumes that the state's capacity could be limited in developing countries, it turns out that this is much more constrained than he even expected. The research shows, that the state is engaged in the supply of organizations rather than institutions as new rules are easily adopted and policies lack proper implementation. Hence, there should be a much stronger emphasis on the role of institutions. One particular conclusion might be that the unbalanced growth sequence could happen in countries, which already have strong institutions, and the experience of Norway is a good example. The promotion of one specific industry requires building competitive institutions at all levels – firm, industry and the nation. However, these levels are interconnected and industrial transformation starts with an individual's transformation. For this flow to take place, there should be access to inclusive institutions in economic, social and political areas. As a result, the unbalanced growth process benefits more countries that have inclusive institutions in place to allow for countervailing forces to restore the equilibrium at a higher welfare level.

This research tried to capture the dynamic nature of the process of backward linkages development and observe the transformations that have taken place amongst stakeholders, their roles in the process, and changes in the surrounding context. The research demonstrated that the process is intrinsically highly transaction-intensive and requires inputs from all stakeholders, governed by individual, national and international rules, norms and beliefs. Each actor in this process of linkage creation experiences learning, capacity building, and skills development. Still, it seems like the most responsibility for this transformation is with the state in relation to its capacity and its role in the process. The new equilibrium could fail to appear not only for the reason of market and non-market forces but also as the outcome of their disconnect. This is in line with the market-enhancing governance approach that sees coordination failure as a major source of dis-functionality and the important role of the government in addressing those failures to promote private sector development.

Hence, this research finds that the application of the linkage theory to the reality of an oil exporting country provides a lot of insights on how the country could progress in its industrialisation strategy. In particular, to exit the vicious circle of exporting resources and importing industrial goods to support the raw exports further, the country needs to build its new comparative advantage in those imported items. This is to be largely driven by the quality of institutions in place and by the capacity of the state as well as governance practices in place. The unbalanced growth is conditional on the presence of an enabling environment and a *soft* (i.e. institutional) infrastructure plays a leading role.

Looking back upon the universal research question of this study, one could conclude that, overall, Kazakhstan failed to fully employ the inducement mechanism as suggested by Hirschman and his theory. Research findings indicate that within the holistic system of the three variables of the conceptual framework there are both drivers and hindrances. The system of these variables constitutes the enabling environment for the emergence of strong backward linkages. However, the analysis showed that the enabling environment, which is operationalized with three explanatory variables – policies, governance and institutions, is not fully supportive for the expansion of linkages. As a result, the ultimate goal of the unbalanced growth – economic diversification – is not yet captured. As noted, Kazakhstan was successful in achieving the unbalanced growth as the goal given the expansion of the extractive industries and the high levels of economic growth over the period of the commodities boom. This research helps to identify particular reasons for such a disconnect, which relate firstly to the general character of knowledge provided by unbalanced growth theory, and, secondly, to the importance of locational and sectoral constraints in place in country of this case study. At an aggregated level Hirschman is very consistent in predicting the way unbalanced growth dynamics unfolds. Still, when disaggregating the drivers of such dynamics to three variables, one can notice not only additional drivers but bottlenecks too.

At the level of the policy variable, Kazakhstan experience is fully in line with the unbalanced growth theory due to very active state policies. The most important was the policy on the attraction of FDIs in the country. This was a first critical move in accordance with Hirschman's sequence, i.e. the act of unbalancing or creating the outlier sector. This policy brought with it the inflow of capital and massive

expansion of the oil and gas industry in Kazakhstan. In order to generate linkages with the domestic economy the state played a catalytic role in supporting the emergence of new supplying industries. As predicted by Hirschman, after the act of unbalancing there should be the counteract of balancing. Consistent with this sequence, the state introduced rounds of large-scale industrialization programs as well as horizontal policies to create better conditions for entrepreneurship and private sector development. So, at the level of inducement the state was really steering the market and we observe very active state policies. At the same time, in the oil and gas industry the state's efforts to generate linkages were accompanied with corroborative corporate policies and supplier development programs. The synergetic effect of active private and state policies is that they gave rise to the emergence of the new industry.

At the level of governance is where we start to observe more gaps. As Hirschman explicitly argued, the act of unbalancing should be followed by investments in social overhead capital in order to efficiently and effectively tackle those disproportions. Thus, the act of balancing adds more strain on the governance capacities. This research revealed that there are significant governance gaps in place. As an outcome, the balancing policies, i.e. industrialization programs and other reforms, stumble upon weak implementation, the lack of coordination among state agencies and policies, and low accountability. In addition to that, the weak capacity of the economic bureaucracy combined with terms of trade windfalls brought the country to a consumption boom and distorted macroeconomic conditions for structural transformation. In this setting, as Hirschman foresaw, exchange rate appreciation created favorable conditions for increased consumption imports that worked as a leakage rather than a linkage. At the same time, despite the moves toward inclusion of different stakeholders, the deliberation practices remain weak and this affects the quality of policymaking. The one particular issue that fell out of the analysis of Hirschman is that in a globalized world the development of linkages is subject to the dynamics and governance arrangements that exist within lead firms (MNCs) and GVCs. This research finds that the lead oil firms in Kazakhstan are guided by the principle of competitiveness in governing relationships with local suppliers. In turn, the lead oil firms being globally active are subject to global governance practices related to sustainability and environmental safety of extractive operations. Thus, market dynamics, weak local absorptive

capacity, and strict environmental regulations constrain lead oil firms in moving fully to governance practices based on trust and partnership, i.e. cooperative governance. Due to corporate governance practices that exist within oil operators, there are substantial barriers in entering the supply chain by local suppliers. In addition, there is not sufficient cooperation and collaboration among oil operators to combine efforts and create economies of scale for local suppliers. On the side of the state there are also constraints from the WTO rules that do not allow treating domestic suppliers differently than others. Hence, there is a need for finding workable governance solutions to bring all stakeholders on board to deal with all these issues. Though Hirschman pointed to the importance of administration, public and private governance arrangements today are largely affected by international governance regimes and influence linkage development.

Finally, at the level of institutions, there are countervailing forces, which, in their turn, impact both policies and governance arrangements. Hirschman does not underestimate the role of institutions in his unbalanced growth theory. He explicitly indicates the importance of the country context for linkages generation, including at firm and sectoral level. For example, Hirschman strongly believed that the entrepreneurial drive would act as balancing power. This study showed that there are firms with supportive productive culture that are capable of capturing linkages. At the same time, there are rent-seekers too, who use political power to enter supply chains. For operators these rent-seekers are additional risks and to control these, the operators rely on strict governance arrangements. At the same time, such rent-seekers emerge from the political setting as well as other national level institutions, which favor informality and patrimonial behavior. As the outcome, the entrepreneurial drive is too weak to act as a balancing force in response to the rise in demand from the oil industry. Additionally, the developmental effect of imports as seen by Hirschman is diminished by the strong institutionalization of the resource extraction: there is a stable contractual framework in place, which in turn was supported by preferential import regimes for machinery and equipment for resource exports to grow. Overall, as was shown, the resource extraction regime has strongly institutionalized itself along social, economic and political lines, and for unbalanced growth to unfold there should be counterbalancing response in all those systems. However, this is not yet in place.

To summarize, the findings stated above are not aimed to capture and expose any flaws in Hirschman's theory but to demonstrate what are the stumbling blocs in Kazakhstan's industrialization process. The main conclusion is that Hirschman's theory of unbalanced growth is relevant in general. Still, there are additional factors that need to be taken into consideration and arrive from a more disaggregated level of analysis.

To reflect on the research question stated at the onset, the overall finding is that because the enabling environment for backward linkages to expand is not yet in place, Kazakhstan failed to experience the dynamics of the unbalanced growth fully and diversify its economy away from resource extraction. This is mainly because active private and state policies are placed in uncooperative governance practices and weak institutional framework at national level.

Though Hirschman's ideas are still valid at the outset of this research, in the case of oil exporters these ideas need to be extended with special reference to international competitiveness and the role of GVCs in the establishment of backward linkages. A potential area for future research is to discover the role of specific institutions in the building of competitiveness within the GVCs and to explore any gradation of institutions given this precise goal. In addition, it would be interesting to explore how changes in the MNCs attitude toward supporting local suppliers affects state policies and governance arrangements. In this setting the role of the state should transform to something different. An additional point that should be made is that linkages development is accompanied by the dynamic process of learning not only of underlying economic processes but also about actors of this process and their interaction. Exploration on how the change along these dimensions affects the evolution of linkages is another potential topic for further research. Though this study employed the qualitative research method, alternative approach could be to explore micro-foundations of development of local high impact new ventures with the survey data. Gaining the knowledge on the process of creation of new competitive ventures is fruitful research area that allows combining qualitative and quantitative research methods. However, such approach requires having the access to enterprise survey data with sufficient number of respondents in order to draw tangible conclusions. Enterprise survey data covers broad range of indicators of different nature and represents large datasets that could be used to link macro with micro as well as undertake

evidence-based assessment of industrial policy impacts on evolution of firms into high impact ventures. The other applied area for future research is to explore the investment policy of host-economies that attract FDIs in extractive industries with a specific target on the establishment of production linkages. In addition, exploring the connection between change in MNCs procurement policies and competitiveness of the countries would seem to be a rewarding exercise as well. Hence, though Hirschman's ideas are already a classic of development economics, they still generate new ideas and new applications. The goal of this research was to apply his concepts to the case of the industrialization process in Kazakhstan. I believe this goal has been achieved as the research findings clearly indicate the driving forces and stumbling blocks of economic diversification process via the development of supplying industries to the oil and gas industry in Kazakhstan.

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Worldwide governance indicator – www.worldbank.org

The Atlas on Economic complexity – www.atlas.cid.harvard.edu

Appendix 1. Interview guide

Context:

How would you describe the level of your engagement in local content development?
What is your (as a company/organization/expert) contribution to this process?

In your opinion, to what extent there is a move towards collaboration between stakeholders (oil companies, state, local businesses) to address local absorptive capacity development? Why it is happening?

In your opinion, to what extent efficient and coherent framework (legal, organizational) for joint action is in place to foster local suppliers growth?

What factors you can name that hinder collaborative action? (distance, language, culture, etc.)

Drivers:

How you (as a company/organization/expert) are participating in this process? What is your motivation for development of local sourcing? Is it a part of your social responsibility or integral part of production process?

How you ensure long-term commitment to the process of local content development?

What are the limits for your involvement?

How open are other stakeholders (oil companies, state, local business) for the dialogue and joint action?

To what extent stakeholders could be seen as trustable partners for local content development?

Process:

What collaboration/deliberation frameworks are in place?

Via which channels or organizations you are involved in policymaking and implementation?

To what extent you try to align your suppliers development programs with state's industrialization efforts? To what extent these are discussed jointly?

What deliberation platform you use to discuss policy, supplier development programs, etc?

What issues you face in defending your interest during deliberation process? Do you find deliberation process fair and inclusive?

At what levels of government you observe the most of collaboration? Which are the most effective?

How would you define the level of participation of other stakeholders (free-riders problem or incomplete representation)? Is there a capacity for joint action at all?

Joint action:

To what extent you observe that your participation leads to industrial policy decisions?

With what action plan participants came out?

Can you provide examples of collaborative problem solving of some technical issues of an industry: information asymmetry, productivity, human capital?

Accountability:

How responsibility between stakeholders is divided in the collaboration process?

What accountability mechanisms are in place to ensure targets are met?

Thank you for your participation!

Appendix 2. Respondents profile and details of interviews

Reference number	Date	Position	Respondent	Place	Duration
1	24 April 2018	Deputy CEO	Industry expert	Astana	38 minutes
2	25 April 2018	Director	Industry expert	Astana	57 minutes
3	27 April 2018	Managing Director	Industry expert	Astana	56 minutes
4	28 April 2018	Department Head	State agency	Astana	43 minutes
5	29 August 2018	Deputy CEO	State agency	Astana	41 minutes
6	25 August 2018	Deputy Director	State agency	Astana	58 minutes
7	25 August 2018	Lead expert	Industry expert	Astana	47 minutes
8	24 August 2018	Lead expert	Industry expert	Astana	62 minutes
9	28 August 2018	Lead expert	Industry expert	Astana	73 minutes
10	07 September 2018	Director	Local producer	Astana	60 minutes
11	07 September 2018	Department Head	Local producer	Astana	56 minutes
12	07 September 2018	Lead expert	Industry expert	Astana	23 minutes
13	12 September 2018	Lead expert	Industry expert	Astana	48 minutes
14	14 September 2018	Director	Industry expert	Astana	54 minutes
15	19 September 2018	Director	State agency	Astana	52 minutes
16	20 September 2018	Department Head	Local producer	Astana	17 minutes
17	20 September 2018	Director	Local producer	Astana	53 minutes
18	22 September 2018	Deputy Governor	State agency	Astana	54 minutes
19	26 September 2018	Department Head	State agency	Almaty	44 minutes
20	20 September 2018	Director	Local producer	Astana	50 minutes

21	20 September 2018	Director	Local producer	Astana	20 minutes
22	21 September 2018	Department Head	Local producer	Astana	24 minutes
23	27 September 2018	Director	Operator	Astana	39 minutes
24	27 September 2018	Department Head	State agency	Astana	20 minutes
25	27 September 2018	Department Head	Operator	Astana	23 minutes
26	09 October 2018	Deputy Director	Local producer	Almaty	65 minutes
27	10 October 2018	Department Head	Operator	Almaty	60 minutes
28	11 October 2018	Director	Industry expert	Almaty	35 minutes
29	09 October 2018	Director	Industry expert	Almaty	39 minutes
30	04 October 2018	Department Head	State agency	Astana	14 minutes
31	20 October 2018	Department Head	Industry expert	Astana	37 minutes
32	21 October 2018	Department Head	State agency	Astana	60 minutes
33	30 October 2018	Department Head	State agency	Astana	60 minutes
34	30 October 2018	Deputy Director	State agency	Astana	60 minutes

Appendix 3. Code System with sub-codes and statistics

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state failure	5
picking losers	6
manufacturing process	12
pseudo-producer	6
holistic	13
China	5
doing business in KZ	8
coordination	2
process	13
failure	29
pilot agency	30
deliberation	3
process	44
objective	2
policy	3
horizontal	15
vertical	84
organizational framework	20
tool-box	46
linkages	23
from NOC	10
from IOC	34
market failure	21
economy of scale	9
market access	17
access to finance	11
information asymmetry	13
collaboration	4

SBR	29
consultations	11
B2B	15
local absorptive capacity	55
oil operations	2
conditions	12
governance	1
market-enhancing	36
levels	7
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Institution	2
belief system	23
leadership	15
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