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Essays on entrepreneurship, worker mobility and firm performance

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Chapter 1

Introduction

1.1 Introduction

This dissertation bundles several empirical studies on the impact of firm performance of foreign direct investment (FDI), labor mobility and government involvement. Firm performance is often measured by its productivity which captures how firms use inputs (e.g. labor and capital) to produce their outputs. This thesis will study the productivity of Dutch and Chinese firms.

The focus of this thesis is in particular on industries consisting of firms with different levels of productivity. A central hypothesis is that, in the long run, only the most productive firms can survive, as higher productivity is associated with lower costs, higher profits and lower output prices, which should drive less efficient competitors out of business. However, firms can try to improve their productivity, for instance by adopting the same technology, or by attracting workers from more productive competitors. In addition, workers at more productive firms could leave the firm to start their own business. Productivity spillovers due to knowledge transfers and entrepreneurship are two frequently used concepts in scientific research, managerial practice and policy analyses (see e.g. Lipsey (2004); Saggi (2002); Görg and Greenaway (2004); Havranek and Irsova (2012)).

Knowledge spillovers can occur through different but interrelated channels: labor mobility, entrepreneurship and FDI. Labor mobility has been considered as one of the major sources of knowledge diffusion (Görg and Strobl (2005)). There are two mechanisms how labor mobility can increase productivity. Knowledge transfer from new employees to incumbent workers may lead to a higher quality of human capital in the receiving firm, thereby increasing its productivity. Alternatively, labor mobility may increase the likelihood of a good match between the tasks at hand and workers' skills (Thulin (2009)) which leads to a more efficient allocation of the workforce and higher overall productivity.

Finally, FDI has attracted considerable attention as an external factor influencing domestic markets. FDI is often considered to bring several benefits to the host economies

(Caves (2007); Javorcik (2004); Kokko et al. (1996)). Multinational and domestic firms may differ in many respects in terms of technology, new products and managerial skills, where multinational firms generally outperform domestic ones. Moreover, foreign-owned companies are usually large, have more market power and devote more of their resources to R&D activities (Griffith, (1999)). Theory suggests that these differences are the sources of FDI spillovers in host countries (see, Caves (1974)). Spillovers arise when multinational establishments enter the domestic market and impose costs on domestic firms, but also bring them benefits. There are several channels through which foreign firms may generate positive spillovers: productivity and wages. Productivity spillovers occur either via demonstration effects and reverse engineering (Görg and Strobl (2001)) or through labour movement (Görg and Strobl (2005)).

Although, FDI presence can have a positive impact on domestic markets, it also can negatively affect domestic entrepreneurial activities. A large foreign presence can also coincide with the crowding-out of domestic enterprises, for example, due to intensified competition in product markets (De Backer and Sleuwaegen (2003)). Likewise, by paying higher wages, foreign-owned enterprises may increase the incentives for wage-employment as opposed to entrepreneurship thereby making new firm creation less attractive. An increase in FDI presence could also lead to higher barriers to entry, thereby constraining new firm creation (Danakol et al. (2017)).

The thesis contains four empirical studies. Three of these studies investigate different aspects of productivity spillovers. While the first study focuses on the effect of foreign firms on firm entry (entrepreneurship activity), the focal point of the second and third study is on productivity spillovers via labor mobility. In all three studies we use a rich data set of the Dutch manufacturing sector. The final chapter focuses on the impact of government involvement on firm performance using a panel data set of publicly traded Chinese enterprises.¹

The role of government involvement in firms has received a lot of attention both from policymakers and academics in the last few decades. Government involvement

¹The first paper is joint work with Seçil Hülya Danakol and has been published in *Small Business Economics* (2018); the second and third papers are single-authored and the fourth one is written with Zhi Wang and Jakob de Haan and is forthcoming in *Kyklos*.

could result in a 'supporting hand' and a 'grabbing hand' (Shleifer (1998)). To be more specific, government interventions could address problems such as natural monopolies, externalities and information asymmetries, thus tackling market failure ('supporting hand'). However, politicians could also pursue their own political or private goals at the cost of sacrificing public interests and distorting market allocation ('grabbing hand') (Shleifer and Vishny (1994)). Government-owned firms are found to be less efficient and less profitable than privately owned firms. This difference is often attributed to principal-agent deficiencies, such as less monitoring of management and the lack of incentives to maximize profits (Vining and Boardman (1992); La Porta et al. (1999)). Compared to non-government-controlled firms, firms under government control face the issue that politicians have both the motives and the power to impose their social and political goals on affiliated companies. This may result in poorer performance (Xu and Wang (1999); Hanwen et al. (2011); Yu (2013)).

1.1.1 Chapter 2: Wage and Competition Channels of Foreign Direct Investment and New Firm Entry

A handful of studies have considered the role of FDI in restructuring markets in host countries with a particular focus on entrepreneurship within and across industries (Barbosa and Eiriz (2009); De Backer and Sleuwaegen (2003); Görg and Strobl (2002); Ayyagari and Kosová (2010); Danakol et al. (2017)). These studies investigate the direct relationship between FDI and entrepreneurship, or aspects thereof, but do not analyse the mechanisms and reasons behind the observed effects of FDI on local firm creation. This chapter is positioned to fill this gap in the literature.

FDI may affect new firm entry simultaneously through various channels. On the one hand, foreign firms equipped with superior technology bring in technical expertise to host economies. Foreign-owned enterprises can act as external sources of innovation and as providers of tacit knowledge that can penetrate domestic firms, and thus pave the way for new firm creation. Therefore, foreign firms, willingly or unwillingly, become involved in the birth of domestic start-ups (Barrios et al. (2005)). On the other

hand, a large foreign presence can also coincide with the crowding out of domestic enterprises, for example, due to intensified competition in product markets. Likewise, by paying higher wages, foreign-owned enterprises increase the incentives for waged employment as opposed to entrepreneurship thereby making new firm creation less attractive (Danakol et al. (2017)). This chapter investigates the effect of FDI on new firm formation directly and through two prominent channels, namely industry competition and wage levels. We propose that FDI is indirectly related to new firm creation through an effect on competition and wages. Based on the literature discussed in section 2.2 we formulate the following hypotheses:

Hypothesis 2.1a: The greater the FDI in an industry, the lower the industry concentration (higher competition).

Hypothesis 2.1b: The greater the reduction in industry concentration due to FDI, the greater the entry rate in the same industry.

Hypothesis 2.2a: The greater the FDI in an industry, the higher the industry wage level.

Hypothesis 2.2b: The greater the increase in industry wages due to FDI, the lower the entry rate in the same industry.

Hypothesis 2.3: The greater the FDI in an industry, the greater the positive direct effect on the entry rate.

We formulate a simultaneous three-equation system to investigate whether FDI presence in Dutch manufacturing industries is directly or indirectly related to domestic new firm creation via wage and/or competition channels. We estimate this simultaneous equations system using the three stage least square method (3SLS) on panel data of all Dutch manufacturing industries spanning the years 1995-2010. Our results show that there is a significant negative direct effect of FDI on entry. At the same time, FDI decreases competition and increases wage levels, which then impact entry positively and negatively, respectively. The total effect of FDI on firm entry is negative, but small and virtually disappears after one year.

1.1.2 Chapter 3: Productivity spillovers of FDI through worker mobility

Labour mobility has been considered as one of the major sources of knowledge spillovers across firms (Görg and Strobl (2005)). Foreign firms generally heavily invest in education and training of their employees to improve their productivity (Fosfuri et al. (2001)). Domestic firms which hire former employees of foreign firms can benefit from these employees' embodied knowledge and skills, which may have a positive effect on domestic firms' productivity (Zucker et al. (2002); Palomeras and Melero (2010)). Generally, employees do not leave the foreign firm unless offered better working conditions by other firms. Thus, productivity spillovers only take place if the foreign firm's employee is hired by a domestic firm, because (s)he is offered a higher wage rate.

A vast literature highlighted the effect of foreign presence on local labor market conditions and productivity spillovers of foreign direct investment (see e.g. Havranek and Irsova (2012)). Regarding worker mobility as a channel of the knowledge spillover, the theoretical literature generally predicts a positive effect of FDI presence on domestic firms' productivity ((Kaufmann (1997); Haacker (1999); Fosfuri et al. (2001); Glass and Saggi (2002)). Görg and Strobl (2005) state that multinational firms invest in training and in the absence of slavery, it is impossible to forbid such resources to move to other firms. As a result, the movement of labor from multinational to domestic firms can generate productivity improvements. In line with this reasoning, I formulate the following hypotheses:

Hypothesis 3.1: *Hiring from multinational firms increases domestic firms' productivity, driven by high-skilled workers.*

In this study I identify the spillover effect based on the relationship between domestic firms' labor productivity and their share of employees hired from multinationals. I apply two different productivity proxies calculated as the natural logarithm of turnover and value added per employee, normalized by the applicable industry-year average. Further, to identify the workers which are most likely the main source

of knowledge spillover, I differentiate between hiring highly skilled and non-skilled workers from foreign and domestic firms, since high-skilled workers are more likely to transfer knowledge and skills. I estimate this dynamic model using the pooled ordinary least square method (Pooled OLS) on panel data of all Dutch manufacturing firms spanning the years 1999-2013. I find that domestic firms that hired new workers from multinationals experience a productivity gain one year after hiring. Moreover, I show that this productivity enhancing effect of hiring from multinationals reflects the level of education and skills of the newly hired employees. Additionally, my analysis reveals a negative association between domestic firm labour productivity and mobility of unskilled workers among domestic firms.

1.1.3 Chapter 4: Productivity spillovers of high-productivity firms through worker mobility

Labor mobility has been considered as one of the major sources of knowledge diffusion and has been documented in recent studies (see, e.g. Almeida and Kogut (1999); Guarino and Tedeschi (2006); Stoyanov and Zubanov (2012)). As pointed out above, there are two mechanisms how labor mobility can increase productivity, namely a higher quality of human capital in the receiving firm, which increases its productivity, and a better match between the tasks at hand and workers' skills, which will increase firm efficiency and labor productivity. Therefore, through both mechanisms labor mobility can be expected to have a positive impact on the productivity of receiving enterprises.

Given the fact that knowledge is not only in the form of patents and it is partly tacit, worker mobility can be considered as the most effective channel for knowledge spillover. More precisely, Almeida and Kogut (1999) suggest that the combination of high labor mobility and skilled workers accounts for knowledge spillovers. I extend the literature using similar models as proposed by Stoyanov and Zubanov (2012) on a unique dataset for the Netherlands to examine:

Hypothesis 4.1: *Hiring workers from high-productivity firms increases firm productivity.*

The dataset used for the analysis is a matched employer-employee dataset from

Statistics Netherlands and covers the time period between 1999 and 2013. I define the spillover as the relationship between hiring ex-workers of more productive firms and the labor productivity of receiving firms. In the analysis, I differentiate between high- and low-productivity firms, as defined by enterprises productivity level. I apply two different productivity proxies calculated as the natural logarithm of turnover and value added per employee, normalized by the applicable industry-year average. I estimate the productivity gain of the hiring firms one year after hiring using pooled OLS for a dynamic model. The analysis suggests a positive association between hiring from more productive firms and productivity gain. Furthermore, I find that worker mobility within the same sector is associated with more diffusion of knowledge and skills than worker mobility across sectors.

1.1.4 Chapter 5: How does government control affect firm value? New evidence for China

The Chinese economy has gone through a restructuring of power distribution from the central government to the local government, which promotes local governments to compete for resources in order to achieve their own social goals such as regional economic development, healthy public finances and social stability (Lin et al. (1998); Hanwen et al. (2011)). There is only limited evidence on the impact of government involvement on the performance of Chinese firms. Cheung et al. (2010) report support for the ‘grabbing hand’ theory for listed firms owned by local governments; for firms owned by the central government, their findings are more consistent with the ‘helping hand’ model. Compared to non-government-controlled firms, firms under government control face the issue that politicians have both the motives and the power to impose their social and political goals on affiliated companies. This may result in poorer performance (Xu and Wang (1999); Hanwen et al. (2011); Yu (2013)).

As the criteria for political promotion of officials in China include both political and economic achievements (Li and Zhou (2005)), politicians have incentives to ensure that firms under their control perform well. Bankruptcy or the delisting of firms could both damage the reputation of government officials, but also worsen the performance of the

(local) economy, which could further jeopardize the possibility of personal promotion for government officials. Therefore, politicians will always try to find the proper balance between grabbing from and delivering benefits to firms under their control. The better firms are performing, the more politicians have the possibility to exploit them for their own benefit and to achieve social and political goals.

Based on these arguments we formulate 3 hypotheses:

Hypothesis 5.1: *In China, government-controlled firms have a worse financial performance than non-government-controlled firms.*

Hypothesis 5.2: *In China, local government-controlled firms have a worse financial performance than firms controlled by the central government.*

Hypothesis 5.3: *In China, the grabbing influence of government control on firms increases as corporate performance increases.*

We use a panel data set of publicly traded firms from the stock exchanges of Shanghai and Shenzhen over the period 2009-2013. Information on the nature of firm ownership, concentration of control and control rights is derived from the firms' annual reports. Concentration of control rights is defined as the percentage of the shares controlled by the shareholder with the highest share of direct and indirect shares (voting rights). This shareholder can be a private person, a firm or the government. We use three widely used proxies for firm performance: return on assets, return on equity and Tobin's Q. We test the hypotheses using OLS and quantile regression models. Our results suggest that government control of firms, measured by the shareholdings that are directly and indirectly controlled by the government, is negatively related with firms' financial performance. Both central and local government control is undermining firm performance. These findings provide support for the 'grabbing hand' theory of the government. Our results also suggest that the negative effect of government control becomes stronger when firm profitability is higher. Firms with a poor financial performance benefit from government control, which supports the 'supporting hand' theory

of the government.