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Published in:
The Low Countries Journal of Social and Economic History

DOI:
10.18352/tseg.133

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Herman de Jong and Jan Luiten van Zanden

Abstract
With the renewed interest in macro-economic quantification since the 1950s the study of long-term economic growth and development became also an important theme within the discipline of economic history. It developed into a major tool to analyse the process of industrialisation and to identify the forces which explain long-term growth and stagnation of the rich and poor parts of the world. This chapter examines the new branch of macro-economic history as it developed in the Netherlands after 1945. This new approach initially focused on the problem of the slow industrialization during the nineteenth century, but gradually branched out to include the early modern period and the twentieth century. Studies in this field were characterized by a strong quantitative orientation, and resulted in systematic overview of the growth of the Dutch economy from the Late Middle Ages to the present.

Keywords: long-term growth, the Netherlands, economic structure, technological change, industrialisation, institutions

Introduction

During the second half of the twentieth century economic growth was arguably the dominant theme in economic historical literature. New developments in economics – the Keynesian revolution resulting in the emergence of macro-economics and growth theory, and the new perspective on development issues inspired by Colin Clark and Simon Kuznets – contributed to a focus on the phenomenon of economic growth and development. This was intensified by the rise of the 'New Economic History' in the 1960s, with its combination of quantification, hypothesis testing and the explicit use of economic theory.[1] The present contribution surveys the new branch of macro-economic history as it developed in the Netherlands after 1945.

This new attention to macro-economics and growth initially translated into a major debate about the supposedly late and slow industrialisation process in the Netherlands during the nineteenth century. Between the 1950s and 1990s, this was the focus of a large part of research into the economic history of the Netherlands. In the 1950s, the idea emerged that there was something peculiar about the economic performance of the country during this period: whereas its neighbours industrialised rapidly – the UK as the pioneer of the First Industrial Revolution, soon followed by Belgium and Germany – the Netherlands was slow to accept the new technologies and the related factory system. At the same time, growth was somewhat slow. Whereas in the eighteenth century the Netherlands was possibly the wealthiest country in Europe, by the late nineteenth century it had been overtaken by several other European countries. These facts were probably already known to the 'first generation' of economic historians of the first half of the twentieth century (such as Posthumus, Van Dillen, and Sneller), but interest in the issues of macro-economic performance and the related structural changes induced by industrialisation only took off in the post-war period. Why did the Netherlands, despite its relative favourable starting conditions (strategic geographic location and high level of commercial development) not industrialise much faster during the nineteenth century? The debate on industrialisation in the nineteenth century identified causes for the specific development of the Dutch economy in this period, which were often part of the legacy of the pre-1800 period. High wages, high (indirect) taxes, a very productive agricultural sector, a strong tradition of commercial services, an abundant supply of capital, the links with the colonies (especially Java) and a fragmented state (before 1798) – these were all products of the trajectory of Dutch society in the late medieval and Early Modern Period.

This chapter discusses how the debate became linked with research on the pre-1800 period, and how a new interpretation of the Dutch economic miracle of the seventeenth century helped to bring the debate on the nineteenth century to a conclusion. Last, we deal with the discussions about the results of industrialisation since the last quarter of the nineteenth century. Because the industrialisation debate has already been covered in detail

1 J.W. Drukker, *The Revolution that bit its own tail. How economic history changed our ideas on economic growth* (Amsterdam 2006).

in another article,[2] we pay more attention to recent developments in the interpretation of growth in the twentieth century.

New approaches to the analysis and explanation of pre-modern growth in Holland

The first generation of professional economic historians – Posthumus, Van Dillen and others – focused on the late medieval and the Early Modern Period. Although they published a number of impressive quantitative studies on various aspects of the Dutch economic history (Posthumus's masterpiece about the Leiden textile industry immediately springs to mind), they lacked the macro concepts of national income and economic growth.[3] What came closest to such concepts, was a discussion about the turning points in pre-1800 growth, in particular the question of when the Golden Age had ended and the stagnation of the eighteenth century had set in. Questions about the standard of living were focused on the study of prices and wages – in particular real wages – to which Posthumus devoted a considerable part of his energy.[4]

In the second half of the twentieth century, the original focus of research on the Dutch Golden Age and its eighteenth century successor disappeared, and research turned to the nineteenth and twentieth centuries. One of the few studies that tried to apply the new macro-approach to the pre-1800 period was the work by Johan de Vries on economic trends during the eighteenth century, which aimed to find out – on the basis of available quantitative data – if and when decline had set in.[5] The most important new development during these years, the regional approach developed by Slicher van Bath, however, did not use the new theories of economic growth.[6]

The modern character of the Dutch economy

A new phase in historical research began in the second half of the 1970s, and innovation came from abroad. The book by Jan de Vries *The Dutch Rural*

2 See J.L. van Zanden, 'Dutch economic history of the period 1500-1940: a review of the present state of affairs', *Economic and Social History in the Netherlands* I (1989) 9-30.

3 N.W. Posthumus, *De geschiedenis van de Leidsche lakenindustrie* ('s Gravenhage 1936-1939).

4 Ibidem, *Nederlandsche prijsgeschiedenis* (2 Volumes, Leiden 1943, 1964).

5 J. de Vries, *De economische achteruitgang der Republiek in de achttiende eeuw* (Leiden 1968).

6 B.H. Slicher van Bath, *Een samenleving onder spanning* (Assen 1957).

Economy in the Golden Age (1974), led the way for a new assessment of growth and development in the Early Modern Period. He analysed the changes in the agricultural sector of the coastal provinces between 1500 and 1700 as the result of a systematic process of specialisation, which raised the level of agricultural productivity but also made possible the process of urbanisation that occurred.[7] It was the beginning of an impressive series of major studies on various aspects of economic change in the period between 1500 and 1800, of which De Vries' study on the network of barges (*trekschuiten*) was perhaps the most innovative, his research on European urbanisation perhaps the most impressive, and his ideas of an early modern 'industrious revolution' preceding the industrial revolution of the eighteenth century arguably the most influential.[8] De Vries worked together intensively with representatives of the Wageningen School, in particular Ad van der Woude, but in his work combined an interest in historical demography and secular trends in the economy (typical of the Wageningen approach) with a theory-inspired focus on the processes of specialisation and productivity growth that was untypical of the Wageningen paradigm. This collaboration resulted in the seminal book by De Vries and Van der Woude, *The First Modern Economy. Success and Perseverance of the Dutch economy 1500-1815*, published in 1997, which offered a synthesis of the work done by the 1970s' generation of economic historians.[9] The bold thesis of the book was that the economy of the Netherlands went through a first cycle of 'modern economic growth' – characterised by specialisation, capital formation and technological change – which brought real incomes to a level much higher than the 'subsistence' of the 'normal' pre-industrial economy. This was the result of a relatively modern institutional framework. The economy was characterised by market exchange, the protection of property rights and a usually benevolent government. In addition, the growth cycle ended at some point during the second half of the seventeenth century due to 'modern' causes such as intensified international competition, and not due to Malthusian events such as famines or plagues. In sum, the Netherlands had been the first modern economy generating the first modern economic growth.

7 J. de Vries, *The Dutch Rural Economy in the Golden Age, 1500-1700* (New Haven/London 1974).
8 Idem, *Barges and capitalism: passenger transportation in the Dutch economy, 1632-1839* (Utrecht 1981); J. de Vries, *European urbanization, 1500-1800* (London 1984); Idem, *The industrious revolution: consumer demand and the household economy, 1650 to the present* (Cambridge 2008).
9 J. de Vries and A.M. van der Woude, *The first modern economy. Success, failure, and perseverance of the Dutch economy from 1500 to 1815* (Cambridge 1997).

The synthesis by De Vries and Van der Woude was based on a great number of case studies of regions (often carried out by the Wageningse School) and industries. Richard Unger, for example, published important books on shipbuilding and beer brewing; international trade continued to receive a great deal of attention, as did international banking and the capital market.[10] Only rarely did this literature deal systematically with issues of growth and the increase in productivity. Lucassen and Unger developed a method to measure productivity growth in international shipping, which demonstrated the advanced nature of the Dutch shipping sector in the seventeenth century.[11] An alternative approach, using data on freight rates, was applied by Van Zanden and Van Tielhof and pointed to considerable productivity advances during the first half of that century.[12] Only the agricultural sector was studied in a similar way (by amongst others Slicher van Bath and De Vries) to detect advances in productivity.[13] At the same time, a minor debate raged about the role of energy – and in particular of peat – in the explanation for the Golden Age.[14] Moreover, inspired by literature on state formation, important new work was done concerning government finances and the institutional development of the Dutch Republic.[15] What

10 R.W. Unger, *Dutch shipbuilding before 1800: ships and guilds* (Amsterdam 1978); Idem, *A history of brewing in Holland, 900-1900. Economy, technology and the state* (Leiden 2001); M. van Tielhof, *The 'Mother of all trades'. The Baltic grain trade in Amsterdam from the late sixteenth to the early nineteenth century* (Leiden 2002); J. Israel, *Dutch primacy in world trade, 1585-1740* (Oxford 1989); C. Lesger, *Handel in Amsterdam ten tijde van de Opstand: kooplieden, commerciële expansie en verandering in de ruimtelijke economie van de Nederlanden ca. 1550-ca.1630* (Hilversum 2006); J.C. Riley, *International government finance and the Amsterdam capital market, 1740-1815* (Cambridge 1980); J.Th. Lindblad, *Sweden's trade with the Dutch Republic, 1738-1795* (Assen 1982).

11 J. Lucassen and R.W. Unger, 'Shipping, Productivity and Economic Growth', in: R.W. Unger (ed.), *Shipping and Economic Growth 1350-1800* (Leiden en Boston 2011) 3-44.

12 J.L. van Zanden and M. van Tielhof, 'Roots of Growth and Productivity Change in Dutch Shipping Industry, 1500-1800', *Explorations in Economic History* 46 (2009) 389-403; J.R. Bruijn, 'Productivity, profitability and costs of private and corporate Dutch ship owning in the seventeenth and eighteenth centuries', in: James Tracy (ed.) *The rise of merchant empires. Long-distance trade in the early modern world, 1350-1750* (Cambridge 1990) 174-194.

13 See the chapter by Piet van Cruyningen in this volume.

14 J.W. de Zeeuw, 'Peat and the Dutch Golden Age: The Historical Meaning of Energy Attainability', *AAG Bijdragen* 21 (1978) 1-31; R.W. Unger, 'Energy Sources for the Dutch Golden Age: Peat, Wind, and Coal', *Research in Economic History* 9 (*1984*) 221-253; M.A.W. Gerding, *Vier eeuwen turfwinning: De verveningen in Groningen, Friesland, Drenthe en Overijssel tussen 1550 en 1950* (Wageningen 1995); J.L. van Zanden, 'Werd de Gouden Eeuw uit turf geboren?: over het energieverbruik in de Republiek in de zeventiende en achttiende eeuw', *Tijdschrift voor Geschiedenis* 110 (4) (1997) 484-499.

15 M.C. 't Hart, *The making of a bourgeois state: war, politics and finance during the Dutch revolt* (Manchester 1993); W. Fritschy, 'A 'Financial Revolution' revisited: public finance in Holland during the Dutch Revolt, 1568-1648', *The Economic History Review* 56 (2003) 57-89.

was also added by De Vries and Van der Woude, was an in-depth knowledge of the labour market and wage and price developments, built up since the publication of Posthumus' history of prices.[16] Two parts of the new synthesis remained subject to discussion, however. The first debate related to the quantitative basis of the new interpretation: how much did the Dutch economy grow and what were the precise turning points? The second debate was about the medieval origins of the 'First Modern Economy' – when did the 'modern institutional framework' that was characteristic of the early 16th century, emerge? And why? And how much growth had already occurred before 1500?

Quantifying growth factors in the economy of Holland

Research on the quantification of the growth pattern of the Dutch economy in the Early Modern Period began with the already mentioned dissertation by Johan de Vries from 1959, but was only picked up in the 1980s when a number of papers were published experimenting with various methods for assessing growth. In particular, the paper by Riley that suggested that there was continuous growth during the eighteenth century was contested by other authors.[17] Van Zanden tried to get a firmer grip on the long-term growth record by focusing on the reconstruction of the national income of Holland during one benchmark year, 1514, for which very good sources were available in the form of an early modern 'census', the well-known *Informacie* of that year.[18] This formed the starting point for a detailed reconstruction of the national accounts of Holland between 1347 and 1807 (linking these estimates to nineteenth century national accounts).[19] It turned out that before the year 1500, GDP per capita had already increased substantially, confirming the impression that in the Late Medieval Period the economy of

16 Posthumus, *Nederlandsche prijsgeschiedenis;* L. Noordegraaf, *Hollands welvaren? Levensstandaard in Holland 1450-1650* (Bergen 1985).

17 J. de Vries, 'The decline and rise of the Dutch economy 1675-1900', in: G. Saxonhouse and G. Wright (eds.), *Forms and methods in economic history: essays in honor of William N. Parker*, (Greenwich 1984) 149-189; J.C. Riley, 'The Dutch Economy after 1650: Decline or Growth?', *Journal of European Economic History* 13 (3) (1984) 521-569; J.L. van Zanden, 'De economie van Holland in de periode 1650-1805: groei of achteruitgang?', *Bijdragen en Mededelingen betreffende de Geschiedenis der Nederlanden* 102 (1987) 562-609.

18 J.L. van Zanden, 'Taking the measure of the early modern economy: historical national accounts for Holland in 1510/14', *European Review of Economic History* 6 (2002) 131-163.

19 J.L. van Zanden and B. van Leeuwen, 'Persistent but not Consistent: The Growth of National Income in Holland 1347-1807', *Explorations in Economic History* 49 (2) (2012) 119-130.

Holland had already 'taken off'.[20] Moreover, in the 1670s, the turning point that is generally accepted as having ended the Golden Age, there was not a decisive break in per capita growth (although there was in terms of population growth). Growth continued during the eighteenth century, thanks to a shift towards more capital-intensive activities, albeit with a stagnating population. In fact, as demonstrated by Van Leeuwen and Van Zanden, per capita growth had already begun directly after 1347, and continued until 1807 at more or less the same pace (0.18 per cent per capita per year).[21] Growth before 1800 was consistent, but slower than after 1800 (when about 1 per cent per year became the norm). As predicted by De Vries and Van der Woude, modern causes of growth – capital formation, technological change and specialisation – dominated the growth process.

Growth began (at least in Holland) in the late Middle Ages. Why? De Vries and Van der Woude speculated that the absence of a feudal past might explain the remarkable development of institutions and the economy, but that answer has not convinced everyone. Important work on the late medieval advance of the economy of Holland was done in the 1970s by Jansen and De Boer amongst others, but this did not result in a new interpretation of the causes for the rise of the province in this period. [22] In a number of studies, scholars from Utrecht University have tried to explain the specific development of the Late Medieval Period, focusing on the rise of markets for land, labour (Van Bavel), capital (Zuijderduijn) and goods (Dijkman).[23] What these markets had in common is that high levels of commercialisation had already been attained quite early on. This was possibly due to the relatively balanced power structures of the society, in which feudal elements were combined with traditions of 'freedom' for peasants, strengthened by the strong position they acquired during the great reclamations of the central peat area between 900 and 1300.[24] In fact, recently Prak and Van Zanden turned the argument on its head and argued that feudal socio-political

20 B.J.P. van Bavel and J.L. van Zanden, 'The jump-start of the Holland economy during the Late-Medieval Crisis, C.1350-C.1500', *The Economic History Review* 57 (2004) 503-532.

21 Van Zanden and Van Leeuwen, 'Persistent but not Consistent', 119-130.

22 H.P.H. Jansen, *Hollands Voorsprong*. Inaugural lecture Leiden 1976. D.E.H. de Boer, *Graaf en grafiek: sociale en economische ontwikkelingen in het middeleeuwse 'Noordholland' tussen plusminus 1345 en plusminus 1415* (Leiden 1978).

23 B.J.P. van Bavel, *Manors and markets. Economy and society in the Low Countries, 500-1600* (Oxford 2010); C.J. Zuijderduijn, *Medieval capital markets. Markets for renten, state formation and private investment in Holland (1300-1550)* (Leiden 2009); J.E.C. Dijkman, *Shaping medieval markets. The organisation of commodity markets in Holland, c. 1200 – c. 1450* (Leiden 2011).

24 See the concluding essay: B.J.P. van Bavel et al., 'The organisation of markets as a key factor in the rise of Holland from the fourteenth to the sixteenth century: a test case for an institutional approach', *Continuity and Change*, 27 (3) (2012) 347-378.

relations were highly flexible, based as they were on negotiations between (for example) the count of Holland and his fiefs, and this tradition of power sharing facilitated the incorporation of communes and 'free' farmers into the political economy.[25]

The industrialisation debate

That the performance of the nineteenth century economy was often quite unsatisfactory was not a new fact 'discovered' by post-1945 economic historians. In the nineteenth century itself, social commentators and economists had already written about the failings of government policy and the slow economic progress (or the lack thereof), and this literature was used extensively by twentieth century scholars who tried to diagnose the problem. This debate only really took off in the 1950s, when a more or less systematic discussion began about the different causes of the slow and tardy industrialisation. Initially, the contrast was made between 'economic circumstances' which had retarded industrial revolution (such as the absence of coal), and 'psychological factors', for example the lack of entrepreneurship, as the main cause. The second issue that dominated the debate concerned exactly when industrialisation had begun: during the 1850s and 1860s, a position taken by I.J. Brugmans, or even much later, in the 1890s, which for some time became the orthodox position thanks to the impressive book on the topic by J.A. de Jonge.[26] De Jonge was one of the first to try systematically to estimate the quantitative development of key industries. Similar work on measuring GDP growth was carried out by Teijl, who applied different methods to calculate national income and production between 1850 and 1910, all pointing to a relatively slow process of economic growth in that period.[27]

25 M.R. Prak and J.L. van Zanden, *Nederland en het poldermodel. Sociaal-economische geschiedenis van Nederland, 1000-2000* (Amsterdam 2013).

26 J.A. de Jonge, *De industrialisatie in Nederland tussen 1850 en 1914* (Amsterdam 1968).

27 J. Teijl, 'Nationaal inkomen in Nederland in de periode 1850-1900', *Economisch- en Sociaal-Historisch Jaarboek* 34 (1971) 232-262.

New views on nineteenth-century growth in the Low Countries

Such was the state of this debate in the early 1970s, when a number of fresh contributions – inspired by the New Economic History – changed the discussion fundamentally. Joel Mokyr's book on the comparative industrialisation of the Low Countries was the first one to place the Dutch experience in an international comparative perspective and link it with theories and models explaining the pace of industrialisation. He concluded that the high wage levels in the Northern Netherlands constituted the main obstacle to the spread of modern industry.[28] A slightly more nuanced interpretation was developed by Richard Griffiths in his study of Dutch industrialisation between 1830 and 1850. He pointed at factor costs – prices of inputs such as coal, and wages – as determining the industrialisation in the various regions of the Netherlands, which had quite different sets of relative prices.[29] Dutch scholars such as Jan de Meere and Roel Bos also contributed to this more precise analysis of the causes of growth or stagnation.[30] The 'factor costs' approach soon also became popular with historians of technology such as Harry Lintsen, who analysed the cost advantages (or disadvantages) of moving from handicraft technology to the modern steam-driven production processes, resulting in case studies that suggested it was quite often rational to delay the introduction of steam, given the factor costs faced by Dutch entrepreneurs.[31] Such studies became the bread and butter of the large research project on the history of technology carried out by a team of researchers led by Lintsen.[32]

However, why were factor costs in the Netherlands so unfavourable for the transition to modern industry? It had been suggested that capital market failures might have played a role. The rise of modern banking also came late in the nineteenth (or early twentieth) century, but more recent studies of the actual functioning of the capital market (by amongst others Joost Jonker) showed that this was incorrect: interest rates were quite low, and entrepreneurs could often use their networks to mobilise sufficient funds

28 J. Mokyr, *Industrialization in the Low Countries 1795-1850* (New Haven 1976).

29 R.T. Griffiths, *Industrial retardation in the Netherlands 1830-1850* ('s Gravenhage 1979).

30 See for example: J.M.M. de Meere, *Economische ontwikkeling en levensstandaard in Nederland gedurende de eerste helft van de negentiende eeuw* ('s Gravenhage 1982); R.W.J.M. Bos, 'Factorprijzen, technologie en marktstructuur: de groei van de Nederlandse volkshuishouding 1815-1914', *AAG-Bijdragen* 22 (1979) 109-137.

31 H.W. Lintsen, 'Stoom als symbool van de industriële revolutie', *Jaarboek voor de Geschiedenis van Bedrijf en Techniek* 5 (1988) 337-354.

32 See the chapter by Karel Davids for a review of this literature.

for their projects.[33] Why then were wages so high in the Netherlands, and why was the coal market so fragmented that prices were often prohibitively high? Further, was slow industrialisation indeed a problem, or was the economy simply specialising in other activities, such as agriculture (profiting from a booming demand for luxury products such as butter and meat from industrialised England and Germany) and international services (in which it already had acquired a very strong position during the preceding centuries)? Griffiths was the first to suggest that the specific development path may have been optimal, given the circumstances, instead of proof of failure.[34]

These issues were tackled in two ways: First, the rising influence of New Institutional Economics deepened the understanding of the market economy and the determinants of factor prices and brought the state back into the picture. Second, the systematic application of historical national accounts to the nineteenth century economy created a much more detailed picture of economic development and its phases of success and failure. The combination of these two developments resulted in a new synthesis of nineteenth century economic growth – Van Zanden and Van Riel's study on institutions and economic growth 1780-1914 – which brought the industrialisation debate to a (temporary) close.[35]

Reconstructing the national accounts

Between 1988 and 2000, a large project was carried out by researchers at the Free University of Amsterdam, the University of Groningen and Utrecht University, to quantify systematically the development of the Dutch economy between 1800 and 1940, and to interpret the new results

33 See J.P.B. Jonker, 'Lachspiegel van de vooruitgang. Het historiografische beeld van de Nederlandse industrie-financiering in de negentiende eeuw', *NEHA-Bulletin* 5 (1) (1991) 5-23.

34 R.T. Griffiths, *Achterlijk, achter of anders?: aspecten van de economische ontwikkeling van Nederland in de 19de eeuw* (Amsterdam 1980).

35 J.L. van Zanden and A. van Riel, *Nederland 1780-1914. Staat, instituties en economische ontwikkeling* (Amsterdam 2000). It was based on a number of monographs and dissertations: R. van der Voort, *Overheidsbeleid en overheidsfinanciën in Nederland, 1850-1913* (Amsterdam 1994); M. Jansen, *De industriële ontwikkeling in Nederland 1800-1850* (Amsterdam 1999); E. Horlings, *The economic development of the Dutch service sector 1800-1850. Trade and transport in a premodern economy* (Amsterdam 1995); *J.P. Smits, Economische groei en structurele veranderingen in de Nederlandse dienstensector 1850-1913* (Amsterdam 1995); M. Knibbe, *Agriculture in the Netherlands 1851-1950. Production and institutional change* (Amsterdam 1993); P. Groote, *Kapitaalvorming in infrastructuur in Nederland 1800-1913* (Groningen 1995); R. Albers, *Machinery investment and economic growth: the dynamics of Dutch development, 1800-1913* (Groningen 1998).

making use of new insights from international literature on growth and industrialisation. This resulted in a number of PhD theses related to the different sectors of the economy, an integral reconstruction of the national accounts for this period based on this research, and an attempt to analyse the growth path that emerged from this new work.[36] The new studies demonstrated the vitality of the service sector during the greater part of the nineteenth century and the dynamic role played by agriculture in the process of economic development.[37] The new results showed that growth had indeed been relatively slow during the whole century, that it had already begun by around 1820 (as in neighbouring countries), but that the period between 1845 and 1865 was characterised by a stagnation of the industrialisation process. After 1865, industrial growth was nevertheless quite rapid. A number of causes for the slow performance during the middle decades were suggested: growth between 1820 and 1845 had been somewhat artificial, due to the Javanese Cultivation System and the related protection given to certain industries – a system that was liberalised and reformed during the 1850s and 1860s. Industrial growth was retarded due to the high cost of coal, which was at least partly caused by indirect taxes on its consumption, and which led to the fragmentation of the coal market. The absence – until about 1860 – of efficient railway connections with German and Belgian coalmines exacerbated the problem. Similarly, wage costs were driven up by high indirect taxes on basic necessities such as bread. The next step was to inquire why the state intervened as it did – why it raised indirect taxes, and protected certain industries but not others – which led to a detailed analysis of government policy and the underlying changes in the political economy. In particular, the reign of Willem I, who took many initiatives to further economic development, came under scrutiny and the institutional limitations of his 'top down' reforms were analysed in detail. A related cause of slow industrialisation between 1845 and 1865 was the boom in agricultural exports after the liberalisation of international trade, starting with the repeal of the Corn Laws in 1842. Dutch agriculture profited from this change, but it limited incentives for structural transformation – during these middle decades labour productivity in agriculture was often higher than in manufacturing industry. The prosperity of agriculture and of international services due to the link with Indonesia was paradoxically one of the causes of the slow growth of industry.

36 The final research report of this project: J. Smits, E. Horlings and J.L. van Zanden, *Dutch GNP and its Components. 1800-1913* (Groningen, 2000); for an overview of the publications resulting from this project, see the following website: http://nationalaccounts.niwi.knaw.nl (19-09-2013).
37 Horlings, *The economic development*; Smits*, Economische groei;* Knibbe, *Agriculture.*

Since the publication of the synthesis of the historical accounts project in 2000, silence has set in on this topic. This may be due to the new results, which were based on relatively solid quantitative evidence, but may also be related to a changing perception of the Dutch economy itself. The idea that it was slow to modernise and perhaps even 'failed' during the nineteenth century, fitted into a self-image of an economy with a large agricultural sector, lacking the modern industry of the First Industrial Revolution. The first historian to put this theme on the agenda, Henriëtte Roland Holst, in fact tried to explain why Dutch society had remained so 'traditional', with a strong influence from religion and a weak labour movement.[38] However, after 1965, when the long industrialisation boom came to an end and the transition towards a post-industrial society set in, the absence of 'modern industry' became a much less problematic issue in historical literature. In a way, with its early focus on services, already characteristic of the eighteenth and nineteenth century economy, the Netherlands had arguably led the way. The problem of slow industrial growth therefore evaporated in the historiography towards the end of the twentieth century.

Economic growth in the twentieth century

Similar to the discussions about pre-twentieth century developments, the debate on economic growth and industrial performance since 1900 has greatly benefited from new theories and from new results of economic historical research carried out since the second half of the 1980s. There are many more twentieth century (statistical) data sources available than for earlier periods, but this also leaves much room for different interpretations of the growth trajectory of the Dutch economy. The reconstruction of pre-1914 national accounts data by economic historians and the work of the Central Bureau of Statistics (CBS) covering the twentieth century have led to a consistent set of macro data and its components for the Dutch economy for two hundred years. Dutch GDP growth in the twentieth century was much higher than in the preceding period. Between 1913 and 2000, GDP increased annually by 3.1 per cent, against a growth rate of 1.9 per cent for the period 1820-1913. Per capita GDP increased by 2.0 and 0.8 per cent respectively.[39]

38 H. Roland Holst-van der Schalk, *Kapitaal en arbeid in Nederland* (Amsterdam 1902); a second part, dealing with the period 1902-1925, was published in 1932 under the same title, together with a revised part I.

39 R.J. van der Bie and J.P. Smits (eds.), *Tweehonderd jaar statistiek in tijdreeksen 1800-1999* (Voorburg/Heerlen/Amsterdam 2001).

Looking back from the twenty-first century, it is now possible to interpret the first three quarters of the twentieth century in many countries as a large wave of economic and technological developments resulting from the Second Industrial Revolution. It is characterised by new production processes in metal industries, the rise of chemical industries, electrification, motorisation, communications technologies, and the rise of big business and scale economies. This wave can be viewed as a long-term and structural phenomenon, overarching the shocks that affected the Dutch economy during the twentieth century. There have been at least four major exogenous shocks that had an impact on economic development, their starting dates being 1914, 1929, 1940 and 1973. Were these crises and the related policy reactions turning points in the growth patterns of sectors and industries? What was the nature of economic growth in the Netherlands and was it different from the experiences in other countries?

Structural factors in twentieth-century growth

The early overviews of the Dutch economy during the twentieth century by I.J. Brugmans (1969), Frans Messing (1981) and Johan de Vries (1983) provide detailed descriptions of the economy and of economic policies.[40] Growth and cyclical variations were explained by touching upon many possible factors, but they were not ranked, tested or internationally compared. The overview of Johan de Vries took the form of a Braudelian three-layered approach distinguishing between structure, cycles and economic policies. Behind the general characterisation of the Dutch economy as being open and industrial, he defined five structural factors that have shaped Dutch economic development: geography, demography, technology, ideology and institutions. Later research would follow up on these 'fundamentals' of twentieth century Dutch development. We therefore will start with some general overviews of the Dutch economy before we move on to more detailed studies of sub periods and sectors.

Some of the previously mentioned structural factors can be found in the first comprehensive overview of the Dutch economy in the twentieth cen-

40 I.J. Brugmans, *Paardenkracht en mensenmacht. Sociaal-economische geschiedenis van Nederland 1795-1940* ('s-Gravenhage 1961); F. Messing, *De Nederlandse Economie 1945-1980. Herstel, groei, stagnatie* (Haarlem 1981); J. de Vries, *De Nederlandse economie tijdens de 20e eeuw* (Bussum 1983).

tury by Van Zanden and Griffiths, published in 1989.[41] For this, the authors relied partly on the comparative growth studies of Angus Maddison. This development economist, who was a professor at the University of Groningen, devoted his career to the measurement and analysis of long-term economic growth worldwide. In his publications, the Dutch economy was always centre-stage because it had once been the leading economy in the world.[42] Van Zanden and Griffiths tried for the first time to analyse Dutch growth performance from an international perspective. Their study highlighted peculiar Dutch characteristics, such as the extremely fast growth of the population, which affected the labour market and patterns of capital accumulation. The Dutch economy was portrayed as an industrial latecomer, not very specialised like other smaller economies, but displaying a versatile, diversified process of industrialisation. The modernisation of agriculture and international services, characterised by scale economies, gave birth to a large food processing industry and a sizable shipbuilding and engineering sector. Other important aspects of the Dutch economy were its regional economic diversification and its position as a colonial power. These forces shaped the wave of industrialisation between 1890 and 1965. However, it eventually broke down, giving way to a less broadly based industrial sector, with fewer manufacturing industries and a relative rise in energy-intensive process industries. The authors were the first to point to the comparatively high productivity level of the Dutch economy (which is not the same as GDP per capita) throughout the century.

In a follow-up edition, written by Van Zanden as single author, the concept of the 'long twentieth century' was introduced.[43] According to this view, since about 1870 a broad societal process of changes in economic and institutional structures shaped Dutch industrial society. Industrialisation and the rise of labour unions (in the typical segmented structure of culturally and politically defined pillars) marked a step from liberalism to neo-corporatism. This constellation eventually reached a peak between 1960 and 1980, but was losing strength by the last quarter of the century. Indeed, the period was marked by the technologies of the Second Industrial Revolution and by the rise of large corporations and multinationals. A

41 J.L. van Zanden and R.T. Griffiths, *Economische geschiedenis van Nederland in de 20e eeuw* (Utrecht 1989).

42 A. Maddison, *Dynamic Forces in Capitalist Development. A long-run comparative view* (Oxford 1991). After his death in 2010 Maddison's work has been continued by the so-called Maddison Project, see J. Bolt and J.L. van Zanden, 'The First Update of the Maddison Project; Re-Estimating Growth Before 1820', *The Economic History Review* (forthcoming in 2014).

43 J.L. van Zanden, *The Economic History of the Netherlands, 1914-1995: A Small Open Economy in the 'Long' Twentieth Century* (London 1997).

second characteristic was the important position of the government in the labour market, trying to regulate and control wage levels. Third, it was the period that gave birth to the welfare state, including all kinds of (short-lived) experiments with economic policies. The final characteristic that needs mentioning here is the political economy of Dutch society. Although one cannot maintain that the Dutch economy is small (see e.g. Fremdling et al.[44]), the openness of the economy is substantial, which magnifies its response to international business cycles in times of a liberal market system, while during periods of co-ordination the effects may have been dampened.[45]

Accounting for growth patterns

In 1996, Bart van Ark and Herman de Jong published the first quantitative analysis of the long-term growth of the Dutch economy between 1913 and 1994.[46] They applied growth accounting techniques to divide the growth of real GDP into the contributions of its sub-components: labour, capital input and efficiency. The analysis was based on the latest estimates of GDP and on new estimates of capital stock and labour input.[47] Their study revealed that the 1910s and 1920s stand out as a period showing a significant improvement in economic performance, also in comparison with other countries. Growth of GDP was on average 4 per cent per year and more than 60 per cent was attributable to efficiency gains (total factor productivity, TFP), indicating rapid adoption of newly available technologies. However, there were also long periods of stagnation and negative TFP growth, such as the depression and war years 1929 to 1947. During the post-war golden age, the growth in GDP and TFP was even higher than in the first two decades. The slowdown of the economy after 1973 revealed not only a disappointing performance vis-à-vis the golden years, but also when compared with

44 R. Fremdling, H.J. de Jong and J.P. Smits, 'Die niederländische Wirtschaft während des zwanzigsten Jahrhunderts', *Jahrbuch für Wirtschaftsgeschichte* (2001) 13-33.

45 Dankers, Sluyterman and Van Zanden, *Variaties in kapitalisme*: *Ontwikkeling en prestatie van de Nederlandse markteconomie in de twintigste eeuw* (*Den Haag, 2013*).

46 B. van Ark and H.J. de Jong, 'Accounting for Economic Growth in the Netherlands since 1913', *Economic and Social History in the Netherlands* 7 (1996) 199-242.

47 G.P. den Bakker, C.A. van Bochove and Th. A. Huitker, *Macro-economische ontwikkelingen, 1921-1939 en 1969-1985* ('s-Gravenhage 1987); R.J. van der Bie, *'Een doorlopende groote roes': De Economische ontwikkeling van Nederland, 1913-1921* (Amsterdam 1995); P. Groote, R.M. Albers and H.J. de Jong, 'A Standardised Time Series of the Stock of Fixed Capital in the Netherlands 1900-1995,' *Groningen, Groningen Growth and Development Centre Research Memorandum* 25 (1996).

the first two decades of the century. The figures in this study point to an economy that was capital intensive and relatively efficient in terms of labour productivity (GDP per hours worked), but with modest levels of GDP per capita. There was a big expansion in the non-active population of working age. One of the characteristics of the century is that the Dutch economy failed to catch up with US levels in terms of per capita income, but it did in terms of labour productivity.

The capital-intensive nature of the Dutch economy was also highlighted in the study of manufacturing industry between 1913 and 1965 by De Jong.[48] This study was based on a detailed analysis of official production statistics from the Central Bureau of Statistics, and inspired by the approach developed by Bart van Ark, Angus Maddison and Rainer Fremdling to measure the performance of sectors bottom-up and make direct comparisons with other countries. This method, termed ICOP (International Comparison of Output and Productivity), has produced many sector comparisons across countries and can be seen as an addition to country comparisons on the level of total GDP.[49] De Jong found that the industrial sector was the most dynamic part of the Dutch economy in terms of growth of output as well as employment. The growth of the industrial sector was stimulated by the exogenous shocks of the wars and the globalisation backlash during the first half of the twentieth century, leading to import substitution and domestic policies favouring the creation of industrial jobs.[50]

In the next section, we will take a closer look at the discussions on sub periods of the twentieth century to see if and how the various exogenous shocks of the wars and crises have shaped the pattern of Dutch economic growth.

Was the First World War a turning point in long-term economic development?

Ronald van der Bie made a first reconstruction of Dutch GDP during this war and its aftermath (1913-1921), improving on earlier crude estimates made

48 H.J. de Jong, *Catching Up Twice. The Nature of Dutch Industrial Growth during the 20th Century in a Comparative Perspective* (Berlin 2003).

49 Bart van Ark, *International Comparisons of Output and Productivity. Manufacturing Productivity Performance of Ten Countries from 1950 to 1990* (Groningen 1993).

50 Technology development and its impact on the twentieth century Dutch economy and society is the central topic of the monumental seven-volume series edited by technology historians Johan Schot, Harry Lintsen and Arie Rip. See the chapter by Karel Davids for a review of this literature.

by the Central Bureau of Statistics.[51] He estimated that real GDP declined during the war by about 15 per cent, but in 1921 the level of GDP was 20 per cent higher than the level in 1913. Because of the war prices rose rapidly whereas nominal wages stagnated, generating extremely high profits for businesses. The country was able to maximise on the trading possibilities that were still left. Not only did neutrality shield Dutch society from the direct disasters of warfare, it also brought many new opportunities for the Dutch economy to modernise quickly. During the first two decades of the twentieth century, the industrial base of the country was broadened by new activities, for example in mining, oil, and basic metals. There was a growing share of big business in the economy and concentration in retail banking and industrial banking (Joost Jonker 1996).[52] In his dissertation on Dutch agriculture, Merijn Knibbe described the rapid modernisation of Dutch agriculture brought on by a large demand from the (former) hostile countries that had witnessed stagnation in domestic production.[53] Improvements in agricultural education, research and quality control strengthened the supply side. Industrial efficiency increased quickly; one of the examples is the reduction of the working week in 1919 while nominal weekly wages remained unaltered. This implicit rise in hourly wage rates had barely any negative effect on businesses and on international competitiveness because productivity also had risen, as shown for instance by Lex Heerma van Voss.[54] A synthesis of recent studies by De Jong displays a picture of an economy that profited from the specific dynamics of the Great War and its aftermath. In contrast to many hostile countries, the circumstances of the war stimulated the modernisation of the economy, through new capital outlays, the broadening of the industrial base and the use of new technology, symbolised by the rapid introduction of electricity and electrical motors in manufacturing.[55]

51 Van der Bie, *'Een doorlopende groote roes'*.

52 J.P.B. Jonker, *Merchants, Bankers and Middlemen* (Amsterdam 1996).

53 Knibbe, *Agriculture*.

54 A.F. Heerma van Voss, *Kosten van arbeidstijdverkorting. De achturendag in de jaren twintig* (Utrecht 1991); see also H.J. de Jong and R.M. Albers, 'Industriële groei in Nederland, 1913-1929: een verkenning', *NEHA-Jaarboek voor Economische, Bedrijfs- en Techniekgeschiedenis* 54 (1994) 444-490.

55 H.J. de Jong, 'Between the devil and the deep blue sea: the Dutch economy during World War I', in: S. Broadberry and M. Harrison (eds.), *The Economics of World War I* (Cambridge 2005) 137-168.

Modernisation and stagnation during the interwar period

How did the Dutch economy reap the benefits of the new technologies of the Second Industrial Revolution and did the depression hamper technological development? A very valuable account of the interwar period is still the three-volume set *De Nederlandse volkshuishouding tussen twee wereldoorlogen* (*The Dutch national economy between the two world wars*), published in 1952, with detailed contributions on Dutch agriculture, industry, services and on the total economy.[56] The most discussed period is arguably the decade of the 1930s, when the Dutch economy faced the Great Depression and the effects of the globalisation backlash. Keesing's analysis of monetary and economic policies during the leadership of Prime Minister Colijn (1933-1939) has been central in the debate about why the Dutch economy had such a late recovery from the global crisis.[57] He blamed the long-lasting depression in the Dutch economy on government policies to maintain a fixed rate of exchange by staying on the gold standard until 1936. This monetary policy necessitated a deflationary adjustment policy, which hampered economic recovery. Keesing's view was attacked by Klein, who stressed that a change in such policies would not have mattered because of the obsolete structure of the Dutch economy.[58] During the 1970s and 1980s, many new contributions have been added to the debate, alternating between the two views; see Drukker for a discussion.[59] In his inaugural lecture of 1988, Van Zanden concluded that the position of Klein was untenable and that Keesing's analysis gave a more accurate account of the situation; an earlier devaluation would have had less devastating effects on the economy and employment levels.[60] International analyses of the interwar period have shown that countries that had left the gold standard at an early phase were not forced into a painful path of deflation and therefore recovered faster. In his dissertation of 1990, Hein Klemann showed that the Dutch

56 P.B. Kreukniet (ed.), *De Nederlandse volkshuishouding tussen twee wereldoorlogen* (Utrecht 1952).

57 F.A.G. Keesing, *De conjuncturele ontwikkeling van Nederland en de evolutie van de economische overheidspolitiek 1918-1939* (Utrecht en Antwerpen 1947), also published in Kreukniet (ed.), see previous note.

58 P.W. Klein, 'Depressie en beleid tijdens de jaren dertig. Kanttekeningen bij de ontwikkeling van de Nederlandse volkshuishouding in de jaren dertig', in: J. van Herwaarden (red.), *Lof der Historie* (Rotterdam 1973) 289-336.

59 J.W. Drukker, *Waarom de crisis hier langer duurde. Over de Nederlandse economische ontwikkeling in de jaren dertig* (Amsterdam 1990).

60 J.L. van Zanden, *De dans om de gouden standaard. Economisch beleid in de depressie van de jaren dertig* (oratie, Amsterdam 1988).

economy suffered relatively heavily from the depression, because its most important trading partners practiced beggar-thy-neighbour policies. The United Kingdom imposed the General Tariff and depreciated the pound, and Germany bilateralised its international trade. Both were harmful to the volume of Dutch exports.[61] Drukker nevertheless stressed that structural factors are key in explaining mass unemployment, because labour-force growth had outpaced the increase in investments during the 1930s.

Several studies have revealed that the stressful macro-economic situation in the interwar period did not stop economic and technological modernisation. In many sectors of the economy, technical progress was apparent. In manufacturing, there were signs of strong recovery, partly through import substitution. De Jong's study documents that both real industrial output and employment rose after 1932. However, employment growth was much slower than output growth, indicating fast rising efficiency, in particular during the period from 1925 to 1935. Knibbe reported successful performance in agricultural output and productivity. After 1929, agricultural output declined rapidly, but government support turned out to be rather beneficial for the sector. After 1936, there was a rapid increase in farm incomes and rising labour productivity.[62] This would reinforce the agricultural sector, which was a blessing in disguise during the German occupation between 1940 and 1945, when an effective system of production and distribution secured the food supply for the Dutch population. In his book published in 1985, Gerard Trienekens showed that the great famine of the winter of 1944-1945 that hit the urbanised western part of the Netherlands was caused by a breakdown of the transport system, not by a lack of domestic food supply.[63]

Did the Second World War change the economic structure of the country?

How extensive was war damage and how different was the experience compared with the First World War? Until the mid-1980s, the general view of Dutch society during the war and the German occupation had been domi-

61 H.A.M. Klemann, *Tussen Reich en Empire, De economische betrekkingen van Nederland met zijn belangrijkste handelspartners: Duitsland, Groot-Brittannië en België en de Nederlandse handelspolitiek, 1929-1936* (Amsterdam 1990).

62 De Jong, *Catching up*; Knibbe, *Agriculture*.

63 G.M.T. Trienekens, *Tussen ons volk en de honger. De voedselvoorziening 1940-1945* (Utrecht 1985).

nated by the monumental work of L. de Jong, *Het Koninkrijk der Nederlanden in de Tweede Wereldoorlog* (*The Kingdom of the Netherlands in World War II*).[64] Economic development during the occupation was painted in dark colours, stressing decline, exploitation, forced labour, and impoverishment of the Dutch population on a massive scale. This view has been revised by Herman de Jong and foremost by Hein Klemann, who in 2002 published a monograph on the economic development of the Netherlands between 1938 and 1948.[65] The revision was necessary because the traditional accounts of the war damage, with presumed mass looting and production losses, proved difficult to reconcile with the fast growth of (industrial) production shortly after 1945 that was observable in the post-war statistics of the Dutch economy. Two conclusions were reached. First, both employment and output levels were much higher than in the official wartime estimates of the CBS. Second, damage and losses of capital were lower than officially reported. Industrial machine capacity had grown by 33 per cent between 1938 and 1946 (already reported by Van Zanden and Griffiths in 1989). War damage was mainly limited to delays to repairs and replacement. Klemann calculated that national production fell back to 80 per cent of its 1938 level. Because the Germans extracted more than 40 per cent of production, the available income in the final years fell back to about 50 per cent of the 1938 level, which indeed points at impoverishment during the second half of the German occupation. However, replenishment of the stocks of raw materials led to a quick recovery of industrial output, which had already surpassed the pre-war level by 1947.

These recent analyses have revealed a great continuity in economic and technical development in all major sectors of the economy during the 1930s, 1940s and 1950s. This leads to the conclusion that World War II was probably less a turning point in Dutch economic history than World War I, when industry really took off by broadening and deepening its structure and raising its efficiency. The effects of aid provided under the Marshall Plan have been studied by Van der Eng and by Eichengreen and Uzan. Both studies show that the effect of aid on the annual growth of net national income was modest.[66] Although the Netherlands was one of the

64 L. de Jong, *Het Koninkrijk der Nederlanden in de Tweede Wereldoorlog* (Amsterdam 1970-1988), see esp. III (1970), IV (1972), VII (1976), Xb (1981/82), XII (1988).

65 H.A.M. Klemann, *Nederland 1938-1948. Economie en samenleving in jaren van oorlog en bezetting* (Amsterdam 2002); De Jong, *Catching up*.

66 P. van der Eng, *De Marshall-hulp. Een perspectief voor Nederland 1947-1953* (Houten 1987); B. Eichengreen and M. Uzan, 'The Marshall Plan: economic effects and implications for Eastern Europe and the former USSR', *Economic Policy* 7 (14) (1992) 14-75.

greatest receivers of Marshall Plan aid, the most important effect was that it facilitated the restoration of financial stability and the liberalisation of production and prices. In a similar way, a study by Clerx in 1986 concluded that the post-war recovery of the Dutch economy accelerated after trade liberalisation with Germany.[67]

Economic growth during the post-war golden age and after

How have economic historians explained the end of the post-war golden age? Why did the crises of the 1970s have such a large effect, causing a major productivity slowdown in the Dutch economy? During the 1960s, the second decade of the golden age, Dutch GDP and per capita GDP growth was even higher than during the 1950s. In the monograph by Van Zanden (1997) and in a contribution by Van Ark, De Haan and De Jong in 1996, it is made clear that the underlying forces explaining growth during the 1960s were different from those of the 1950s.[68] The labour market tightened and wages increased very rapidly during the early 1960s. Wages increased faster than productivity, changing investment behaviour, and capital substituted for labour. The Dutch Central Planning Bureau estimated that profitability declined significantly during the 1960s.[69] The economists Den Hartog and Tjan explained the decline by applying vintage models of the Dutch economy. These macro-economic models linked rising labour costs to the premature scrapping of old equipment and its replacement by newer alternatives with lower labour requirements.[70] Behind the rosy picture of rapid welfare growth, the 1960s in fact witnessed the end of the post-war growth miracle. The traditional possibilities to catch up with wage rises, inflation and the decline of old industries had been exhausted. However, the exploitation of indigenous natural gas reserves allowed the country to gain a competitive edge in energy-intensive and capital-intensive production.

The rapid rise of energy prices during the 1970s, and especially the second oil crisis in 1979, hit the Dutch economy very hard. Keetie Sluyterman has analysed this period from the perspective of business behaviour and its

67 J.M.M.J. Clerx, *Nederland en de liberalisatie van het handels- en betalingsverkeer, 1945-1958* (Groningen 1986).

68 B. van Ark, J. de Haan and H.J. de Jong, 'Characteristics of Economic Growth in the Netherlands During the Postwar Period', in: N.F.R. Crafts and G. Toniolo (eds.), *Economic Growth in Europe Since 1945* (Cambridge 1996) 290-328; Van Zanden, *A Small Open Economy*.

69 CPB, *De Nederlandse economie in 1980* ('s Gravenhage 1976).

70 H. den Hartog and H.S. Tjan, 'Investment, Wages, Prices and Demand for Labour', *De Economist* 124 (1976) 32-55.

long-term consequences. She concluded that the global recession of the 1970s accelerated the transformation of the Dutch economy from industry to services.[71] Another characteristic of this period mentioned by Sluyterman was the further internationalisation of Dutch business, also applicable to services. Internationalisation became stronger with the creation of the internal market within the European Union. Large Dutch multinationals in the service sector were created – in banking, insurance, accountancy, publishing and retailing – while at the same time manufacturing came partly into foreign ownership (transport equipment and paper). During the last quarter of the twentieth century, the Dutch economy seemed to come full circle. It resembled more than ever the situation of the pre-1914 period, with a very open and internationalised economy where large industry was less dominant and less integrated.

The crisis of the 1970s, de-industrialisation and increasing globalisation toward the end of the twentieth century also had a profound impact on the labour market and on industrial relations. Jelle Visser and Anton Hemerijck have studied the transformation in the political economy of the country.[72] The disappointing performance of the economy with many job losses and growing unemployment led the employers' and workers' organisations to sign a social pact (the much-discussed Wassenaar Agreement of 1982), where wage moderation was exchanged for shorter working hours and early retirement schemes, to restore profits and to increase the number of jobs. This was followed by record job growth in the 1990s, in particular part-time jobs for women in the service sector. Wage restraint and reforms in the labour market (new laws on working hours and flexible jobs) and social security insurance reforms improved the competitiveness of the Dutch economy, fuelled by a neo-liberal ideology of economic liberalisation, deregulation and the privatisation of state-owned businesses (telecommunications and energy).

The aforementioned study by Van Ark and De Jong shows figures on GDP and employment growth, which illustrate that from 1985 the Dutch economy was on a job intensive growth path.[73] They concluded that wage moderation stimulated investment by restoring profitability and increasing

71 K.E. Sluyterman, *Dutch enterprise in the twentieth century: Business enterprise in a small open economy* (London and New York 2005).

72 J. Visser and A. Hemerijck, *'A Dutch Miracle': job growth, welfare reform and corporatism in the Netherlands* (Amsterdam 1997). See also: J. Touwen, 'How does a coordinated market economy evolve? Effects of policy learning in the Netherlands in the 1980s', *Labor History* 49 (4) (2008) 439-464.

73 Van Ark en De Jong, 'Accounting'.

exports. However, one of the effects of this growth strategy was that labour productivity trailed behind, as did innovation. The economic retardation of the 1980s therefore cannot be seen as return to a 'normal' growth path after the fast growth in the 1950s and 1960s. Post-1973 growth in TFP was slower than in the pre-1929 period. The low TFP performance can be interpreted as the combined effects of the end of the wave of the Second Industrial Revolution, greater exposure to the forces of globalisation and successful job creation. At the turn of the twenty-first century, it manifested itself as a much admired and miraculous 'third way' in between the co-ordinated and liberal market economy. However, possibly it was just a peculiar 'Dutch' way of catching up. Looking more closely at the figures, the favourable GDP per capita growth of the 1990s was to a large extent the result of an economy and society that had successfully managed to increase its (female) participation rates to international levels. Future research by new generations of economic historians will answer the question of how well the Dutch economy has reaped the fruits of the technologies of the ICT era or whether these possibilities already had been exhausted at the start of the twenty-first century.

Conclusion

Dutch economic history writing closely followed international trends, in particular from the 1970s onwards when the discipline began to focus more on international debates. The big issues of international economic history – growth and industrialisation – quickly achieved a central position in the Dutch scene as well, albeit that the focus was often somewhat different. Here, the debate centred on the slow pace of industrialisation during the nineteenth century, whereas in neighbouring countries the focus was on explaining the Industrial Revolution. Gradually, analytical instruments developed by economics – such as the analysis of factor prices as drivers of technological choices and of TFP growth as the source of long-term economic change – were incorporated into the toolkit of the Dutch economic historian.

One of the aims of macro research was to reconstruct the development path of the Dutch economy in the long term. In this regard, the project has been relatively successful; current time-series of GDP for the Netherlands as a whole go back to 1806, whilst for Holland, estimates for the Early Modern Period and even the late Middle Ages have been produced. This work on the Dutch historical national accounts has been part of the large international research project organised by Angus Maddison to chart the development of the world economy in the last two millennia. With the research of the Maddison group at Groningen University and related work elsewhere, the Netherlands became a global centre of the study of growth and productivity change in the world economy, resulting in a number of large research projects (International Comparison of Output and Productivity, the Maddison Project and Clio Infra),[74] which strengthened the central position Dutch economic historians have played in this field. In this overview, we concentrate on research into the economic history of the Netherlands, but a trend not yet mentioned is that increasingly, Dutch scholars have focused their attention on other parts of the world – former colonies such as Indonesia or South Africa, but also China and the world as a whole – often making use of the archival sources accumulated in the Netherlands as part of the colonial legacy.

At the same time, although we know much more about the growth record of the Dutch economy in the long term, there is less consensus about the causes of its strong performance in certain periods, and its much slower growth during other periods. In other words, work on the interpretation of its development path has only started, especially for the earlier period – before 1800 – for which we have many interesting hypotheses about the role of institutions, gender relations, religion and human capital formation, but only a few studies that have managed to test those ideas in a more or less convincing way. The Netherlands, and in particular its western part, became during the Late Middle Ages perhaps the first 'market economy', which generated a process of slow but consistent economic growth from the late fifteenth century onwards. It actively took part in the birth of economic modernity, but we still do not really understand why this happened there and then. Solving this puzzle is probably the greatest challenge for Dutch economic history in the next decades.

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74 For these large-scale international research projects see the relevant webpages of the Groningen Growth and Development Center (http://www.rug.nl/research/ggdc/); the Maddison Project (http://www.ggdc.net/maddison/maddison-project/home.htm) and the Clio Infra project (http://www.clio-infra.eu/)

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