Behind the clouds; cooperation in Dutch business around 1900

Joost Dankers
Bram Bouwens
Research Institute for History and Culture
Utrecht University

May 2004

Introduction

In 1903 the Dutch socialist F.M. Wibaut published a book on trusts and cartels in business. This work contained a theoretical survey of these aspects of business behaviour in industrial organisation and a general outlook of the well-known cases in all parts of the western world.[1] After reading Wibaut, one could get the impression that restrictive trade practices dominated business at the turn of the century in both national and international trade. In most branches of industry collusion seemed to be more profitable than competition. These associations with monopolistic aims occurred everywhere.[2] According to Wibaut Dutch practices differed slightly from the developments abroad. He witnessed less cartel agreements in the Netherlands and in contrast to the habits and customs in other countries most of the comprehended agreements were surrounded with a strange scent suggesting mystery and secrecy. Nowadays, a publication like Wibaut's would attract much attention from the public, the press and the government. In our era of deregulating and extending the scope for market forces and competition Wibaut would be a bestseller. Unfortunately for the author, his work received little attention at its publication in 1903. Only one review could be traced. In this, the commentator accused Wibaut of overestimating the significance of cartelisation. The volatility of most agreements was high and therefore most cartels should be considered as ineffective.[3] The reviewer expressed a thought that was common in the Netherlands in these years. Trusts and cartels were no such hot issues in the Netherlands as they were elsewhere. The Dutch Ministry of Economic Affairs ignored these kinds of coordination and allocation strategies of the firms. It was not until 1908 that the government first tried to make an inventory of formal and informal collusive institutions.

This paper analyses the way Dutch businessmen attempted to influence and shape market structures and control the negative features of competition at the turn of the century. We focus on similarities and differences in the way Dutch businessmen and their colleagues/competitors abroad organised themselves in order to eliminate risks and uncertainties of competition or to expand through a process of external growth (mergers and acquisition). Were there differences between the Dutch practices of doing business and the way their colleagues in other countries entered the market? And if, how can these

---

[1] F.M. Wibaut, *Trusts en kartellen* (Middelburg 1903)
[2] definition from R. Liefmann, *Kartelle, Konzerne und Trusts* (Stuttgart 1927) 4;
[3] J. d'Aulnis de Bourouill, Review of F.M. Wibaut 'Trust en kartellen' in: *Economist* (1904) 152-157

dissimilarities be explained? Our assumption is that both industrial structures and socio-economic institutions are the core of a framework that can explain differences in the way businessmen from different countries/cultures organised their activities. To analyse and explain similarities and dissimilarities we make use of the theoretical framework of the business system as elaborated by Whitley, Hall & Soskice, Van Dijck & Groenewegen and others.[4] Business systems are – in the words of Whitley – configurations of hierarchy-market relations that become institutionalised in different market economies in different ways as the result of variations in dominant institutions. So, business systems take departure from the idea that distinctive ways of organising economic activities become established because of major differences in key social institutions, such as the state, the financial system and the education and training system. By studying these configurations systematically, we can compare and analyse the developments in the Netherlands with other countries. This paper will compare the dialectical relationship of collusion and competition of the industry in the Netherlands about 1900 with the situation in the United States, Great Britain and Germany. These countries are selected because of their supposed influence on the Dutch economy.

The paper is structured as follows. In section 1 we concentrate on the main differences in the concentration processes that took place at the turn of the century in the United States, Great Britain and Germany. In the following two sections we will look at two phenomena in Dutch industry that could explain the divergence or convergence in strategies from businessmen regarding competition. Section 2 deals with the structure of the industry as a determinant for collusive practices and section 3 examine the influence of social and family ties in the organisation of joint actions. Subsequently we try to picture the developments in collusive practices in the Netherlands and test some assumptions on the topic from the huge literature on concentration processes. Finally, we will answer the central research questions, assess the incentives for Dutch businessmen to cooperate and elucidate the similarities and dissimilarities of the Dutch case with the developments in the United States, Great Britain and Germany.

[4] R. Whitley, *European Business Systems and markets in their national contexts* (London 1992); R. Whitley, *Capitalisms; the Social Structuring and Change of Business Systems* (Oxford 1999); P.A. Hall. en D. Soskice (eds.), *Varieties of Capitalism; the institutional foundations of comperative advantage* (Oxford 2001); J.J.J. van Dijck & J.P.M. Groenewegen (eds.), *Changing business systems in Europe; an institutional approach* (Amsterdam 1994)

1. The first merger wave: Similarities and dissimilarities in US, UK and Germany

Quantitative data on mergers, acquisitions and other collusive practices are scarce. Nobody knows the exact number of arrangements and transactions at the turn of the 19th to the 20th century. In spite of that, we do have scattered information for most countries on cooperation among businessmen in these years. Especially the developments at the United States are well documented. A.D. Chandler jr. saw a sequence of collusive routines ranging from trade associations to mergers. Trade associations were very helpful to their members. They could upgrade education, launch new research programs, encourage ethical business practices and communicate the viewpoint of the business to political authorities. They could also manage cartel-agreements. As Chandler made clear trade associations for the purpose of controlling prices and allocating production appeared in most industries in the United States. According to Chandler many of these associations consolidated into a single enterprise during the last decades of the 19th century.[5]

The introduction and adoption of new modes of production, distribution and management that resulted in the rise of the managerial enterprise promoted new forms of joint action. But also the evolution and expansion of the railroads and telegraphic networks that enlarged markets and at the same time increased competition accelerated this process of concentration.[6] The stability of the existing cartel-agreements, which was not that large from the beginning, came under pressure. The interests of the firms frequently diverged and what appeared to be optimal for the group might often not be preferable for the individual member. The members of the cartel stayed autonomous and could decide to cease the agreement anytime. Or as one of the participants once said: 'many of these gentlemen agreements lasted a day, some lasted until the gentlemen could go to the telephone from the room in which they were made'.[7] The temptation existed to secret rebates, falsifying reports or failing to record sales. The agreements did not have the binding effect of a contract. In return the owners of leading firms often purchased stock in each other's firms and in the smaller companies of the trade associations. Nevertheless, it was impossible to coordinate day-to-day operations or investment decisions. So, as an alternative to cartel agreements with their lack of long-run stability, other collusive practices became popular at the end of the 19th century. One the most popular instruments shaping market structures was the trust, in which a number of companies turned their stock over to a board of trustees that could act as a board of managers. One of the most important trusts was the Standard Oil Trust (1882), in which J.D. Rockefeller played a key role. Several others in for example sugar, whiskey, linseed oil and lead processing industry followed this trust. Geographical concentration often assisted the trusts. During the last decade of the 19th century many of these trusts were modified into a holding company and a first merger wave occurred.

Not only the known facts of the second Industrial Revolution and the challenges of the firms competing on larger markets determined the way businessmen cooperated. Institutional developments matted as well. By the end of the 19th century US firms began to be incorporated limited liability for stockholders. Their shares became commodities on the New York Stock Exchange, which made it possible to trade in property rights of firms and acquire competitors. Moreover, promoters made mergers and acquisitions – dealing with

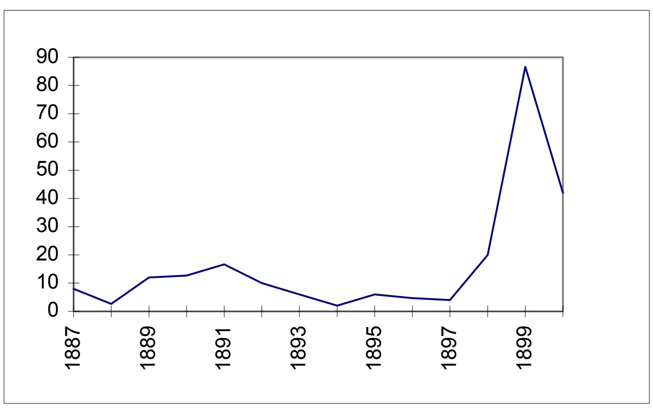
[5] A.D. Chandler, *The visible hand; the Managerial Revolution in American Business* (Cambridge/Mass 1977) 315-320

[6] A.D. Chandler, *Scale and scope; the dynamics of industrial capitalism* (Cambridge/Mass. 1990) 47-89; J.L. van Zanden and A. van Riel, *Nederland 1870-1914 Staat, instituties en economische ontwikkeling* (Amsterdam 2000) 377-387

[7] See: J. Lypczynski and J. Wilson, *Industrial Organisation; an analysis of competitive markets* (Harlow/England 2001)

monopolies – to an attractive commodity. Investment bankers and stockbrokers began to participate in this process and arranged the legal and financial organization of such a transaction. This institutional change seemed to be one of the proximate causes for the development of the merger movement in the last decade of the 19th century.[8] More important for the consolidation process was the legislation in this field. Though most trusts were not formed for the purpose to obtain control over the output, but as an instrument to exploit economies of scale and rationalize the industry, the trust came under attack in political and legal institutions. The term trust tended to connote something evil, a social disease. In the perception of the American consumer the firm with its monopolistic ambitions enjoyed maximum profits while the consumer paid a price for these collusive practices of the industry. In reality, evidence from the 1950s shows that firms entered cartel agreements and trusts to protect themselves rather than because of a desire to exploit markets.[9] Nevertheless, in 1890 the Sherman Anti-trust Act was passed. The new legislation forbade monopoly and any form of combination in restraint of trade and interfirm cooperation. This legislation was uniquely American. No other nation adopted such a law before World War II. The effectiveness of the Sherman Law in dealing with conspiracies was not clear at the beginning. The first crucial decisions making price fixing illegal occurred at the late 1890s. At that time, many trusts and trade associations merged into a holding company as an alternative for the illegal trusts and cartels. As a result the number of mergers increased and a real merger wave occurred. Only in 1899 over 1200 firms disappeared because of the consolidation process that took place. Many former competitors merged, making use of the possibilities of the financial infrastructure. As figure 1 makes clear some of these transactions were very capital intense.

Figure 1: number of combinations with capitalization of 1 million dollars or more, United States, 1887-1900[10]



[8] See for example: G.J. Stigler, 'Monopoly and oligopoly by merger' in: *American Economic Review Proceedings* 40 (1950) May, 23-24; For more about the theoretical approaches towards explaining merger waves, see: B. Bouwens, 'Merger waves in the Dutch paper and board industry, 1945-1993' *Proceeedings of the 6th EBHA conference* (Helsinki 2002)

[9] See for example: A. Jacquemin and M.E. Slade 'Cartels, collusion and horizontal merger' in: R. Schmalensee and R.D. Willig (eds), *Handbook of Industrial organisation* (Cambridge/Mass. 1989)

[10] E. Jones, *The trust problem in the United States* (New York 1921) quoted in: R. Stigler, ' Monopoly and oligopoly by merger'

These mergers took place in all sectors of the industry with an emphasis on oil, chemicals, steel, food and machinery. This merger wave was characterized by a multi-firm consolidation, bringing together many firms in one corporation. Large corporations like US Steel, Anaconda Copper, General Electric and International Paper were established in these years. So, the increasing numbers of mergers from 1898 onwards were not only a matter of firms striving after economies of scale and scope, but reflected also the conditions of the financial markets and the interpretation of the Sherman Act.[11]

At the other side of the Atlantic Ocean British businessmen cooperated within a very different context. The bulk of industrial activity was in the hands of family business. While it was possible for such businesses to register and amalgamate into larger units, the process was not as easy as it was for the modern company with its diffused share ownership and fewer family loyalties. At this point it should be stressed that the recent discussions on family firms made clear that the way British business was organised – in the words of Chandler as personal capitalism – should not be reviewed as inferior or subordinate. As M. Rose, G. Jones and others argued, the managerial firm of Chandler is not the only way towards business success.[12] The practices the businessmen used to eliminate the negative aspects of competition seem to prove this. The collusive practices of the British industry and the succession of the different instruments to control markets looked much like the situation as it was in the United States. During the last decades of the 19th century many manufacturers turned to informal agreements concerning price, output and quality. As in the United States the problem was one of enforcement. The interdependence of the firms and the divergence of interests were often far more complicated than it might at first appear.[13] Also in the public opinion on collusive practices were similarities between the American en British consumers. Also in Great-Britain combinations in restraint of trade were illegal, though very few cases were brought in British court.[14]

Though there were many similarities between the American and British succession of collusive practices, there were several differences, due to the structure of the industry and the dominance of the family firm in Britain. Especially with regard to mergers and acquisitions, the structure of the industry was of great importance. In contrast to the American developments, the British amalgamation movement made little progress up until 1914. Nevertheless, Jones and Mariott counted more than 200 mergers and acquisitions in 1900.

Table 1: concentration in British industry about 1900.[15]

Name	Year	Industry	Number of participants	Goal
United Colleries	1898	Coal	8	Elimination of competition
United Colleries	1902	Coal	24	Elimination competition

[11] G. Bittlingmayer, 'Did anti-trust policy cause the great merger wave?' in: *Journal of Law and Economics* 28 (1985) April; H.W. de Jong, 'De concentratiebeweging in de Amerikaanse economie' in: *ESB*, 24-02-1988; A.D. Chandler, *The visible hand,* 331-336

[12] G. Jones and M. Rose, 'Family capitalism' in: *Business History* 35 (1993) 4; For a brief survey on the discussion of the family firm, see: D. Arnoldus, *Family, family firm and strategy; six Dutch family firms in the food industry, 1880-1970* (Amsterdam 2002) 15-18

[13] See for example: J. Lypczynski and J. Wilson, *Industrial Organisation* 84-98

[14] A.D. Chandler, *Scale and scope*, 286-288

[15] H.W. de Jong, ' De concentratiebeweging in de Europese economie' in: *ESB* 02-03-1988; O. Jones and O. Mariott, *Anatomy of a merger; a history of GEC, AEI and English Electric* (London 1970); F.R. Jervis, *The economics of mergers* (London 1971)41-51

Associated Portland Cement	1900	Cement	27	Elimination competition
English Sewing Cotton	1897	Cotton	14	Elimination competition
J.P. Coats	1895	Cotton	2	Expansion
J.P. Coats	1896	Cotton	2	Expansion
Fine Cotton Spinners	1898	Spinning	40	Expansion
Bradford Dyers	1898	Finishing	22	Economies of scale
Calico Printers	1899	Printers	54	Cost reduction
British Cotton & Wool Dyers Ass.	1900	Finishing	46	Elimination competition
Yorkshire Wool combers Ass.	1899	Refining	38	Elimination competition
Salt Union	1888	Raw materials	64	Elimination competition
United Alkali	1890	Salt/chemicals	49	Eliminating competition
Imperial Tobacco	1900	Tobacco	5	Eliminating competition
Bleachers Ass.	1900	Textiles	53	Eliminating competition
Wall Papers Manufacturers Com.	1900	Wall paper	33	Monopoly
British Oil & Cake Mills	1899	Oil	17	Eliminating competition

The differences between the consolidation process in the United States and Great Britain might be explained by the limited power of the monopolist in Britain due to the policy of free trade. While most countries on the European continent questioned the classical liberal beliefs during the last decades of the 19th century, the British politicians still regarded the 'laissez-faire' doctrine as the basis of British prosperity. This of course influenced competition on the home markets. For example, in the cotton industry the large proportion that was exported to a variety of different markets fortified cooperation. Moreover, the high degree of specialisation in most branches of British industry to suit different customers was against the standardised type of product that might induce concentration of production.

The dominance of the family firm also affected the way the consolidation process took place. With the concentration of ownership in family hands it was common for all combining firms to be represented on the board of directors. This led to a large board, composed of people who had sectional interests as managers. The English Sewing Cotton Company is a good example of the consequences of the specific British industrial structure. The Company was registered in 1897 with 14 firms but did not succeed to reach any economies of scale or scope. As a result the managerial compromises of the merger was powerless and inefficient. The company 'made the awful mistake of putting into control of the various business the men from whom the businesses were purchased, because these men had got into one groove and could not get out of it'.[16] The company was no exception. Other – successful and unsuccessful – amalgamations of family firms solved the questions of authority and control in the same way. In 1898, Bradford Dyers, an amalgamation of 24 firms had a board of 37 directors, Calico Printers Association counted 46 firms and started with a board of 84 directors. As a result it appeared to be very difficult for such corporations to reap the fruits of the consolidation. Administrative centralization, rationalization or new investments in production facilities were often difficult to realize.

In his comparison of American, British and German industry, Chandler saw many similarities between the American en German case. In both countries entrepreneurs made the three-pronged investment in manufacturing, distribution and management and made profitable investments in related industries when economies of scale and scope gave them the opportunity. On the other hand Chandler noticed some very substantial differences. The German industry was more dependent on foreign raw materials and markets and the financial institutions in Germany were less developed as they were in the United States or Great Britain.[17] In spite of that, German businessmen used the same methods as their colleagues in the United States and Great Britain to reduce risks and uncertainties. Especially the formation of cartels was very popular among German businessmen. Most of these agreements were founded during the slow-growth period of the 1880s and can be seen as 'Kinder der Not'.[18] In 1905, the German government knew 400 cartel agreements and Tschierschky estimated about 600 different agreements in German industry in 1911.[19]

A very interesting difference between the German and British and American case is the fact that German government defended the cartels as reasonable and moderate. It even promoted further cartelization, especially in heavy industries, that was to lead to large-scale and vertically integrated corporations. The German courts also patronized these alliances in steel, chemicals and mining. In the 1890s the highest German court delivered several judgments on the legal admissibility and binding force of cartel agreements.[20] This policy corresponded with the public opinion that unrestricted competition could be detrimental for some branches of industry. Though in public the German government prevailed the principle of free trade, at the same time cartels had a responsibility for the well being of the whole economy. This attitude of the German government promoted cooperation among businessmen, especially in periods of surplus production, underemployment and price collapse. Also the big financial institutions instigated cooperation. Especially after 1870, banks had taken advantage of the economic slump to expand their influence in heavy business. Many bank directors became a member of a supervisory board. Feldenkirchen, who did research on the relation of financial institutions and business in Germany found even some companies that could hardly make any decision without the prior consent of their banks. On the other hand, there were many firms that were less depended of these institutions. In industries with a high payback ratio of investments, like nonferrous metals, light machinery and soap banks never played an important role.[21]

The influence of financial institutions, the position of the government and the scale of the industry stimulated the consolidation process in heavy industry. This process had many

---

[16] See: F.R. Jervis, *The economics of mergers* 44-45
[17] A.D. Chandler, *Scale and scope*, 587-589
[18] F. Kleinwächter, *Die Kartelle; eine Frage der Organisation der Volkswirtschaft* (Innsbruck 1883) quoted in: H.G. Schröter, 'Cartelization and decartelization in Europe, 1870-1995; rise and decline of an economic institution' in: *The journal of European Economic History* (1996) 1, 129
[19] R. Liefmann, *Kartelle, Konzerne und Trusts* (Stuttgart 1927) 32; W. Feldenkirchen, in: 'Concentration in German industry, 1870-1939' *The concentration process in the entrepreneurial economy since the late 19th century* (Stuttgart 1988) 116
[20] W. Feldenkirchen, 'Concentration in German industry, 1870-1939' 115
[21] Ibidem, 139-140; A.D. Chandler, *Scale and scope* 589

similarities with the development in the United States. Also in Germany concentration was mainly a matter of big business. The *Interessen Gemeinschaften* (IG) – as a profit pool like the trusts – and the Konzern appeared in steel, chemicals, shipping and mining. The role of the entrepreneur was another resemblance between the German and American amalgamations at the turn of the century. Impressive personalities like Rathenau (AEG), Ballin (HAPAG) or Kirdorf (Rheinisch-Westfälisches Kohlensyndikat) centralized entrepreneurship and were able to rationalize the increased corporation more energetic and vigorous as their British colleagues.

2. Mergers and acquisitions, a matter of big business?

At the turn of the century the Dutch economy was in a process of transformation from a traditional agricultural and trade economy to an economy based on industrial production and services. This transition was preceded by a long period in which the part of the agrarian workers in the total labour force gradually diminished, while the part of the people working in industry and trade grew proportionally. After several decades of stagnation the modernisation process in the Netherlands definitely started from 1865 onwards. Communications and transport became faster and more reliable. The rather quick development of the railway infrastructure that was tightly integrated with the existing network of coaches, made transport of products and people easier and faster. Mail became much more efficient and quick with the use of railway. And for the exchange on information the national network of telegraph that in the 1870s was connected with the Dutch Indies was of immense importance.[22] Between 1865 and 1875 a number of branches in Dutch industry like the paper industry, the textile industry and the typically Amsterdam diamond manufacturing showed a marked growth characterised by mechanisation, concentration and growing productivity.[23] This expansion heralded the process of industrialisation and economic modernisation. It proved to be the start of a structural process in which the importance of industry and services for the Dutch economy would continuously grow during the 20th century.

Table 2: Structure of the Dutch labour force 1870-1909[24]

	Agriculture	Industry	Services
1849	40	31	29
1870	39	31	30
1889	37	32	32
1909	30	34	35

In the second half of the 19th century the number of industrial employees in the Netherlands roughly doubled to a total of 600.000. Especially in the food processing industry, paper production and printing, chemical industry, metals and building, the labour force grew not only in absolute numbers but also in relation to other branches. In the textile, clothing and shoe industry on the other hand the number of employees as a percentage of the total, diminished, though the absolute number still grew. This relative decline was caused by the mechanisation and rationalisation in this traditionally labour intensive industry, which made a very remarkable progress in its productivity.[25]

[22] J.L. van Zanden en A. van Riel,, *Nederland 1780-1914,* 272-275.
[23] Ibidem, 285-286.
[24] Ibidem, 243
[25] J.A. de Jonge, *De industrialisatie in Nederland tussen 1850 en 1914* (Amsterdam, 1968), 226-230

The organisation of production in large units was typical for the industrialisation process. This was necessarily linked with the mechanisation and rationalisation of production. The investments necessary for the implementation of steam energy and other technological improvements forced production into a bigger scale. Such a relatively high investment was only profitable when sufficient efficiency of scale and scope could be reached. This stimulated further rationalisation of labour, concentration of labourers and machines in modern production halls and the growth of the number of industrial workers. In the Netherlands however the strong growth of the number of industrial employees did not necessarily mean a swift advance of big business in Dutch industry as a whole. This probably also affected the way Dutch business coped with rising competition, mergers and collusion.

Only in the textile industry large companies dominated around the turn of the century. In this sector mechanisation and rationalisation took off rather earlier. Already before 1850 the Dutch Trading Company (Nederlandsche Handelmaatschappij) stimulated the production of calico for export to the Dutch Indies. This gave the industrialisation of the textile branch a strong momentum. Its growth was highly stimulated by the guaranteed sales on the protected market of the Dutch Indies. Especially in the eastern region of Twente, where the manufacturing of calico traditionally took place at home by seasonal workers, this activity boomed. Not surprisingly it was in this region, where a superfluous labour force was at hand and wages were low, that the development of large-scale production started. The number of spinning-machines and weaving-looms increased fast, while the number of mills remained relatively stable. As a consequence the scale of production in this industry grew. At the turn of the century the 12 spinning-mills in Twente employed over 3.600 people, while in the weaving-industry where over 16.000 worked in 27 mills, the scope was even larger. Factories with hundreds of employees, or even over thousand people where no longer exceptional in this industry.[26]

This was however not typical of Dutch industry. In the production of bricks for example small-scale producers only working in the summer season, dominated the market. Brickyards where situated along the main rivers of the Netherlands because of the clay they used as raw material. Many of these yards mainly worked for a local or regional market, but it was also rather easy to transport the bricks over water to larger cities. This happened especially in the second half of he 19th century when the population grew and the building of houses and other infrastructure stimulated the demand for bricks. This rising demand did however not encourage brick-producers to expand their production by rationalisation or investments in new technology. The growing demand was matched by expanding the production capacity with more brickyards. The number of employees nearly doubled between 1850 and 1880 and the number of production units grew almost as fast. The average number of employees only marginally rose from 16 to 20 labourers per unit. The heavy competition from Belgian and German producers and a receding demand caused a strong crisis in the obsolete Dutch brick industry in the 1890s. It was only after the turn of the century that modernisation and rationalisation were gradually introduced and modern, bigger companies that produced around the year replaced that small-scale production in the traditional brickyard.[27] In the brick industry small scale handcraft production was only late and very gradually replaced by modern rationalised production methods.

In other sectors, for example the production of alcohol and of paper small-scale producers and modern industry co-existed for a long period. In the paper producing industry industrialisation took off rather early. Around 1900 there were 54 paper and board producing

---

[26] K.E. Sluyterman, *Kerende kansen. Het Nederlandse bedrijfsleven in de twintigste eeuw* (Amsterdam, 2003) 35; J.C.A. Everwijn, *Beschrijving van Handel en Nijverheid in Nederland I* (Den Haag: NV Boekhandel 1912) 289-290 en 294-295.
[27] G.B. Janssen, *Baksteenfabricage in Nederland, 1850-1920* (Zutphen, 1987), passim.

companies with a total of 5.000 employees. Though it was a modernised, industrialised sector, it still had very clear traces of its small scale, handcraft past. The majority of the firms had been in the hands of one family for over generations and were situated in the countryside. There were only two large-scale industrial producers. Van Gelder & Zn in Amsterdam was an incorporated firm that was nevertheless owned by one family. It had production units at several sites, which were together producing more than half of the total Dutch output of paper. The other modern producer was KPN at Maastricht, which at one location produced 10 percent of the total Dutch production in 252 different qualities. The remaining producers were as a consequence much smaller and produced little quantities of a large number of qualities. This made the structure of this sector very heterogeneous.[28]

The same situation existed in the alcohol production were hundreds of small distilleries produced alcohol for the typical Dutch gin (jenever). Very small-scale distillers traditionally made this on the base of malt alcohol out of corn. These small distillers at the end of the century faced strong competition from two companies that produced alcohol on a large scale and with different methods. The first was the Nederlandsche Gist- en Spiritusfabriek at Delft that made alcohol out of corn. It was one of the first modern chemical industries, founded in 1870 by a very progressive entrepreneur, J.C. van Marken. In 1899 a second modern producer was founded in which 26 sugar-producers participated to produce alcohol on the base of molasses. The Dutch sugar-industry closed ranks to protect their interests and ensure a reasonable price for the molasses remaining from the production of sugar. These two modern production units would completely change the character of the industry and the competition on the alcohol-market. The market share of the traditional distillers diminished from 97 to 75 percent between 1895 and 1900 and their number fell dramatically.[29] Both large producers of alcohol soon dominated the market. They dictated prices and shared the market between the two of them.

Though the big companies were undoubtedly in a favourable position, they did not yet dominate the Dutch economy. Compared to other industrialised countries like the US, UK and Germany, Dutch business was still characterised by small and medium sized enterprises during most of the 19th century. Only in the last decade of that century and in the first decade of the 20th the part of medium and large sized business in the total industrial working force doubled. The percentage of employees working in companies with 10 employees or more grew from 23.5 in 1889 to 44.5 twenty years later. Employment in industry grew fast in this period, with 12.000 new jobs a year, mainly because of the growth in medium and large companies. In 1909 nearly a third of the industrial labourers worked in companies with 50 or more employees. Especially in the textile industry, metals and shipbuilding and in the food processing industry this resulted in a remarkable growth in size of the companies involved.[30]

Nevertheless the 'managerial enterprise' as defined by Chandler with its division of management and possession, and characterised by high need of capital, was virtually non-existent in the Netherlands. In numbers of employees there were in 1902, apart from railway companies and publicly owned local gas and transport companies, only about twelve industrial companies that had more than thousand employees. These were all to be found in the textile, metals and glass and earthwork, typically companies that first profited from the

---

[28] B. Bouwens, *Focus op formaat; Strategie, schaalvergroting en concentratie in de Nederlandse papier- en kartonindustrie, 1945-1993* (Utrecht 2003) 67-88; H. Voorn, *De papiermolens in de Provincie Noord-Holland* (Haarlem: De Papierwereld 1960) 69-72.

[29] B. Bouwens, *Alcohol company on the move* (Den Haag: Sdu 1999) 17-25; K.E. Sluyterman en H.H. Vleesenbeek, *Drie eeuwen De Kuyper; een geschiedenis van jenever en likeuren; 1695-1995* (Schiedam 1995) 22-25

[30] De Jonge, *Industrialisatie van* Nederland, 231-233; J.L. van Zanden en A. van Riel, *Nederland 1870*-1914, 288-289 (table 6.8)

industrial revolution.[31] The number of incorporated companies grew only gradually, while the average of the sums invested in these companies even tended to scale down. In terms of capital involved there was only one company that could match the international scope: the Royal Dutch Petroleum Company. Only in a handful of companies like the margarine-producers Van den Bergh and Jurgens, the bulb-producer Philips and of course Royal Dutch, the evolution towards modern big business had made its first steps.[32]

So Dutch business at the beginning of the 20th century was still dominated by small and medium sized companies that were to a large extent owed and managed by families. It is our conviction that the relatively small size of the majority of these companies combined with the differences in size in some sectors, as we saw above, strongly influenced the behaviour of Dutch entrepreneurs. The predominantly small size of the industrial companies was unfavourable for the making of trusts and cartels. These collusive practices did not function very well when there were a large number of companies involved, like in the brick industry. In such a situation it proved very hard to maintain the rules and agreements on prices or production that were made. 'The parties shall be few enough to come to terms readily' the British economist Macgregor already stated in 1906.[33] When there were one or two bigger companies in a branch with a number of much smaller competitors, it proved even harder to reach an agreement. The bigger companies tended to overrule the smaller ones and did not bother to comply with rules or agreements between their smaller competitors. They made agreements between the two of them and left the others to the forces of the free market. It was thus the relative backwardness of Dutch industry that hampered collusive practices and stimulated competition. Nevertheless Dutch business found other ways of organising itself to mitigate the forces of free market and competition. One of the stronger instruments in this respect were the ties of family and social and personal networks.

3. Family firms and personal networks

Individual decision making and autonomy of the independent firm was a key feature of Dutch business in the 19th century and indeed throughout much of the twentieth. The absorbing merger waves were characteristic for Dutch business only for the last decades of the 20th century. That concentration and integration was retarded in Dutch business was undoubtedly due to the family character of Dutch business. For a long time the family firm was typical for Dutch business and even in our time it is still in numbers the most prominent. The Dutch family firm typically sought for agreements and forms of cooperation that would not endanger the autonomy of the firm. Doreen Arnoldus for three Jewish firms in the meat industry and three oil-crushing firms in the Zaan region extensively documented this. Arnoldus concluded that autonomy was the key aspect, not only in the succession strategy of these firms, but also in their strategy on the capital market. The closed (informal) capital market in the Zaan region facilitated the striving for autonomy in the closed family firms, like the strong financial ties between the Jewish families and their connections with the capital market did for the Jewish firms. They all effectively `managed to prolong for a long time the desired marriage of ownership and control.'[34]

Family and social networks proved to be important for the success and stability of cooperation and agreements between firms. This was for example evident in the textile industry in the Twente region, which was dominated by a few families that where closely knit

[31] K.E. Sluyterman, *Kerende* kansen, 32-33.
[32] J.L. van Zanden en A.van Riel, *Nederland 1870-1914*, 379-383
[33] D.H. MacGregor, *Industrial Combination* (London: Bell 1906) 120.
[34] D. Arnoldus, *Family, family firms and strategy,* 371-384, cited at 384.

together by family ties, financial participation and personal networks. Here again family tradition impelled a strong sense of individualism and the desire to maintain the independence of the family firm.[35] In the case of the Twente firm's autonomy was guaranteed by their financial independence. These firms were financed by ploughing back profits, by using the informal credit lines of relatives participating in the company or lending money for investments. The textile tycoons in this somewhat far off region even had there own Twentsche Bank Union, founded in 1861 by B.W. Blijdensteijn, who had many contacts in the textile industry. The Twentsche Bank was also a family firm in which the textile manufacturers were participating because the bank supported their investments and exports.[36] Apart from financial needs, the family and social network also proved very successful in countering rising demands from labourers. When they were threatened with strikes, the textile manufacturers in 1888 founded a union that enforced agreements on wages and working hours to the companies. In the next years a range of other agreements was concluded, varying from technical cooperation to agreements on prices and production, which were outright cartels or syndicates. Thus the informal social and family network mitigated competition. This network substituted formal vertical integration and was important for maintaining the independence and the family character of the firms in this branch.[37]

On the other hand family firms were not always ready for cooperation and informal agreements. In the Dutch brick industry for example the family firm also dominated, but here the owners were traditionally very individualistic, not wanting to give up any piece of their independence in the setting of prices or wages. Here probably the dispersed character of the industry, the small capital involved and the low organisation of the usually seasonal workers, all worked together to make cooperation unsuccessful. Nor did the growing demand and rising prices caused by the booming building industry of the 1860s and 1870s stimulate the search for mutual agreement. When the market crashed in the 1880s nevertheless an Association of Brick Manufacturers was founded, which called all producers to reach hands and make agreements on prices. Though the situation was dramatic and competition fierce, only a quarter of the companies joined the newly founded union. It was typical that most of the members came from a specific region where the largest and most modern producers were concentrated. The union with limited success agitated against foreign competition, which was seen as unfair, and tried to convince the Dutch government that protection of the national industry was necessary. At several times the union made plans to cut production and tried to persuade its members to reduce production voluntarily to the mutual benefit of each. But the self-willed brick producers were full of distrust and only looked for their own benefit. Production cuts were for that reason not reached by agreements, but by the closing down of companies that could not meet the rising competition. As a consequence in the last two decades of the 19th century a third of the Dutch brick companies disappeared, partly because the stubbornness of these family owned firms that were so keen to preserve their autonomy.[38]

A somewhat different picture is given by the sugar and alcohol industry. Especially the alcohol industry was characterized by a large number of smaller family firms. An essential difference however was that there were two larger companies that dominated the market. At the turn of the century, the Dutch sugar industry entered the market of alcohol. In the sugar industry family owned firms had been very profitable in the second half of the 19th century. As a result of their close cooperation they were for several decades powerful enough to

---

[35] H.H. Vleesenbeek, *De eerste grote industriele fusie*, 175, cited by D. Arnoldus, *Family, family firms and strategy* 365.
[36] D. Arnoldus, *Family, family firms and strategy*, 365-366.
[37] Ibidem, 370; K.E. Sluyterman, *Kerende* kansen, 37-38.
[38] G.B. Janssen, *Baksteenfabricage in Nederland*, passim; J.C.A. Everwijn, *Beschrijving van Handel en Nijverheid in Nederland I* 161-162.

manipulate the prices of their raw material, the beet they bought from the farmers. Again at the end of the 19th century the farmers founded cooperative companies to produce sugar from their own beet. Plans to organise the family owned companies into a united sugar firm failed because these firms did not want to hand in their autonomy. Nevertheless they swiftly reached an agreement on the joint production of alcohol when they could no longer profitably sell their waste product molasses. This alcohol company together with the Nederlandsche Gist and Spiritusfabriek soon dominated the market for alcohol that before had been divided between hundreds of small distillers. In a short time dozens of small traditional distillers had to close down because they could not match the competition. The two large companies effectively coordinated their production, exported surpluses and were able to dictate the prices on the very profitable home market. The chief executives of these two companies in fact decided on prices and production for the sector during a copious weekly lunch in one of Rotterdam's best restaurants. The fact that both men were from the same social rank and had a good and friendly relation was of much importance for the success of their joint market strategy.[39]

The family character of most firms induced a policy of autonomy that could hamper agreements or cooperation. These were often seen as limiting the independence of the firm. In a situation of many small competing firms, like in the brick industry this could effectively block cooperation. At the same time mergers or take-overs that would make an end to any form of independence were to be avoided. So when the market conditions deteriorated, in most sectors the family companies also sought for cooperation or agreements as an acceptable alternative for a complete take-over or bankruptcy. In these situations regional concentration proved to be a positive condition for the success of cooperation. Of course regional concentration was also conditional for a tight social network and close family ties.

These family ties and social networks in many cases proved to be important for the success of agreements. Personal relations could be decisive for the success of cooperation like in the textile industry, or the stability of a cartel, like in the alcohol industry. How important a shared social background could be is illustrated by the initiative Van Marken took in 1898 to found an association of firms exporting Dutch products. The owners of these firms were invited at his home and selected on their family ties and social contacts. The members were not to be each other's competitors. The selection reads as a shortlist of the upper ten of Dutch business around 1900. The club should have been informal and vested on friendly relations and mutual trust. The general reaction to this initiative was very favourable. Though the association was not very successful, probably because the members had not so many shared interests, it was typical for Dutch business at this time. Social and family networks were seen as the best base for cooperation and a guarantee for the stability of agreements.[40] On the other hand it was the huge social gap between the cooperative strawboard companies and their private competitors, which made cooperation unthinkable.[41]

.

4. Competition in Dutch business: from trade-associations to mergers

At the end of the 19th century the Dutch economy could be characterized as a small and open economy with politicians that had a strong belief in the policy of free trade. As a result many branches of industry were exposed to industrial developments abroad. Especially foreign investments in scale and scope increased the vulnerability of the Dutch industry. The specific structure of Dutch industry with its strong position of the family firms, the lack of raw materials and the absence of a heavy industry determined the way collusive practices

[39] B. Bouwens, *Alcohol company on the move*, 34-35
[40] K.E. Sluyterman, *Kerende kansen*, 43-44.
[41] B. Bouwens, *Focus op formaat,* 93-95

appeared in order to limit risk and uncertainty for the entrepreneur. According contemporaneous sources (see Introduction) collusion did not seem to be a very common practice. As we have seen in the United States, Great Britain and Germany, this could be primarily caused by the structure of the industry. The Netherlands had hardly any firms that could be considered as heavy industry with a high ratio of fixed costs. Typically, these firms dependent on heavy investments in the extraction of natural deposits and capital-intensive methods of production were susceptible for collusion.[42] Does this mean that there were hardly any trade restricting practices in the Netherlands? One might expect that Dutch businessmen could easily meet and negotiate, because of the relative small distances and proximity of their native competitors.[43] In this section we will look at the existing trade restricting instruments that shaped market structures in most industries. We will see that Dutch businessmen did have an extensive scope of institutions to reduce or eliminate competition.

As we saw, increasing international competition and also modern communication technologies stimulated the use of collusive practices. At the turn of the century the Dutch industry knew very different degrees and forms of collusion. The weakest forms of collusion in industry were as old as the business itself and mainly developed from factors such as personal and social contacts. These kinds of contacts among competitors reduced antagonistic attitudes. One could even argue that social grouping, whether by ethnic origin, social class or even religion, provided powerful cement to unstable collusive practices.[44] This feeling of belonging could be strengthened by the existence of trade associations, conferences or informal social activities. Initially, businessmen organized themselves in local crafts' organizations. Industries that were geographically concentrated were the pioneers. The potters in Gouda, the shoemakers in the Langstraat-region, the textile-industry in Twente or the brick producers around the rivers were among the first to organize. These associations did not necessarily frustrate the competitive ambitions of their members or the independent decision-making, but promoted activities to reduce inefficiencies, advanced better relations with customers and governments and raise the standards of the craft. Frans van Waarden described these kinds of collusion as self-regulation.[45] Many of these associations had the intention to organize a fair competition. One of the primary purposes of the Association of dairy producers was to adopt a standard of quality for their products. The organization enhanced the quality of the industry's product by entering the wholesale trade and developing measurable data to standardize output and sales.[46] Around 1900 these associations made up the majority of employers organizations. Powerful national organized employers associations were exceptional, with the Employers' Association of 1899 as a deviation of the rule. In 1907 this association mentioned several reasons for this situation. The employers preferred regional to national organizations and were reluctant to reduce or sacrifice their independence. Above all, regional associations could take religious or political differences between the various regions into account.[47]

The essential distinction of a trade association and a cartel agreement was that a cartel's objective was to ensure a collusive outcome, whereas trade associations did not

---

[42] See for example the model F.M. Scherer and D. Ross developed. F.M. Scherer and D. Ross, *Industrial market structure and economic performance* (Boston 1990) 285-294
[43] See, for example: K.E. Sluyterman, *Kerende kansen,* 68-73
[44] See for example: D. Arnoldus, *Family, family firm and strategy* 156-159; J.J.J. van Dijck & J.P.M. Groenewegen (eds.), *Changing business systems in Europe; an institutional approach* 21-23
[45] F. van Waarden, 'Regulering en belangenorganisatie van ondernemers' in: F.L. van Holthoon (ed.), *De Nederlandse samenleving sinds 1815; wording en samenhang* (Assen/Maastricht 1985) 231-237
[46] J.C. Dekker, *Zuivelcoöperaties op de zandgronden in Noord-Brabant en Limburg, 1892-1950; overleven door samenwerking en modernisering* (Middelburg 1996) 446-460
[47] J. Bruggeman and A. Camijn, *Ondernemers verbonden; 100 jaar ondernemersorganisaties in Nederland* (Wormer 1999) 78-81

obviously pursue such ambitions. The dividing line between competitive and non-competitive activities was fine and in many cases blurred. The regional associations of employers could be an ideal scaffold to make arrangements on prices, production and sales. It should be noted that success of cartel agreements not only depended on geographic concentration. The number of participants, the social homogeneity, similarity in cost functions and other factors were of importance as well. In the paper industry there was – as we saw in - a marked difference in scale. The market was dominated by Van Gelder &Zn, a 100 percent family owned business which produced nearly half of the total Dutch output, and KNP in Maastricht, which was owned and managed by a group of Dutch and Belgian families. The smaller companies in the paper industry, mostly also family firms, tried to strengthen their position by working together. They were much more influenced by changing market conditions because they usually produced only a limited array of qualities, which made them susceptible for changes in their specific market. In 1904 the smaller companies founded an association to lobby with the government, exchange information about the market of raw materials, tariffs and production capacity elsewhere. The association also tried to organise the producers into agreements on prices or production, but, as Van Gelder and KNP refused to join the union, it was not very effective. Agreements on prices were frequently frustrated because one of the bigger producers could afford to sell its products at a lower price. At the same time an agreement between the strawboard producing companies, which were all situated in the northern province of Groningen, proved very successful. Each year the manufacturers of strawboard together dictated the price of the straw they bought from the farmers. This price cartel was so effective that the farmers decided to found their own cooperative board companies that could compete with the family owned companies. Of course agreements between these cooperative companies and their family owned rivals were out of the question. Nevertheless, the growing market for board as well as a the inexhaustible production of the raw material, for a long time made the coexistence of these firms possible Thus like in the brick industry in the 1860s and 1870s, the lack of strong competition in a period of rising demand did not encourage firms to make agreements or cooperate. Only when profitability was threatened the companies sought for means to maintain the stability of their market. In the paper and board industry, though there were examples of successful agreements, the heterogeneous structure of this sector once again made it difficult to reach longstanding cooperation.[48] While the smaller family firms were ready to cooperate, the big companies tried to monopolise the market by their own.

Geographic concentration of an industry could facilitate a smooth completion of cartel agreements, but at the end market structures determined the way collusion took place. Most firms entered cartel agreements to protect themselves for potential entrants or new products that could threaten the stability of the existing firms. Cartel-agreements were very often 'Kinder der Not' and short-lived. The number of international agreements seems to underline the meaning of this. In his study F.M. Wibaut counted 7 international agreements among the insurance companies, international shipping companies and wholesalers of petroleum and coal. Particularly, the chemical industry that operated on international markets knew almost exclusively international agreements. These alliances did not only occur because of the possible profitability of the agreements. As we know, collusion and firm profitability were often negatively related. The firms entered several arrangements with modern German, Belgian and French competitors after a concrete threat of entry. They paid their price for not losing a substantial market share.[49]

---

[48] B. Bouwens, *Focus op formaat,* 85-95.
[49] F.M. Wibaut, *Trusts en kartellen* 109-110; E. Homburg and H. van Zon, 'Grootschalig produceren: superfosfaat en zwavelzuur' in: J.W. Schot, H.W. Lintsen (eds), *Techniek in Nederland in de twintigste eeuw II: delfstoffen, energie, chemie* (Zutphen 2000) 280-282

Mergers and acquisitions are undoubtedly the most far-reaching instruments to limit competition, achieve monopoly profits or attain other individual merger motivations. At the turn of the century only a few Dutch businessmen expanded externally. While the United States witnessed a real merger wave and German and British industry consolidated, the concentration process in the Netherlands appeared to be incidental rather than structural. Only a few, relative small-scaled mergers could be located. G. van Oord, who produced holm, invested not only in new production fields but also bough several hoop producing firms to secure sales.[50] Most of the transactions that took place at the end of the 19th century and the early 20th century were characterized by vertical integration to obtain raw materials or sales. At this time, mergers and acquisitions were not the instruments reshaping market structures. Big businesses – as initiator of concentration processes or as result of mergers and acquisitions – were scarce.

At the end of the 19th century the Dutch government did not pay any attention to collusive practices. It first became an issue about 1910. In this, the Dutch government was exceptional. Where German politicians stimulated cooperation and American and British governments tried to reduce joint actions of businessmen, the Dutch government kept silent. Around 1900 the Dutch government stated a strong belief in the doctrine of laissez-faire, which gave foreign competitors easy access to the Dutch market and thus reducing the potency of the cartel agreements. Also the general public was uninvolved. Popular magazines of these days spend hardly any words to the known cartel agreements. Probably this was the result of the secrecy and mystery Dutch businessmen created on their joint actions. Only some communist columnists and scientists focused on the effects of restricting trade policies of the firms. Unexpectedly, they promoted collusion. Cartelisation would lead to monopolistic behaviour and stimulate the process of 'Verelendung'. So collusive practices accelerated the desired revolution.[51]

Conclusion

To wind up with, we may conclude that the collusive practices in the Netherlands had a same sequence as we have seen in the United States, Great Britain and Germany. Trade associations facilitated a collective strategy of firms within a specific branch of industry to cease and terminate competition for a while. Cartel agreements often were a result of business meetings in the trade associations. There were however many dissimilarities between the different countries. The Dutch industry, for example, did not witness a merger wave at the turn of the century. The industry in the selected countries knew very distinctive ways of organising economic activities and reducing competition. The structure of the industry – big business versus small-scaled firms – is important in understanding these differences in the firms' performance. Considering the Dutch structure of the industry with its strong position of the family firm and the strong belief in the principle of laissez faire one could expect a development similar to the British case. This was not the situation. Formal and informal rules of the game appeared to be important determinants to explain national differences. Legislation, the role of financial institutions and the place of the firm within the filigree of competitors also settled the way collusive practices were organised. In the Netherlands the absence of an interfering government, the striving after (financial) autonomy of the family firms and lack of a heavy industry in the extraction of natural deposits and capital-intensive

---

[50] J.G. van Oord, *Een gedurfde onderneming; de geschiedenis van Van Oord Groep NV* (Zutphen 2001) 17

[51] W.H. Vliegen, 'Ekonomische feiten' in: *De Nieuwe Tijd* 4 (1899/1900) 654; H. Buiting, *De Nieuwe Tijd; sociaal demokratisch Maandschrift, 1896-1921; Spiegel van socialisme en vroeg communisme in Nederland* (Amsterdam 2003) 80-81

methods of production like petroleum, steel, cement and coal determined the way businessmen cooperated. Flexibility and individuality characterized the collusion and even agreements of a high degree could be based on a very informal understanding.

References

Arnoldus, D. *Family, family firm and strategy; six Dutch family firms in the food industry, 1880-1970* (Amsterdam 2002)
Aulnis de Bourouill, J. d' 'Review of F.M. Wibaut 'Trust en kartellen' in *Economist* (1904) 152-157
Bittlingmayer, G. 'Did anti-trust policy cause the great merger wave?' in: *Journal of Law and Economics* 28 (1985) April
Bouwens, B. *Alcohol company on the move* (Den Haag 1999)
Bouwens, B. 'Merger waves in the Dutch paper and board industry, 1945-1993' *Proceeedings of the 6th EBHA conference* (Helsinki 2002)
Bouwens, B. *Focus op formaat; strategie, schaalvergroting en concentratie in de Nederlandse papier- en kartonindustrie, 1945-1993* (Utrecht 2003)
Bruggeman , J.and A. Camijn, *Ondernemers verbonden; 100 jaar ondernemersorganisaties in Nederland* (Wormer 1999)
Buiting, H. *De Nieuwe Tijd; sociaal demokratisch Maandschrift, 1896-1921; Spiegel van socialisme en vroeg communisme in Nederland* (Amsterdam 2003)
Chandler, A.D. *The visible hand; the Managerial Revolution in American Business* (Cambridge/Mass 1977)
Chandler, A.D. *Scale and scope; the dynamics of industrial capitalism* (Cambridge/Mass. 1990)
Dekker, J.C. *Zuivelcoöperaties op de zandgronden in Noord-Brabant en Limburg, 1892-1950; overleven door samenwerking en modernisering* (Middelburg 1996)
Dijck, J.J.J. van, and J.P.M. Groenewegen (eds) *Changing business systems in Europe; an institutional approach* (Amsterdam 1994)
Everwijn, J.C.A. *Beschrijving van Handel en Nijverheid in Nederland I* (Den Haag 1912)
Feldenkirchen, W. 'Concentration in German industry, 1870-1939' *The concentration process in the entrepreneurial economy since the late 19th century* (Stuttgart 1988)
Hall, P.A. and D. Soskice (eds) *Varieties of Capitalism; the institutional foundations of comperative advantage* (Oxford 2001)
Homburg, E. and H. van Zon, 'Grootschalig produceren: superfosfaat en zwavelzuur' in: J.W. Schot, H.W. Lintsen (eds), *Techniek in Nederland in de twintigste eeuw II: delfstoffen, energie, chemie* (Zutphen 2000)
Jacquemin, A. and M.E. Slade 'Cartels, collusion and horizontal merger' in: R. Schmalensee and R.D. Willig (eds), *Handbook of Industrial organisation* (Cambridge/Mass. 1989)
Janssen, G.B. *Baksteenfabricage in Nederland, 1850-1920* (Zutphen, 1987)
Jervis, F.R. *The economics of mergers* (London 1971)
Jones, G. and M. Rose, 'Family capitalism' in: *Business History* 35 (1993) 4
Jones, O. and O. Mariott, *Anatomy of a merger; a history of GEC, AEI and English Electric* (London 1970)
Jong, H.W. de 'De concentratiebeweging in de Amerikaanse economie' in: *ESB*, 24-02-1988
Jong, H.W. de ' De concentratiebeweging in de Europese economie' in: *ESB* 02-03-1988
Jonge, J.A. de *De industrialisatie in Nederland tussen 1850 en 1914* (Amsterdam, 1968)

Kleinwächter, F. *Die Kartelle; eine Frage der Organisation der Volkswirtschaft* (Innsbruck 1883)
Liefmann, R. *Kartelle, Konzerne und Trusts* (Stuttgart 1927)
Lypczynski, J. and J. Wilson, *Industrial Organisation; an analysis of competitive markets* (Harlow/England 2001)
MacGregor, D.H. *Industrial Combination* (London 1906)
Scherer, F.M. and D. Ross, *Industrial market structure and economic performance* (Boston 1990)
Schröter, H.G. 'Cartelization and decartelization in Europe, 1870-1995; rise and decline of an economic institution' in: *The journal of European Economic History* (1996)
Sluyterman, K.E. *Kerende kansen; het Nederlandse bedrijfsleven in de twintigste eeuw* (Amsterdam 2003)
Stigler, G.J. 'Monopoly and oligopoly by merger' in: *American Economic Review Proceedings* 40 (1950) May
Waarden, F. van 'Regulering en belangenorganisatie van ondernemers' in: F.L. van Holthoon (ed.), *De Nederlandse samenleving sinds 1815; wording en samenhang* (Assen/Maastricht 1985)
Wibaut, F.M. *Trusts en kartellen* (Middelburg 1903)
Whitley, R. *European business systems and markets in their ational contexts* ((London 1992)
Whitley, R. *Capitalisms; the Social Structuring and Change of Business Systems* (Oxford 1999)
Zanden, J.L. van, and A. van Riel, *Nederland 1780-1914; Staat, instituties en economische ontwikkeling* (Amsterdam 2000)