Sharing success: cartels as an answer to the dynamics of business capitalism, 1900-1940

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People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public, or in some contrivance to raise prices.

Adam Smith, *The wealth of nations* 1776

Introduction

The first decades of the twentieth century witnessed a fierce economic growth, but also crises and wars. Entrepreneurs had to face many uncertainties, including financial chaos, closing borders and state interference. Firms had to act within a highly volatile and unpredictable world. One of the most widely spread defensive reactions of businessmen to these uncertainties was the formation of cartels. Informal agreements between local and regional businessmen were of all times. But with the growing national and international competition and the instability of the world economy cartels gained importance as more formal institutional frameworks. Cartels were seen as means to stabilize prices and markets and in that way smoothed away the economic rollercoaster effects of this period.

Cartels had the intention to restrict – and not to end – competition. Though most governments were not so opposed to this form of economic collaboration during the first decades of the twentieth century as nowadays, the cartel agreements of these years had to fulfill various conditions to be successful. Cartels had their limits. There were several structural conditions that facilitated collusion. Structure of the market and industry specific conditions, external macro-economic conditions and internal cartel organisation were among the variables that determined success or failure of a cartel agreement. In this paper we want to trace the characteristics and the functioning of cartels in this period. To what extent were national and international cartels reactions to competition? Can we distinguish the variables that made a cartel successful or a failure?

The first section of this paper deals with the theories on cartels and tries to survey the most important variables of success and failure of this type of collusive behavior. This section explains briefly what factors determine whether a cartel agreement can or cannot exist and succeed. The next sections will link theory to empiric data. Section 2 focuses on the international cartel agreements that were identified and registered by the League of Nations in 1929. Section 3 will highlight two cases in which Dutch firms were involved. The final section will concentrate on the Dutch case and the cartel agreements in a small and open economy.

Cartels and their stability

In the first decades of the 20th century the world backed away from the idea that economic competition necessarily promoted the common good. The principle of *laissez faire* or free trade made way for new ideological frameworks and guiding principles. Among the chief manifestations of this trend was the expansion of cartels. With the outbreak of World War I, when the industrial system of the 19th century was destroyed and financial instability together with uncommon and ambiguous diplomatic and economic relations characterized the world economy, the idea became impetuous. In this very insecure and rapid changing world, businessmen tried to eliminate risks and chose cooperation above competition. Many governments approved and supported this change of concern and interest towards the national economy, introduced new legislation and a wide array of trade distorting policies. In their view, cartels could be affirmative to the international competitiveness of domestic producers and would be an instrument to coordinate modernisation of industries and safeguard employability.[1] W. Wells who wrote an interesting book on this topic, quoted the chairman of Imperial Chemical Industries, Lord H. McGowan, who affirmed: 'Such agreements [cartels] can lead to a more ordered organization of production and can check wasteful and excessive competition. They can help to stabilize prices at a reasonable level…. They can lead to rapid improvements in techniques and reduction in cost, which in turn, with enlightened administration of industry, can provide a basis of lower prices to consumers. They can spread the benefits of inventions from one country to another by exchanging research results….' [2] .

[1] H.G. Schröter, 'Cartelization and decartelization in Europe, 1870-1995; Rise and decline of an economic institution' in: *The journal of European economic History* (25 (1996) 1, 129-153; H. Nussbaum, 'Market organization; international cartels and multinational enterprises' in: A. Teichova, M. Lévy-Leboyer en H. Nusbaum *Multinational enterprise in international perspective* (Cambridge: Cambridge University Press 1986) 131-144; Ch.P. Kindleberger, *The world in depression 1929-1939* ((Berkeley/Los Angeles/London: University of California Press 1986), chapter 13
[2] Lord H. McGowan in a speech before the House of Lords in 1944, quoted in: W. Wells, *Antitrust and the formation of the postwar world* (New York: Columbia University Press 2002) 10

From the mid 1920s and especially after October 1929 cartel agreements were widely accepted. In most countries cartels were not longer surrounded with the strange aroma suggesting some social disease. Even in the United States, where the anti-trust movement was traditionally very strong, the Depression, with its instability of prices, currencies and tariffs, engendered the acceptance of cartelisation as the most effective way to ensure mass production and to maintain technological innovation. The antitrust revisionism triumphed – for a short while - under Roosevelt.[3] During the interwar period cartels played an ever-growing role in domestic and international trade and by 1939 had become a major factor in the world economy. Nussbaum even estimates that international cartels controlled approximately 40 percent of world trade during the 1930s.[4]

Unfortunately, it is impossible to present a consistent set of data of all cartel agreements. Cartels are difficult to uncover. Most countries did not record complete and coherent registers of cartel agreements during the first decades of the twentieth century and businessmen were by nature very secretive on these kinds of agreements. The temporary nature of cartel agreements also complicates the study of this economic phenomenon and especially of success and failure of the agreements. Cartels endure for a period, break down and re-form again. Duration to measure cartel success is therefore difficult. When a cartel breaks down and is established again in a slightly different variety should we speak of a failure or a success? [5] To list or register cartels is also difficult because cartels point towards very diverse forms and objectives. Cartels should not be thought of as a homogeneous form of organisation. They may contain agreements among businessmen about prices, markets, qualities, and trade or sales arrangements.[6] Bargaining procedures and very short lived agreements were mostly not documented. Definitions and connotations differ. There is for example a significant difference between free and compulsory cartels. Hexner and others cites the abolishment of the free cartels in Germany. With the 1933 *Gesetz über Errichtung von Zwangskartellen* (decree on coercion of cartels) the Ministry of Economic Affairs could make the participation of firms in existing and new agreements compulsory. In 1935/1937 about 46

[3] T. Freyer, ‘Comperative and historical perspectives on business risk and antitrust in 20th century America, Japan, Europe and Australia’, discussion paper 12 (December 2003): London School of Economics and Political Science
[4] H. Nussbaum, ‘Market organization; international cartels and multinational enterprises’ 134
[5] G. Stigler, ‘A theory of oligopoly’ in: *Journal of political Economy* 72 (1964) 44-61; M.C. Levenstein and V.Y. Suslow ‘What determines cartel success?’ in: *Journal of Economic Literature* 44 (2006) 1, 43-95
[6] In the mid 1960s the OECD even identifield seven types: price cartel, quota-cartel, allocation cartel, standardisation agreement, costing agreement, rebate (refund-) agreement, specialisation agreement: OECD 1965

percent of total industrial production in Germany was cartelized. But the leadership within such compulsory cartels was directed and controlled by government regulations.[7]

To understand success or failure of cartel agreements it is necessary to discuss some workable definition. Robert Liefmann who saw cartels as associations of independent firms with monopolistic aims put the simplest and most concise definition forward.[8] This definition lead to much discussion, especially about the monopolistic intent of the participating firms. Monopolistic behaviour can be very divers and complex and is not sufficient to understand the cartel concept. Cartels have less control than monopolies, where only one company manipulates supply and ironically. Each member of a cartel has an economic incentive to cheat on this 'monopoly'. As we will see competition survives within cartels, although in a different form. A more detailed and comprehensive definition is necessary. During the first decades after World War II economists tried to formulate a more concise definition of a cartel, in which the temporary nature of a cartel and the voluntary character of the agreement got a place. The plurality of independent entrepreneurs also became an important component, ensuring that cartels are a shared market control, rather than a marketing control exercised by one entrepreneur.[9] In this paper we use the 1951 definition of the Danish-American economist H. Brems, in which all these ingredients are integrated: A cartel is a voluntary, written or oral agreement among financially and personally independent, private, entrepreneurial sellers or buyers fixing or influencing the values of their parameters of action, or allocating territories, products or quotas, for a future period of time.[10]

This definition makes it possible to distinguish several variables to test success or failure of cartel agreements. What makes a cartel agreement successful and what circumstances turn out to be conducive? These questions do have a long history and especially during the 1990s, when governments increased their anti-trust activities, many economists and social scientists paid attention to this phenomenon. Out of this literature we can distinguish several categories of variables that over and over again will grip together. We can distinguish economic, institutional and psychological hypothesis.

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[7] E. Hexner, *International cartels* (Chapel Hill: University of North Carolina Press 1946) 24; W.C. Kessler, 'German cartel regulation under the decree of 1923' in: *The Quarterly Journal of Economics* 50 (1936) 4, 680-693; W. Feldenkirchen, 'Competition policy in Germany' 260-261; Report Dutch Ministry of Economic Affairs 'De Duitsche overheidsbemoeiïng met het kartelswezen' 19-2-1935: National Archives, inv. 2.06.001, 8704

[8] R. Liefmann, *Kartelle, Konzerne und trusts* (Stuttgart: Verlag Ernst Heinrich Moritz[7] 1927)

[9] See for example: E. Hexner, *International cartels* (Chapel Hill: University of North Carolina Press 1946); H.W. de Jong, *Dynamische markttheorie* (Leiden: Stenfert Kroese 1981) 151-153; J. Lipczynski and J. Wilson, *Industrial Organisation; an analysis of competitive markets* (Harlow England: Pearson 2001) 151-153

[10] H. Brems, *Product Equilibrium under Monopolistic Competition* (Boston: Harvard University Press 1951). In this definition joint ventures and other forms of collusion like consortia are excluded.

The most obvious and understandable feature of cartelisation is that it occurs when collusion is seen to be more profitable than competition. With other words, the collusive profit should be greater than the total combined profits of the independent firms. A key factor in forming a cartel is that the combined market share of its members must be large enough to influence the whole market, for example through the price-setting mechanism. The most simple economic models explain that the moment one individual firm can extract greater benefits, it has to follow an independent strategy based on the expectation that other firms will adhere to the contract, or competition will be the rule. Industrial concentration and the number of firms play a decisive role. Already in 1906 McGregor wrote: 'the parties shall be few enough to come to terms readily'.[11] A certain kind of homogeneity seems to be imperative for the stability and success of a cartel. Asymmetry of market shares or the size distribution of firms is a variable that can affect collusion. Asymmetry implies a divergence of views between firms of unequal size. In an industry where the firms are of equal size, the probability of collusion will enhance. On the other hand, firms can also act as a leader and others – smaller firms - will follow. More important seems to be the homogeneity of the product. If a product is subject to change, due to frequent technological improvements, or changes in consumer behaviour, an agreement will be more difficult to sustain. Product differentiation – the consumer goods industries is a good example – can destabilize or undercut existing agreements easily. This variable is however very deceiving and a product could still be supplied under many varied specifications. A product such as a paper bag seems at first sight rather homogeneous. The price list of the Dutch business interest association however recorded a few hundred prices related to variations in thickness, strength, size and the raw material that was used to produce the bags. This made a cartel agreement very complex and finally impossible.[12]

The reasons why firms tend to embrace collusion and the factors that ensure cartel success are very miscellaneous. Not only the structure but also performance of the industry can stimulate or hold up cartelisation. Poor profitability caused by increased competition is one of the most significant factors encouraging firms into cartels. Friedrich Kleinwächter already took notice of this in 1883: 'Kartelle sind Kinder der Not' and Palmer found that

[11] D.H. MacGregor *Industrial combination* (London: Bell 1906) 120
[12] Agreement paper bag producers, februari 1938: National Archives, inv. 2.06.001, number 8726

firms in declining industries are more likely to collude than firms in expanding industries.[13] Infrequency of orders and especially the presence of large infrequent orders can easily put an end to existing price-agreements. When there is a diminutive difference between cost and benefit undercutting will more likely occur and cartels will be dissolved. Scherer and Ross demonstrated this and quoted cases from the electrical equipment industry and antibiotics. A high ratio of fixed costs (for example large overhead of sudden excess capacity) is an important source of stability.[14] One could also argue that cartels are most effective when the demand for the cartel's product is not very price sensitive. This could be the reason why cartels are more effective in the short term. Over the long term, prices often become elastic as consumers find cheaper substitutes for the product. When demand is relatively inelastic at the pre-cartel price increased revenues at lower levels of output are possible. The effect is limited in industries with low barriers to entry. In these types of industries, the threat of potential rivals generally reduces the gains to be had from collusive behaviour. Although new producers may join a cartel, when membership levels increase, this often makes communication, negotiation, and enforcement more difficult.

All these variables put pressure on the stability of the cartel. The structure of the industry and the external pressures (entry barriers, existence of non-cartel firms, role of innovation, changes in demand) are however just one side of the medal. Non-economic, institutional factors should also be considered. The existence of a strong and efficient business interest association could provide the necessary operational mechanism for setting up and maintaining a cartel. Business interest associations were an ideal scaffold to make arrangements on prices, production and sales.[15] It was Stigler who explored these factors that facilitated effective collusion. The core of his argument is that collusion is successful when it is accompanied by an efficient method of policing the agreements. Efficient enforcement is a crucial determinant of successful collusion. The ability of a cartel to provide effective sanctions against cheats can ensure cartel discipline and stability. [16] In this process

[13] Fr. Kleinwächter, *Die Kartelle. Eine Frage der Organisation der Volkswirtschaft* (Innsbruck 1883), quoted in: H.G. Schröter, 'Cartelization and decartelization in Europe, 1870-1995J. Palmer, 'Some economic conditions conducive to collusion' in: *Journal of Economic Issue* 6 (1972) 29-38
[14] F.M. Scherer and D. Ross, *Industrial market structure and economic performance* (Boston: Houghton Mifflin[3] 1990) 285-294, 307
[15] F. van Waarden, 'Regulering en belangenorganisatie van ondernemers' in: F.L. van Holthoon (ed.), *De Nederlandse samenleving sinds 1815; wording en samenhang* (Assen/Maastricht: Van Gorcum 1985) 232-233
[16] G. Stigler, 'A theory of oligopoly'; Stigler's approach focused on secret price-cutting and cheating that deduced changes in market shares. O.E. Williamson also saw collusion as a problem of contracting. The efficiency of an agreement would depend on several factors, like the ability to specify contractual relations correctly, monitoring, penalties, etc. See: O.E. Williamson, *Markets and hierarchies; analyis and antitrust implications* (New York: The Free Press[2] 1976) 240-245

leadership, trust and social background can be important. Though economists do have their problems with these kind of variables, the development of a cartel requires that someone take the lead and organizes the meetings and that the participants can have confidence in one another. Co-operation reduces the complexities of interdependence. Firms no longer need to speculate about likely behaviour or reactions of rivals. Cartel brings about a time-out of competition.

In general, cartels are economically unstable in that there is a great incentive for members to cheat and to sell more than the quotas set by the cartel or sell the products at lower prices. In the absence of legal sanctions, many factors are important to ensure cartel success, ranging from market structure and industry specific conditions to external macro-economic conditions and internal cartel organisation. In the next sections these variables will be taken at a close look.

International cartels

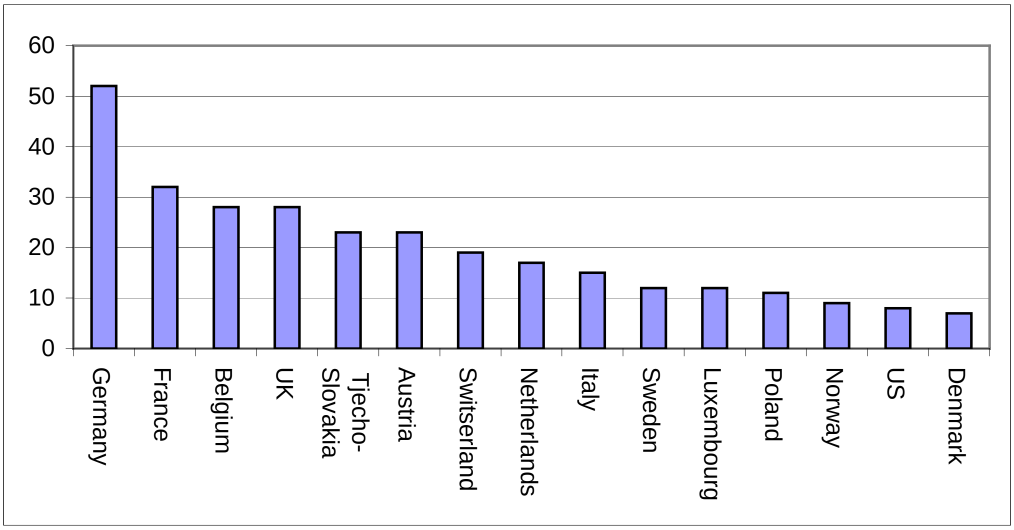
In 1929 the League of Nations constructed a database of 62 international cartel agreements.[17] According to this international organisation a peaceful community of nations was not only a matter of disarmament or settling international disputes through negotiation diplomacy but could also be endorsed by economic cooperation between firms.[18] Apart from internal advantages for the firms, cartels could be an instrument to make an end to the increasing use of protective trade barriers and the process of deflation that became apparent from the mid 1920s. Cartels in which businessmen from different nations worked together would support mutual understanding and promote world peace.[19] Cartels were not a panacea for all economic disorder of the world, but would 'contribute to an improved organisation of economic life'.[20] The database of the League of Nations is not extensive and all-embracing. A tentative list of international cartel agreements prepared by the US Department of Justice in 1939 contained for example 179 of such agreements and a few cross-section studies even counted several

[17] Societé des Nations, Tableau provisoire des entents ind. et com. Internationals, 26 april 1929: National Archive The Hague: inv. 2.06.001, number. 5585
[18] F.P. Walters, *A history of the League of Nations* (Oxford: OUP 1952)
[19] See for example: S.D. Carls, *Louis Loucheur; ingénieur, homme d'etat, modernisatuer de la France* (Villeneuve dÁscq Cedex: Presses Universitaires du Septentrion 2000); Ch. P. Kindleberger, *The world in depression 1929-1939* 197-198
[20] See various news paper articles 1926-1930: National Archives The Hague, inv. 2.06.001, number 5885

hundreds of agreements.[21] The register of the League of Nations is however useful to test some variables as mentioned above.

International cartels were a world wide phenomenon. The database contains firms from 31 countries. The greater part of the firms had a European origin, but also American, Japanese and Latin-American firms were involved (see graph 1). The German industry was the absolute number one. In almost 85 percent of all agreements a German firm was involved.

Graph 1: International Cartel Agreements (n=62), participation per country, 1929

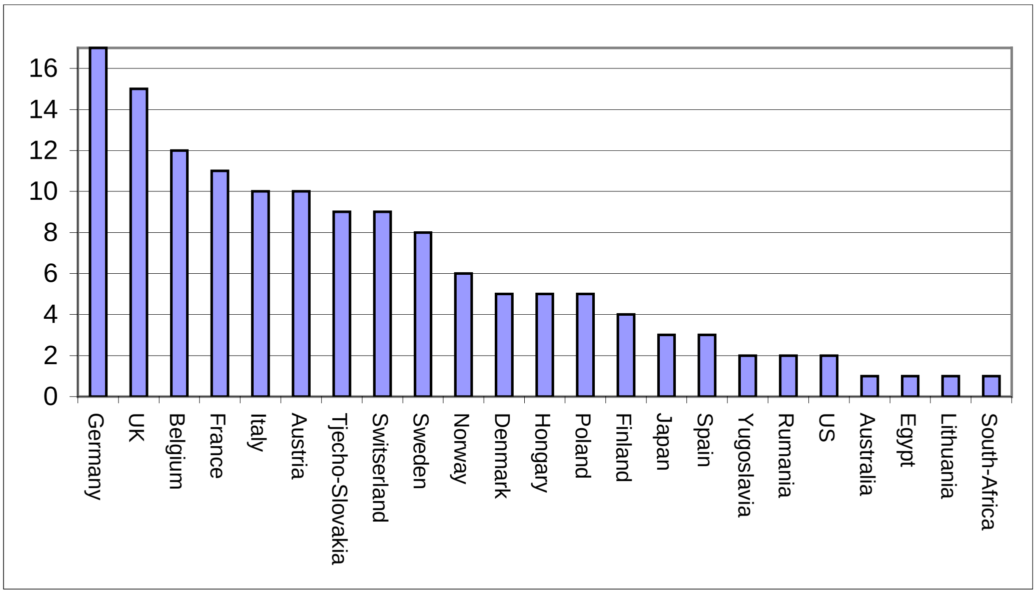


Effective cartels did not develop in every industry. Most agreements that were registered by the League of Nations were related to raw material and resource-based industries like oil, magnesium, nickel, white-lead, superphosphat, salt, uranium, rubber, zinc or mercury. The database contains also some industrial products like newspaper, bottles, tires and steel. Products from consumer goods industries are missing. It might be that some of these industries contained too many producers to organize. Consumer goods industries preferred to defend themselves against the vagaries of the market by using advertising and other promotional techniques to build up brand loyalty among consumers.[22] Industries with high barriers to entry, homogeneous products and characterised by inelastic price developments are the core of the database. Firms with a monopolistic or near-monopolistic position formed most of the agreements. For example, inaccessible resources, difficult extraction processes

[21] C.D. Edwards, 'International cartels as obstacles to international trade' in: *The American Economic Review* 34 (1944) 1, 330-339; R. Posner constructed a database of 989 observation for the period 1890-1969. R. Posner, 'A statistical study of antitrust enforcement' in: *Journal of Law and Economics* 13 (1970) 2, 365-419
[22] W. Wells, *Antitrust and the formation of the postwar world*

and the need for vertical integration characterized the nickel industry. In the early 1930s almost 90 percent of the world nickel originated from two major deposits.[23] The monopolistic or near-monopolistic position of the cartel members was in most cases regionally bound. Markets were not always global and firms from bordering countries often operated at the same regional markets. Negotiations were less complicated and implementation and enforcement relatively easy. In 1929 Europe counted for example four regionally organised cartel agreements on cement. Austrian and Czech producers of lignin – an important material source for paper and chemical industry – organised themselves in a cartel, without interference of their Scandinavian competitors. The potash cartel consisted only out of German and French producers. On average the cartels had participants out of six different countries. Only a small number of agreements had more than 10 nationalities. Among these was the well-known Phoebus cartel for electric lamps that represented the interests of firms from 15 countries from 1924 onward. It was one of the few global cartels with participants from of Europe, Japan, and – indirectly through subsidiaries – the United States. This agreement reserved for each producer its home market and set quotas for exports enforced by a system of fines levied on those who oversold their quota. Dutch firms participated in 17 agreements. Graph 2 illustrates the regional concentration.

Graph 2: Partners of Dutch firms in international cartel agreements (n=17), 1929



[23] See: P.Th. Sandvik, 'Confronting market power, protectionism and autarchy: small players in the nickel industry, 1925-1939' (Norwegian University of Science and Technology Trondheim; working paper Danone II, april 2006

All these agreements tended to keep out or keep under control potential entrants and new products that could threaten the stability of existing firms. Price-fixing was not the only reason for collusion. As we saw above, cartels reflect many forms and objectives and the database of the League of Nations underlines this observation. Many agreements had various purposes. The whole spectrum of reasons why firms collude is at hand. Price cartels (50 percent) and allocation cartels (also 50 percent) were most common. 75 percent of all agreements were price and/or allocation cartels. Agreements on production quota (10 percent), standard and quality (25 percent) and exchange of information (15 percent) were also common. As said, the cartel agreements that were registered by the League of Nations consisted on average out of firms from six different nations. Agreements that dealt with exchange of information and diminution of production facilities could count on more participants. The average number of participants of a production cartel was about 10. Probably the necessity to rationalise the production process forced many firms to participate. The 'Kinder der Not' argument seems to be more persuasive.

The database of the League of Nations doesn't give us clear information about the success or failure of the various cartel agreements. As mentioned above, it is not easy to circumscribe success. The database makes it impossible to link the activities to profitability, but we know that after breaking up an agreement prices can also boost in a competitive world. The duration of a cartel agreement could be another indication of success or failure. The cartel agreements that were registered by the League of Nations had an average time-span of 3,8 years. A correlation between the average time span of the cartel and the number of participants, or between the average time span and the character of the agreement could not be revealed. These kind of observations should however be considered very carefully. Suslow and Levenstein, who tried to find a suitable methodological approach for these kind of questions, already had to admit that the interpretation of duration is complicated. Again, the question why cartels appear and disappear doesn't say anything about the achievements of the collusive partners. When a cartel breaks down and reforms again after some time, can we speak of one cartel or two different cartels, success or failure?[24] To understand more about success and failure of a cartel agreement it is essential to look more in-dept at a few cases.

Two international examples

[24] For discussion, see: M.C. Levenstein and V.Y. Suslow 'What determines cartel success?' in: *Journal of Economic Literature* 44 (2006) 1, 43-95

One of the most famous examples of a international cartel in the interwar period is the agreement the big oil companies concluded in the fall of 1928. When the oil production boomed with the exploitation of numerous new fields and demand did not match the growing production, the market threatened to be flooded. The oil companies realised that they had to stabilize prices and production if they did not want to loose their profitability and see their markets spoiled. In the summer of 1928 the American companies already decided to limit their production. This was followed by the initiative of the chairman of the Royal Dutch/Shell Group to organise a meeting with the captains of the three biggest oil companies Standard Oil, Anglo-Persian and Gulf. The 'big four' met in the Scottish castle of Achnacarry, officially for a hunting party, but in fact to discuss an agreement to end their competition and stabilize markets and prices. Their discussions resulted in an agreement which became known as the 'Achnacarry Agreement'or more popularly 'As-Is'. The last term indicated exactly the main purpose of this typical cartel agreement: to maintain the existing market shares and prices 'as is'. Furthermore they decided the prices would be based on the US Gulf coast price plus freight rate from there to the market, even when the oil was actually produced closer to the market. The oil companies also agreed to share facilities in order to cut costs and investments and concluded to share the supply of markets from the nearest available source so to economise on transport. All these measures were presented as to be in 'the best interest of the public' though it was clear that it would be the oil industry that profited most from this agreement. Achnacarry soon lost most of its power when outside companies like Texaco undercut the prices. Nevertheless 'As-Is' continued to be the base for close understanding between the big four companies and in that respect gave certain stability to the markets that where dominated by them.[25] The Achnacarry agreement, though not as successful as it was meant to be, was typical for the kind of cartel agreements of these days. A limited number of big companies with semi-monopolistic position endeavoured to dictate prices and stabilize their dominant position. This was possible also because two powerful companies with chairmen that could get along very well, took the lead. Another example was the fertilizer cartel that was more successful, at least for the time it was operating.

The market for fertilizers traditionally was strongly cartelised. Nitrogen, the crude material for most fertilizers, was a rather homogenous product that could be traded all over the world. Because farmers were dependent on this product, the rather small number of producers with again semi-monopolistic positions, could easily agree to fix prices and

[25] S. Howarth, A century in oil (London 1997) 152-155.

production. At the end of the twenties the German firm IG Farben took the initiative to organise a cartel when prices eroded because of overproduction. Together with British and Norwegian producers the Germans formed the so-called DEN-group that tried to conclude a worldwide cartel for fertilizers. After two conferences in Paris and the Belgian seaport Oostende a treaty was agreed upon in august 1930. This *Convention Internationale de l'Azoute* stipulated that national producers in principle should cover the national demand for fertilisers. Production quota were divided, but it could not be prevented that heavy production cuts were necessary. Some companies even had to lay off 60 percent of their capacity. These cuts were financed by a mutual fund that was created by the participating firms at the ratio of their production. The two Dutch companies which were founded at the end of the twenties were lucky enough to get quota that even exceeded their capacity. It is rather striking that one of the companies participating in the cartel, the Dutch State mines, was a fully state-owned company. Though there were questions on the participation of a state-owned company in a cartel, this indicates that cartels were certainly not seen as an illegal practice.[26]

The international convention of the Nitrogen-cartel was concluded for only one season and despite its drastic measures it did not succeed in stabilising prices. Demand kept falling because of the crisis and the market was flooded by outside producers from America and Japan. In 1931 the producers failed to reach a new agreement on prices and production and a price war became inevitable. Prices more than halved within a year and especially on the Dutch market, which was not protected by tariff walls or quota, producers were hit hard. The general downfall in prices stimulated new deliberations between the producers. The DEN-group, led by IG-Farben, succeeded in bringing the European companies together again to settle an agreement on a fixed price. Though the price level was very low, the agreement ended the war and it opened the way to a new international treaty that was concluded in the summer of 1932. This cartel agreement covered the period till 1935 and was then renewed again for a period of three years. This cartel reinforced the principle of home markets for home producers. It was specified in numerous separate treaties between the DEN-group and national producers. With the Dutch producers for example the DEN-group made an agreement in which a fixed part of the market was reserved for Dutch producers, but at the same time the German Stikstoffsyndikatt got the right to sell fertilisers on the Dutch market above this quota. So the international cartel on the one hand helped producers to stabilise prices on their

[26] E. Homburg, Groeien door Kunstmest. DSM Agro, 1929-2004. (Hilversum, 2004), 66-69; J. De Vries, Hoogovens IJmuiden (Wormerveer, 1968), 321-325.

home market, but at the same time it was instrumental for big companies to safeguard their market share in foreign countries.

After 1935 for the Netherlands this changed. The Dutch government decided to help the home producers by cutting imports to half of the 1933 level, which in fact meant that foreign competitors were driven from the Dutch market. This gave the Dutch producers a very strong position. They founded a central sales office that regulated all sales in the Netherlands and which had in fact a complete monopoly. The sales office however worked closely together with IG Farben which operated as an affiliated partner. The international cartel agreements were prolonged again in 1938 and functioned until the outbreak of WWII. After the market recovered from the heavy depression in the first half of the thirties these agreements must have been very profitable. The Dutch producers, who cooperated very closely and were very successful in promoting the use of fertilisers, were very satisfied with the agreements. In 1939 one of the directors of the State mines remarked the company was reluctant to publish too much data. Though the prices for fertilisers were not too high in his opinion, publication of the profits made on fertilisers might, he feared, induce the consumers to demand for lower prices.[27] The case of the fertiliser's cartel shows that close cooperation between a limited number of producers could indeed stabilise markets and prices. For the Dutch companies this proved to be very profitable, while it at the same time protected their market. For IG Farben and probably also other big producers it gave the opportunity to safeguard part of their market share. That this cartel was very successful and powerful is also demonstrated by the fact that the industry stuck to the principle 'home markets for home producers' till well into the fifties even when the cartel as such did not function anymore.

The Dutch case

There is a lot of speculation and uncertainty on the existence of cartels in the Netherlands before World War I.. In general their existence was ignored and the public as well as politicians thought them unproductive and vulnerable. Because the Dutch market was so open to competition from abroad, the common opinion was that cartels could not function in the Netherlands. This proved to be only half of the story. In fact cartels were a well known and in some cases very successful instrument in Dutch industry. There is no complete and coherent

[27] Homburg, 76-79. See also H. Schröter, 'Privatwirtschaftliche Marktregulierung und staatliche Interessenpolitik. Das Internationale Stikstoffkartell 1929-1939, in: H.G. Schröter und C.A. Wurm ed. Politik, Wirtschaft und Internationale Beziehungen. Studien zu ihrem Verhältnis in der Zeit zwischen den Weltkriegen (Mainz, 1991), 117-137.

register of cartel agreements and businessmen were by nature very secretive on these agreements. Nevertheless it is clear that a number of powerful and well-organised cartels existed. In 1903 the Dutch socialist F.M. Wibaut published a book on trusts and cartels. According to Wibaut collusive practices in the Netherlands differed slightly from the situation abroad. But whereas in other countries cartels were a widespread phenomenon and acknowledged practice, there was a strong scent of mystery on this topic in the Netherlands. Wibaut however traced fifteen national cartels in essential product like salt, bottles, glue and beet sugar and he claimed the participation of Dutch companies in at least seven international agreements between insurance companies, shipping companies and in the wholesale trading of petroleum and coal.[28] As Wibaut rightly stated, several branches were completely dominated by cartel agreements and some of the more important Dutch industries participated in international cartels well before WWI.

The Dutch producers of salt for example, organised themselves into a very strong cartel around the turn of the century. Some fifty small, traditional producers made an agreement on prices and conditions and divided the market amongst them in the so called *Zoutconventie* (Salt convention). In this way the producers who were completely dependent on the import of raw materials from abroad, hoped to protect their position and ward off fierce German competition. This convention proved to be successful and was long standing because the participants were a rather homogeneous group and made a rather simple and uniform product. The salt producers for a long time even succeeded in frustrating plans to explore the possibilities of the extraction of salt from the Dutch soil because they rightly feared their monopoly on the imports of raw salt would be broken up. It was only during WWI that these plans were finally realised and a national salt industry was founded. This national industry in fact was at first successfully integrated in the cartel. The Dutch salt producers effectively used the cartel to protect and divide their market, while they were in fact completely dependent on raw materials from abroad. This cartel functioned as a defensive mechanism against foreign competition. In the long run however the small producers could not possibly maintain their position because they were completely dependent on imported raw salt or had to buy it from the only Dutch producer. One by one the small companies disappeared, but the cartel now led by the national salt industry, would survive into the Second World War.[29]

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[28] F.M. Wibaut, *Trusts en kartellen* (Middelburg, 1903)

[29] R. Roordink, `De Koninklijke Nederlandse Zoutindustrie: Zout uit de bodem van Twente. De geschiedenis van de KNZ, 1918-1940', in: *Overijsselse Historische Bijdragen* vol. 108 (1993), 96-128; F.V. van der Most, J.W. Schot en B. Gales, `Zout', in: J.W. Schot e.a. (red.) *Techniek in Nederland in de twintigste eeuw. Deel II Delfstoffen, Energie, Chemie* (Zutphen, 2000), 90-101; Sluyterman, 104-106.

Another example of cartelisation was the Dutch glass industry. Here cartelisation was dictated by changing technology. When the American Michael Owens invented a machine to produce bottles at a very high speed and low cost, this proved to be a complete revolution in this traditional and very labour-intensive industry. The traditional production of bottles by hand would be wiped out in several decades. To resist the threatening American competition European producers under German guidance in 1907 formed the *Europaischer Verband der Flasschenfabriken.* This international production-cartel bought the exclusive patent on the Owens machine for the European market and divided the right to buy these machines and produce bottles under the participants. The 45 Dutch producers had formed a national cartel that was represented in the *Verband*, but only a couple of the bigger companies could afford to buy a machine. This brought about a process of mergers and acquisitions because the machines could be profitable only when they produced large quantities of bottles of the same type and colour. Thus in this case cartelisation was used as an instrument to neutralise the effects of competition based on technological innovation. The result even so was a ruthless shake-out and a process of concentration.

These cartels were both set up to protect existing interests which were threatened either by cheap imports of raw materials or industrially manufactured bottles. The participants were all relatively small producers and although their size varied to some extent, their production processes were traditional and became outdated. In both cases the cartels regulated the market for a rather uniform and simple product, salt and bottles. These products to a certain extent were primary products which were not very price sensitive and could not easily be substituted. These facts all contributed to the relative success of these cartels. For a certain period the companies were able to protect their market and some profited from this *time out* and used it to modernise the production process. In the long run however these cartels were not able to permanently ward off competition and modernisation and could no longer protect the interests of the participants.

In the Netherlands the importance of these cartels was definitely underestimated in those days. The government was interfering intensely with what was seen as “unfair competition”, and regulated the weight, packaging and quality of all sorts of products. In the years before WWI however a discussion was started on the effects of cartels on the market and especially on prices. The supporters of the idea underlined the positive effects of these mutual understandings for the economy in general. The secretary of the Union of Roman Catholic Employers Kortenhorst in 1917 even defended the idea of protection of the industry by cartels that were approved and guarded by the government.[30] People in favour of cartels argued that they stimulated standardisation and rationalisation of products, which would result in more efficient production and in the end lower prices. Their opponents however argued that cartels were set up by the producers to protect markets, consolidate prices and maximize margins to the consumer's detriment. The development of prices in some cases clearly indicated that they were manipulated by cartel agreements. Because there was no unity on the effect of cartels, it was easy for the government to refrain from measures.[31] In line with its traditional *laissez faire* policy it did not interfere with cartels or any other sort of agreement between producers or merchants. This attitude changed gradually changed during the Great Depression of the thirties.

In the traditionally very open Dutch economy protection through tariffs and quota systems were little by little introduced in the thirties. These measures were necessary to prevent the erosion of the balance of payments and the destruction of employment. The fact that the Dutch government did not realign Dutch prices with international price levels through currency depreciation made the use of these instruments even more compulsory.[32] Trade controls were meant to keep the domestic markets for Dutch producers and were no instrument to position the Dutch industry in the world economy. To reinforce the position of the Dutch economy in the world the politicians relied on the so-called adjustment policy, in which reduction of production costs and the costs of sustaining life were basic principles. The effects of tariffs and quota would however be lost – as Griffths and Brusse stated –if murderous foreign competition were simply replaced by murderous domestic competition.[33] The argument that cartels maintained profits, production facilities and employment and therefore helped to stop the wave of collapses that characterized these years became vigorous and went hand in hand with the other trade distorting policies. Cartels it was hoped, could stabilise both production and profits.

Dutch politicians began to make serious study of the cartel-laws in other countries. Among others, they paid attention to the *Enabling Act* in Great-Britain, the *Gesetz über Errichtung von Zwangskartellen* in Germany, and the law *pixant les conditions dans lesquelles des accords professionals preuvent etre render obligatoires en période de crise* in

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[30] L.G. Kortenhorst, *Praeadvies over ondernemersvereenigingen (kartels, trusts, syndikaten, conventies)* (Leiden: Futura 1917) 101-112

[31] National Archives inv. 2.06.001, nr. 5885, State Committee to the Ministry of Internal Affairs, spring 1921.

[32] See for example: G.M. Nederhorst 'De Nederlandse contingenteringspolitiek' in: *De Socialistische Gids* (1937); National Archives, inv. 2.06.001, 8496; J.L. van Zanden, *Een klein land in de 20^{e} eeuw; economische geschiedenis van Nederland 1914-1995* (Utrecht: Het Spectrum 1997) 151-156

[33] W.A. Brusse and R. Griffiths 'Paradise lost or Paradise regained? Cartel policy and cartel legislation in the Netherlands' in: S. Martin (ed.) *Competition policies in Europe* (Amsterdam: Elsevier 1998) 15-17

France.[34] Finally the government proposed a bill to regulate cartels and to endorse co-operation to cease unfair and unhealthy competition that put consumers at a disadvantage. The bill that became law (Business Agreements Act) in the autumn of 1935 regulated the endorsement of cartel-agreements.[35] The government had the powers – if necessary - to coerce membership upon uncooperative firms and thus incorporate free riders. So, the agreement could be prohibited or enforced for a specific branch of industry. The law had a lot of similarities with legislation in other European countries. One of the major differences was however that the industry itself had to take the initiative to reach an agreement. Business interest organisations played a key role in this process.[36]

The law of 1935 seemed a sensible and practical tool to reduce competition in a period of economic depression and deadly competition. When it came to decision-making however it proved difficult to make an agreement that would be fair to all parties and at the same time be economically rational. One of the first cases under the new act the Economic Council of the ministry of Economic Affairs had to decide upon was the Dutch brick industry. This was an important branch, not only because bricks were vital for housing and public building, but also because it was a very labour intensive industry. This was of major importance in times of high unemployment. It was clear however that the production capacity of this industry was far too high. After World War I it had expanded because a lot of houses, churches and schools were build on the tide of the economic upswing of the twenties. Apart from that, modern techniques had improved and augmented production, though old-fashioned brick production by hand continued side to side with modern and efficient facilities. At the same time the industry was clearly threatened by dumping practices from neighbouring Belgian producers and by cheap substitutes for specific bricks. To make things even more complicated the branch produced a wide variety of bricks for different purposes.

A reorganisation of the industry by closing down a number of companies was unacceptable because it would cause high redundancy. Cooperation between producers and reduction of production levels by mutual agreement was even less realistic. The brick companies were mostly family firms and their owners were known to be very individualistic and stubborn, and they would surely cling to their independency. Their association advocated a general agreement on prices that would be just above cost price. This would at least

[34] Report 'Verbindendverklaren van ondernemersovereenkomsten in verschillende landen' 4-10-1935: National Archives, inv. 2.06.001, 8704
[35] Officially the law was called Wet op de Algemeen verbindend en onrverbindend verklaren van ondernemersovereenkomsten.
[36] Report Business Agreement Shoe-industry, 1939: National Archives, inv. 2.06.001, 8530

guarantee the viability of the branch for the time being. But because the association represented only 60 percent of the industry and foreign competitors would not have to comply, it could by no means enforce such an agreement. The only option therefore was government interference. The minister of Economic Affairs in 1936 installed a committee that had the power to specify fixed prices for all kinds of bricks. Though these measures certainly were of vital importance to the brick industry, shortly after several companies requested in vane for exemption.[37] Even in times of sharp economic depression in an industry that was so varied in its products and production facilities, it proved impossible to make agreements that would be beneficial to all participants. In such a setting a cartel could only function when enforced by government.

But the government did not interfere freely and claims or requests were often also rejected. A vainly request was made by the Dutch automobile trade and industry, represented by he RAI. This organisation together with the association of garages Bovag already in 1934 complained on clandestine imports by non-official dealers that sold new cars far under the listed prices. This was stimulated by the collapse of prices as a result of the crisis and the devaluation of the dollar. Official dealers had large stocks of cars that were bought at high prices, while the industry did not really bother to sell cars at bottom prices to outsiders. These outside “pirate” dealers spoiled the market and sponged on the marketing and service of the official competitors. In 1934 the government had rejected the request to forbid the “pirate”-imports because it had no legal means to do so. The RAI and Bovag then together with General Motors and Ford concluded agreements on prices of old and new cars and on discounts. A central organisation had to direct these rules and enforce them if necessary. This ingenious cartel-like agreement and complex organisation was however of no use if the “pirate” imports could not be stopped. For that reason in 1938 the RAI again asked the ministry of Economic Affairs to ban these imports by using the Business Agreements Act. Though the minister now clearly had the power to do so by fixing prices, he again refused. He advocated the RAI to reduce the prices of second hand cars, because it had came out that the branch deliberately kept prices high to offer better prices in part exchange for old cars.[38] In this case the ministry refused to use the law to enforce price arrangements that had been made by the branch and that obviously did not benefit the common interest. Nevertheless the government did not interfere with the existing cartels, but tolerated them and in this case even

[37] National archives, inv. 2.06.001, nr. 8686, Minutes of the Economic Council, 27 March, 4 April and 29 August 1936.

[38] National archives, inv. 2.06.001, nr.3765, Application of the law on several branches, automobile industry.

did suggestions to optimise them. In this climate cartels could easily flourish, but they were 'Kinder der Not' and for that reason not very successful. In a situation of fierce competition on the home market and the constant threat of dumping from foreign producers, these cartels as we saw, functioned with difficulty. They failed to give their participants the protection and profitability they were so eagerly looking for.

The daily practice of the Business Agreement Act law seems to underline the somewhat dual position of this new instrument of intervention. The government expected voluntariness and had only marginal legal appliances to end a situation of unfair competition. The applicant companies on the other hand, expected fierce measures to regulate competition. The time-consuming bureaucratic process illustrates also a certain lack of adroitness of the government. In short, the Act was not an overwhelming success. It did not really stimulate the cooperation between companies to reach cartel-agreements and their number was so small that it is hard to maintain that the longevity of agreements and the profitability was improved by government interference. An important reason for the meagre achievement of the Act is the fact that branches of industries were unaccustomed to this kind of cooperation with state intervention and they certainly mistrusted the new Act. They instead preferred to rely on their traditional ways of cooperation and colluding. They continued to make their own cartel-agreements that were in most cases invisible for public and politicians. A second reason is the paralysed status of the Act. The limited possibilities to enforce the agreements and to have influence on these matters of business that really mattered as prices, quotas and the reduction of production units, deteriorated the good intentions of the state. In 1939, when the termination of the Act was discussed, only seven agreements had a declaration of 'generally binding'.[39]

Conclusion

During the first decades of the twentieth century cartels became a widespread phenomenon in economic life. National and international agreements among businessmen were at the order of the day. Cartels in general face two kinds of problems, internal and external. The distribution of the gains of participants – the sharing problem - was one of the most striking internal problems of collusive behaviour, while the prediction of outsiders' strategy was an unremitting threat to the stability of the cooperation. As we saw in the oil and fertilizer cartel

[39] Commission to Minister of Economic Affairs, 31-10-1939: National Archives, inv. 2.06.001, 3762

price arrangements could be easily undercut by outsiders. The theory of cartels identifies a number of structural conditions that facilitate collusion. Product homogeneity proved to be an important condition because it requires a less complex price structure. A limited number of producers and a certain regional concentration also contributed to the success of a cartel. The database of the League of Nations made clear that the occurrence of participants with similar cost functions was among the most important determinants that made a market conducive to collusion. Also the demand in-elasticity of the product involved could make the difference between success and failure of a cartel. Governments that were receptive for these collusive activities and took away the negative scent of these kinds of agreements among businessmen could play a role. Success depended in the first place on the structural variables of the industry and the self regulated institutional setting – for example the existence of business interest associations – rather than on the support of the government. The Business Agreement Act showed how the Dutch government facilitated cooperation, but at the same time failed to give support to processes that were most relevant. The Dutch cases made clear that success and failure of cartel agreements are hard to define. The line between profitability or stability and unsteadiness and competition is thin. Cartel-instability can lead to success in the long run, while the stability of an agreement also might reduce the profitability of the individual firm.

Cartels were in general created to reduce the uncertainties of business whether these were caused by changing market conditions, technological innovation or mounting competition. The rise of cartels before WWI and in the twenties can be seen as a reaction to the globalisation that exposed countries to new threats. At the same time this created new opportunities for organising the business in a more profitable way. In these years international cartels dominated the scene. The Great Depression drove firms and industries together in search for defence against increasing competition. Companies huddled together behind tariff walls and import restrictions by which governments tried to protect national industries. In these years national cartel agreements became widely spread and were sometimes even legally endorsed