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The automobile industry towards the European integration process – from the "belle époque" to the Maastricht Treaty.

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Abstract

This Master thesis in European Studies, Economic branch, aims to investigate the economic history of the European automobile industry in the context of the European integration process, in order to understand the interaction and influences between these two subjects. The purpose of the thesis would be to highlight the main problems regarding the automobile industry and the European integration process, through a deep study of the political, economic and social background from the "belle-époque" period to the Maastricht Treaty, in order to create a clear picture regarding the state of the art of the European automobile industry in the 1990s.

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"Só sei que nada sei por completo,
Só sei que nada há que só eu saiba,
Só sei que nada sei que não possa vir a saber."
Mário Sérgio Cortella acerca do pensamento Socrático

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To conclude, it is necessary to state that none of the above can be held responsible for mistakes, errors or at other failings of this work, for which I fully accept responsibility.

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Introduction

This Master thesis in European Studies, Economic branch, aims to investigate the economic history of the European automobile industry in the context of the European integration process, in order to understand the interaction and influences between these two subjects. The purpose of the thesis would be to highlight the main problems regarding the automobile industry and the European integration process, through a deep study of the political, economic and social background from the "belle-époque" period[1] to the Maastricht Treaty, in order to create a clear picture regarding the state of the art of the European automobile industry in the 1990s. Choosing the "belle-époque" period as starting point is justified by the fact that it was in this period that the automobile industry gained a significant importance in the social and economic context, and also a rising weight in the political field as a mass producer of military machinery[2]. Throughout the 20th century the European automobile industry expanded and increased its importance within the European economy, and played progressively an important role in the world economy too. Ending the investigation with the Maastricht Treaty can be justified by the new paradigm of Europe[3] brought by the 1990s political and economic changes[4] that altered the shape of the world, together with other contemporary industrial developments, and opting to investigate them would exceed the purpose of the work. Moreover, the consequences of the 1990s episodes haven't yet the necessary historical distance[5] to be analyzed in the same conditions as the other periods under the research.

The reason of writing the thesis in English is related with two concerns. The first one is that almost all European data, information and economic analysis regarding the automobile industry are in English, and translating them could slightly change their understanding, leading possibly to erroneous conclusions[6]. Secondly, I personally believe that the thesis would add more value to my future overseas if written in English, and possibly serving as a credible study allowing other European students to continue the investigation.

[1] According to the definition of "Belle-époque" of Valério, Nuno e Bela Nunes, Ana (2004)
[2] Rosseau, Jaques (1958)
[3] Blaha, Jaroslav (2005)
[4] The main events were: in 1989 the end of the Cold War; in 1990 the union of the two Germanys and the free flow of capitals within the European Community; in 1991 the dissolution of the URSS and the end of the Warsaw Treaty; and in 1993 the European Union with the implementation of the Maastricht Treaty.
[5] Following the concept of "historical distance" supported by Pimentel, Antonio Filipe (1992) .
[6] Goldenberg, Phyllis (2004)

Chapter I – Subject, Methodology and Definitions

1. Subject - The Automobile Industry in Europe

In global terms and within the European region, the automobile industry can be seen as an oligopoly[7]. The ten largest automobile companies account for almost 80% of the world cars production. In the major markets of North America, Japan and Europe demand has matured and the industry has become a high cost/low margin business. The sector suffered from significant over-capacity even though the barriers to market entry in the sector were high. This was due to the international growth strategy of producers from developing regions and the efforts made by the producers in established regions to improve their productive efficiency. This environment has led to an extensive range of joint-ventures and take-overs between the leading automobile companies, as they were seeking to balance large-scale production with product diversity. These market conditions have created testing times for many automobile companies in the 1990s and complex problems for policy-makers.

The industry remains of fundamental economic importance to national and regional economies. The economic significance of the automobile industry relies on the fact that it is such a large and multifarious sector. A variety of sub-groups can be found within the automobile sector, such as full-line vehicle assemblers, large-scale components producers, sub-assemblers, multi-product companies, direct suppliers, equipment suppliers to assemblers, large suppliers of materials, intermediate items specialists, retailers, car dealers, repair shops, and so on. The focus of this thesis will be on major automobile assemblers, because of their pivotal position within the automobile industry and also because they provide the end market for many other sectors.

Throughout its history, the automobile sector reached an immense importance in Europe. Thus, nowadays the interests of the industry and its product are heavily regulated and the policy process extends well beyond manufacturing. Areas such as transport infrastructure, transport regulation, safety and environment are some of the examples of the policy-relevant aspects of the automobile industry interests for national and international policies. As Harden stated, the principles of the European Union constitution involved a transformation of the relationship between the public sector and

[7] McLaughlin, A. and Maloney, W. (1999)

the economy that has typified the twentieth century state[8]. Accordingly, this thesis aims to analyze European-industry relations (in the automobile sector) firstly through the history of the automobile industry in Europe, and secondly through the European history in the automobile industry. This approach is in line with the ordo-liberalist point of view, where as the economic environment constrains political decisions, so should the political environment constrain economic decisions[9].

The automobile industry is a good example of an industrial sector in which national policy instruments have been slowly replaced by regional political and economic integration. It will be examined how policy-makers have managed their relations with the industry, and how the industry organized itself to participate in the policy-making process. By examining historical events at national levels, and then at the regional level in Europe, the thesis aims to identify the structures that have evolved and the relationship between these structures and the policy outcomes. The point is not to explain deeply the system's political development in Europe, but to analyze its ability to arrive at collective decisions in specific cases such as the automobile industry[10].

Accounting for policy outcomes requires an analysis of the relationship between public authorities and the industry. To this goal, the recent literature on European Union (EU) policy-making has focused on developing and refining theoretical tools and models which can cope with the multi-level governance of EU.

2. The historical study

To describe the relationship between the political (European institutions) and the economic (automobile sector) in Europe, the historical dimension is of upmost importance in order to understand its economic problems and the political solutions to those problems[11]. Thus, to analyze the European integration impact in the automobile sector, first it is necessary to understand the automobile history until the beginning of the European Union. To do so, the historical study was based in two complementary approaches: the classical and the sectoral approach. It remains an open question whether

[8] Harden (1994) p610.
[9] Gerber (1988) p44.; Although we are still far away from a closed definition of European economic environment as stated Poiares Maduro, Miguel (1997), p65.
[10] Dominik, Lasok et al. (1981), p562.
[11] Lopes, Ernâni R. (1981), p7.

governmental industry relationships may vary more significantly or consistently between sectors than between nations[12].

2.1 The historical study - the Classical approach

The classical approach seeks to identify durable national policy-making traditions amongst political elites[13] which are then reflected in policies developed within national political systems. The essence of the classical approach is that *politics determines policy*[14]. Accordingly the macro-political influences are important in shaping specific industry policies.

This study aims to explore the historical evolution of domestic political structures, and to understand their impact on economic and industrial policy. Thus, the classical approach is a way to understand national political systems when interfering in the development of industrial policies and the government-industry relations. One of the main assumptions is that industrial governance structures are in large part the product of domestic political acts and outcomes.

2.2 The historical study - the Sectoral approach

In the sectoral approach, the concept is that *policy determines policies* and suggests complementarities in the research towards identifying recurring policy problems and challenges faced by policy participants, which cluster around particular policy sectors. Within these arenas, state actors and groups form interdependent relations and attempt to influence and segment the policy agenda. Thus, the political system cannot be widely characterized, but instead, it breaks down into a series of sub-systems in which may be possible to identify a diversity of policy-making styles and traditions[15].

The sectoral approach also assumes that over time, each sector or industry will evolve a group of governing structures which will mould and shape the politics of the

[12] Wilks, S. and Wright, M. (1987), p290.
[13] According to the definition of "Political Elites" in Lopes, Ernâni (2009), p21.
[14] Freeman, G. P. (1985), pp 467-496
[15] The complexity in characterizing the political system in many European countries can be seen in Cawson, A. (1986), pp56-60.

sector[16].Thus, in terms of on what shapes the industrial policy, the sectoral approach starts from *differentiation* within individual countries across sectors and *convergence* across nations within sectors and companies[17].

3. Policy networks[18]

The different political discourses used to legitimate industrial policy are an important feature of the European economy. Many authors[19] have shown how states have pursued different policy paths for key industrial sectors. The cross-national differences in discourse, style, and instruments have provided a complex heritage for European Commission as it asserts its authority in the automobile sector. The Commission's response, at least in terms of policy outcomes, has vacillated between an ascendant neo-liberal approach, and the traditional social market position of the central European states[20].

When studying the European history in the automobile industry, it is necessary to take into account that in the 1960s the automobile production was getting more and more global and both classical and sectoral approach must adapt to a new paradigm in the policy-making in Europe.

Policy network can be defined as the clusters of actors forming around specific policy areas and programs within the political system, and also the various interactions between actors within a policy sector. Nevertheless, the policy network definition has also its problems because the key concepts have different meanings in different authors. They are currently divided over the importance of interpersonal relationships and whether networks exist at the sectoral or sub-sectoral or even at the micro level. These debates are far away from the goals of this thesis, so the issue will be left intact, and the level of policy network analyzed will be only at the European-level.

[16] Campbell, J. et al (1991), p103.
[17] Freeman, G. P. (1985), p486
[18] The concept "policy network" indeed has many similarities to the concept of "Centros/Teias de Poder" explained by Rodrigues, Eduardo L. (2008), p118.
[19] As shown in Shonfield, A. (1965).
[20] Wilks, S. (1998).

3.1 Policy networks at the EU-level

The propensity for conflict during issue resolution in a multi-level structure like the EU is high and it leads to a vigorous debate (or *antagonistic cooperation*[21]). The EU institutional mechanism to solve differences of interests between actors results in a wide network, also called "political network" [22] because of the political actors involved in the process.

Policy outcomes may have to do with the interaction between networks and other governance structures, as they have interactions between actors within a network. In this case policy-making very often cannot be contained in a single community[23] especially when legislation involves sub-systems, approvals from larger political system, and so on. This creates competition, conflict and new policy players. In a fragmented and multi-level decision-making system as the EU, policy networks try to legitimate their own decisions in national networks.

Several policy studies have identified policy networks at the European level (even if in many cases the nomenclature has not been adopted[24]). This is because there are inherent features in the EU polity which encourage policy networks. Firstly, the policy-making structures of the EU were designed to depoliticize issues and break them down into components that could be managed away from the domestic political intervention. Secondly, the institution responsible for proposing legislation[25], the European Commission, was designed to manage the interaction process through a process of delegation and monitoring. Third, the Commission lacks the resources and expertise to manage the policy process from the centre[26]. We can find that in the implementation stages of policy-making, where the Commission has little choice but to rely on policy participants attracted or invited to the discussion. Some obstacles that emerge in this process are due to the high level of inter-relationship between the actors. Sometimes the main question is to know in which stage should be negotiated the issues and even more

[21] Marin, B. and Mayntz, R. (1991), p17.
[22] Idem.
[23] Ripley, R and Franklin, G (1984).
[24] The complete list of studies is described in McLaughlin, A. and Maloney, W. (1999), pp108-112.
[25] In the analyzed period of this thesis.
[26] Ribeiro, Sónia (2008), p24.

important, in which stages should be negotiated those issues in order to achieve more quickly the desired goals/outcomes[27].

Because of the diffuse nature of the EU political system it is difficult to identify the boundaries of EU-level policy networks. This also happens when analyzing the Commission's activities, which like most of EU institutions, is not a monolith. The EU is a complex and unique policy-making system. Its multi-national and neo-federal nature, the extreme openness of decision-making to lobbyists and the considerable weight of national politico-administrative elites[28] within the process, create an unpredictable and multi-level policy-making environment[29].

4. Definitions and limitations of the thesis

The methodological orientation to be followed, the path of the investigation that progressively is opened, the nature of the problems that surround the study and the possible outcomes of the thesis, do not seem compatible with the strict definition of "Economic Science". In order to precise and situate this thesis's domains, the author believes that it is a study of "Economic Policy" or even more exact as one of "European Economic Policy"[30].

Regarding the methodological approach, the classical and sectoral approach in a historical study has been constantly refined since the 1970s, and there is a danger that when attempting to offer too precise definitions, the main concept is lost and with it much of the thesis' objectives. Rigid definitions can obstruct the fluidity of this thesis, especially because the industry has become much more complicated in Europe than it was decades ago. Therefore, this study aims to follow the tradition of authors like Sir Karl Popper, Isaiah Berlin[31] and Henri Poincaré, regarding the belief of the permanent interaction between the thought and the action, as being the great criteria to characterize the true scientific knowledge[32].

[27] Thorstensen, Vera and Jank, Marcus (2005), p23.
[28] As an European version of "Political Elites", according to Lopes, Ernâni R. (2009), p21..
[29] Richardson, John (1996), pp3-4.
[30] The concepts of "Economic Science", "Economic Policy" and "European Economic Policy" are well defined in Lopes, Ernâni R. (1981) pp9-12.
[31] We can find an accurate description of these authors in Espada, João Carlos (2008).
[32] Rodrigues, Eduardo L. (2008), p53.

A considerable amount of policy-making in the automobile sector is also highly technical. Sometimes some technical questions are explored not only because of its intrinsic importance but also because it is necessary to better understand the decisions in this sector. Although some technical debates will be explored, the objective of this thesis is not to enter deeply in the technical issues, and the focus should be on the economic questions. The thesis aims to analyze the policy networks and observe how actors from different territorial levels come together to resolve the economic issues. There are issues of significant importance to the single market in vehicles, but sometimes they are matters of "high-politics", which are decided at a level well beyond the politics of the automobile sector. The focus will be on those areas where the Commission-industry negotiations made a difference in Europe.

Aware of the limitations of this kind of study at a European-level, Peterson argued that we still have few definitive answers to the truly important questions, regarding any research which seeks to answer fundamental questions about the nature of the EU as system of government [33].

[33] Peterson, J. (1995), p89.

Chapter II – Automobile Industry developments in Europe

1. From the steam to the gasoline vehicle

Many Europeans experimented using illuminating gas and petroleum as fuels for mechanical transport through internal combustions in the 1860s and latter. The first successes of major consequence came in southwestern Germany. In Manheim in 1886, Carl Benz, attached a four-stroke gasoline engine of his own design to a large tricycle and drove it successfully[34].

Although Carl Benz is often stated as the "father" of the motorcar, Gottlieb Daimler made similar progress during this period. Daimler worked with Nicholas Otto at the Deutz company, but struck out on his own in 1882. Together with Wilhem Maybach they settled the Daimler Motor Company in Stuttgard, but they were targeting engines for boats, tramways and stationary purposes. At first he continued to make small number of powered tricycles, selling most of them in Paris. Benz finally introduced a four-wheel car in 1882 and sales began to rise. From 1888 to 1893 Benz sold 69 vehicles, and just by introducing the four-wheel model the sales were about 67 in 1894 and 135 in 1895.[35] Automobiles had become a serious business [36].

By 1898 the Benz Company had sold a total of 1132 cars, most of them to the French aristocracy. In fact, there was a strong French interest in automobiles and slowly the country began its way to be the center of the early automobile industry. The connection began in 1887 when Daimler's company licensed the firm Panhard&Levassor (P&L) to manufacture its engines[37]. In the following years, Daimler and Emile Levassor persuaded the family of Armand Peugeot to use some of the French-made engines. With the business rising, Peugeot also started to sell automobiles of its own design, powered by the P&L engines[38].

Closely related to the early growth of the European automobile industry was the bicycle. Developed first in France in the 1860s, British firms soon dominated this trade.

[34] Ickx, Jacques (1961) , pp. 152-156
[35] Hanf, Reinhard (1980) pp 18-46
[36] Stratton, Michael (1994); pp 281-288
[37] Siebertz, Paul (1950), pp 170-172.
[38] Corlin, Georges (1965), p49

The market for the earliest bicycles, with their very high front wheel, remained limited to athletic young men until the introduction of the safety bicycle in the mid-1880s. This type had wheels of equal size and a chain drive, and now almost everyone could ride it. After the appearance of a second major innovation, pneumatic tires in the early 1890s, bicycles became the fashion for middle and upper class young men and women. As more and more producers entered this business, prices dropped, the market expanded and a bicycle boom ensued in Europe and North America in 1895-97.

According to several authors[39], in a variety of ways bicycles led directly to automobiles. Many technical aspects carried over into car design and manufacture: ball bearings, chain drive, pneumatic tires, and the manufacture of standardized parts by single-purpose cutting tools or stamping presses. Bicycles also accustomed people to individual mechanical transport and encouraged tinkerers to apply some sort of mechanical power to them. Methods to publicize and market bicycles were also adopted by automakers: annual shows that featured new models, races between cities or on tracks, specialized weekly and monthly publications financed by manufacturers' advertising, and a system of dealers and repair shops.

2. Through the "Belle-Époque"

The period from 1870 to 1914 was notable not only for the rapid growth of industry in Europe, but also for the concentration and combination movement. This was the period of the rise of new industries, such as automobile, chemical and electrical, and the rapid rise of the German industry[40].

Both automobile production and market grew quite rapidly from 1898 on.[41] After the turn of the century, motorcar manufacturing in Britain began to expand, followed a few years later in Germany and Italy.

[39] It is possible to find this theory in the following authors: Barker, Theo (1987), p8; Church, Roy (1982) p 12-19; Friedson, Paul (1972), p.560; Hanf, Reinhard (1980) p46; Homurg, Heidrum (1978) pp 180-193; Laux, James M. (1976) pp 210-213;
[40] Friedlander, Heinrich and Oser, Jacob (1953), p221
[41] Laux, James M. (1976) pp 210-213

Chart 1: World Automobile Production 1900 – 1914

Years	France	Britain	Germany	Italy	Europe	U.S.
1900	4,800					4,192
1903	14,100	2,000	1,450	225,000	*17,775*	11,325
1908	25,000	10,500	5,547	2,300	*43,347*	65,000
1910	38,000	14,000	13,113	4,000	*69,113*	187,000
1913	45,000	34,000	20,388	6,760	*106,148*	485,000
1914				9,210		569,000

Sources:
(Italic numbers are estimates)
France: Laux, James M. (1976), pp 210-213
Britain: Nicholson, Theo (1982) pp 379.
Germany: Von Scherr-Thoss, H. C. (1974). 50-63
Italy: Bottiglieri, Bruno (1987), pp 40-45
U.S.: National Automobile Chamber of Commerce (1933), pp 16-22.

2.1 The Automobile in France

In 1895 the industry's promoters staged a real automobile race, a run nonstop from Versailles to Bordeaux and back. This event had a quite impressive publicity in the following newspapers, which ratified the French and German lead in automobiles.

The Paris-Bordeaux race saw also the introduction of a major improvement for automobiles – the pneumatic tire. Though, the pneumatic tire reinvented in Belfast, Ireland, by John Boyd Dunlop in 1888 was used only in the bicycles, until 1902 when was adapted into some automobiles.[42] The rise of the automobile sales certainly accustomed many French people to powered individual transport and prepared the

[42] Ickx, Jacques (1961), pp. 152-156.

market for full-sized motor cars. Actually not just French people, but also British, German, Italian and American people, started to increase the demand for a self powered vehicle.

The earliest buyers of cars in Europe were wealthy sportsmen, interested in novelty and speed, and engineers intrigued by the new mechanical devices. Soon, clients from other social groups joined them, including businessman, physicians, prosperous rural landowners and traveling salesman. Then, in the few years before the First World War when a great number of inexpensive cars became available, some independent craftsmen began to come into the market.[43]

Cars were sold and repaired at the factories in the early days, but soon the manufactures contracted with agents or dealers to represent them. The automakers established their own branches in major cities to ensure reliable treatment of customers, creating a wide and mass post-sales service.

Louis Renault entered the trade in Paris late 1898, converting some existing vehicles into most powerful machines by developing their engineering. He used the Daimler engines in his vehicles. Another Paris firm, Mors, almost collapsed in 1907 due to unstable management, and André Citroën was brought in to save it.

The European industry concentrated on gasoline engines, rather than electricity or steam.[44] Nevertheless, in New York some businessman reasoned that the simplicity, silence, smoothness and reliability of electric cars made them suitable for cab service.

Of the French automakers, only one, Lorraine-Dietrich came from the manufacture of the heavy equipment[45]. Ultimately, several firms from that sector did enter the new industry, such as the boiler maker Delaunay-Bellevile, which made heavy and elegant cars and the armaments firm Schneider. The large engineering companies in Europe did not go well in auto manufacturing. The design, production and selling of complex consumer goods like passenger cars was quite different from locomotives, heavy electrical equipments or shipbuilding. The characteristic of operations was so unlike what these firms had been doing that few choose to enter the new business.

[43] Friedson, Paul (1972) pp. 560-562
[44] The poor showing of steam and electric cars in the demonstrations and races of the mid-1890s probably accounts for this.
[45] Corlin, Georges (1965), pp 49-50

In what concerns the investment, in general the accumulation of investment capital was not a major problem for early automakers, for they did not require large amounts. Firms already in metalworking, gradually shifted resources to the new automobile production lines[46]. The founders of new companies like Renault, Delage or others, obtained easily capital from family or friends. All that they needed could be resumed to leasing a small workshop, installing a few used machine tools and buying some components on credit. The one third down payments usually required of customers when they ordered a car provided additional working capital and banks were willing to make short term advances on the basis of firm orders for cars[47]. Further growth could come from retained earnings, but a faster way was to convert the company to a corporation and sell shares. Banks or investment houses, often small ones, assisted in these public offerings. An interesting pattern in the European automobile industry in this period was the refinancing of the firms on the London market, which reached a peak in the years 1903-1906.

When European automobile production expanded, it appeared into the business a variety of component manufacturers. Suppliers of axles, wheels, radiators, and other parts, own they rise to the automobile trade. But more important was the auto industry's demand for special steels, originally developed in the 1860's for naval armament.

In terms of foreign trade, although France remained the leading European automobile producer before 1914, Great Britain provided by far the largest European market for the new machines. The early French intercity races attracted great attention in Britain and raised a strong demand there among rich sportsmen[48].

[46] Homburg, Heidrum (1978), pp 180-193
[47] Sée, Henri (1936), p32
[48] Ickx, Jacques (1961), pp. 152-156

Chart 2: Foreign Trade in Automobiles and Parts (in millions of dollars)

	Exports		Imports	
	1907	**1913**	**1907**	**1913**
France	27.9	43.9	1.7	3.8
Britain	6.5	21.1	20.1	31.7
Germany	3.4	20.7	4.3	3.4
Italy	3.9	7.5	1.6	2.2
U.S.	5.5	32.8	4.8	2

Source: White , Harry D. (1983), pp. 44-45

The rapid rise of American auto exports (chart 2) reflects the success of the Ford and other low and medium-priced car in world markets after 1910. France's head start allowed it to maintain the lead in exports until the war, but it began to lose its power in the three or four years before the First World War.

The same standardization occurred in Europe. As European auto makers began to pay more attention to the low and medium price range, they sold more cars with standard bodies to reduce the total price to customers[49]. They made these bodies in their own shops, or bought body-making companies, or contracted with independent body firms to supply several standard designs.

2.2 The Automobile in Great Britain

There were about two dozen motor vehicles for passengers in Great Britain by the end of 1895, half of them imported from France and Germany, and the rest put together by individual experimenters[50]. But only one (Herbert Austin) was associated in a

[49] Hanf, Reinhard (1980) p20.
[50] Nicholson, Theo (1982), pp 379.

managerial position with a metalworking firm. In Germany and especially France, production of automobiles came first, and then the market, in Britain the case was the opposite[51]. Several reasons may be advanced as why British manufactures hesitated to enter the new business. From the early 1890s to late 1897 the bicycle trade enjoyed a marvelous boom – there was no need for these firms to diversify into another line. Second, various laws known as Red Flag legislations limited speeds of mechanical road vehicles[52].

As British interest in motorcars began to grow in 1895 and 1896 following reports of races in France and the appearance of a few automobiles at London and other cities, the Red Flag legislation was soon revised. Some bicycle firms in London were cautious about shifting into the new industry, but with the serious depression sustained by the bicycle trade, a great number of firms moved to the motor business. A second center of automobile production was Glasgow, the heart of metalworking in Scotland. There, firms like Arrol-Johsnton, Albion or Argyll began importing Renault and De Dion-Bouton cars, then imported their parts and assembled them.

Gradually they increased the share of locally made parts and began to make their own models. Although London was by far the largest market for automobiles in Britain, it had not become more than a secondary center for their manufacture. Automobile firms began to operate successfully in a variety of cities, a pattern of dispersal quite unlike the French centralization in Paris, but similar to the German experience. [53] After the recession of 1908, British auto production expanded more rapidly and several companies began to turn out over a thousand cars per year. As this occurred, Parliament in 1909 approved a tax on motorcars, after France (1898), Italy (1906) and Germany (1906). As in other countries, the tax was based on fiscal horsepower[54].

With the Ford's models and the inexpensive cars offered by other British firms, the British automobile market began in 1912 to shift toward the low-price range[55]. The British took those vehicles more quickly and probably made more of them before

[51] Ross, Holfman (1933), pp. 217-218
[52] Great Britain, Parliamentary Papers (1915).
[53] Boschma, Ron A. (2007); p213.
[54] Great Britain, Parliamentary Papers (1915).
[55] Church, Roy (1982); pp 12-19.

1914[56]. One reason for this may have been their familiarity with steam-powered road haulers. In addition, Britain had a smaller mileage of competing rural railways than did France or Germany. After the speed limit went up in 1896, lighter and faster steam wagons, buses and traction engines came into service[57]. At first, foreign manufactures supplied many of these vehicles: De Dion-Bouton from France and from Germany Daimler and Büssing. The Clarkson Company introduced gasoline buses to London in 1904, and the number rose so quickly that the London Omnibus was created. By making one standard model, it became the largest bus builder in Britain, and during the First World War produced a large share of the British trucks[58].

Britain continued to import large numbers of cars and parts through 1923. The French share of these imports, although remaining the largest, declined before the onslaught of cheaper cars from the United States from 1910 on. Britain's free trade policy explains in part its large number of automotive imports. Regarding this issue, Foreman-Peck highlighted that a high trade tariff would have encouraged the growth of the British automobile industry before 1914[59]. Other European producers had modest duties on automotive imports, 3% of value for Germany, 5% for Italy, 10% for France and 12% for Belgium. Exports from Britain climbed steeply starting in 1910, with Australia – the leading market – followed by New Zealand, India, South Africa, Argentina and even Russia. By 1914 heavy imports and growing home production had made Britain the most motorized of major European countries. The number of registered motorcars and trucks in that year was 210,000; compared with 125,000 in France; 70,515 in Germany and 23,900 in Italy[60].

2.3 The Automobile in Germany

In Germany a wide variety of firms began experimenting with automobile production from 1898 on. One reason was the obvious success of Benz, and also with the bicycle market falling down, many of the bicycle makers considered a new line of product, either motorizing their machines or moving to full-sized cars. Publicity about French

[56] The bibliographic research showed inconclusive figures between European commercial vehicles between 1890's to 1920. One of the reasons was the difficult definition of "commercial vehicles".
[57] Whitehead A. (1970); pp 76-89
[58] Hibbs, John (1968); pp 47-48.
[59] Foreman - Peck, James (1979); pp 242.
[60] Great Britain: Whitehead A. (1970) pp 76-89;
Germany: Statistiche Jahrbucher fur das Deutsche Reich (1880-1914); pp 23-45.
Italy: Ortaggi, Sirmonetta (1998); pp 30-34
France: Laux, James M. (1976), pp 210-213

achievements with automobiles reinforced these considerations. It is no surprise that many entrants to the new industry came from firms producing bicycles and sewing machines[61]. More than in France or in Britain, many carriage and wagon builders also experimented with automobiles, as did general machine shops. Because the metalworking industry was widely spread in Germany, early auto producers appeared all over the country. Although most of them left the auto business within a few years, enough remained to result in a much dispersed geographic pattern as the industry matured[62]. This dispersal probably had the effect of slowing the growth of the German car industry. The lack of centralization tended to delay the appearance of component manufacturers, for they were not able to supply several auto firms in the same locality and so take advantage of long production runs and the consequent economics of scale.

The rarity of component makers in turn made it harder in the very early days for the single entrepreneur to assemble cars on a financial shoestring, so frequent in France and in Britain[63]. In addition, craft traditions in Germany retained more power that to the west, and it was judged positive for an auto firm to have as many parts as possible made by skilled craftsmen in its own shops.

Chart 3: Motor vehicles produced by some German firms 1899 – 1914

Year	Benz	Daimler	Opel
1899	572	108	11
1903	172	232	178
1908	646	231	500
1914	3,164	1,972	3,519

Source:
Benz and Daimler: Oswald, W. (1986), pp. 16-17.
Opel: Ludvigsen, K. (1975) p96.

[61] The theory that bicycles lead in many ways to the automobile, was already explained in the previous pages of this chapter.
[62] Boschma, Ron A. (2007); p213
[63] Kugler, Anita (1987), p316.

As we can see in the chart, in the first years of the twentieth century, none of the German firms played as significant role as Benz and Daimler. Expanding steadily along with the German auto industry as a whole, Benz in 1907 bought a small producer in Gaggenay to build low-priced models, and the car became Benz's sales leader in the prewar years[64].

Early in 1901 Maybach and Paul Daimler began delivering a new model named Mercedes and it performed very well in some races and established a high standard for luxury cars. For the first time in Europe a car that was not French set the style for automobile design. The Daimler Company, with a winner model on his hands began to expand. Production climbed from 96 units in 1900 to 863 in 1905 and process rose also. For this, Daimler's Mercedes cars, as well as its trucks and buses did not sell well in Germany. Of 2,685 vehicles produced from 1902 through 1907, almost 80% were exported. Daimler concentrated its production methods[65], so its output did not grow rapidly after 1904 and its market share declined as other companies entered the business.

The German government introduced more regulations on cars and driving that did the Western countries and in 1906 began to collect a tax based on fiscal horsepower. It ranged from 1% to 3% of the original cost of a car, and so provided a modest incentive to buyers of small cars[66]. As in France and Britain, small cars began to take a larger share of the growing German market after 1910. The trend to smaller cars in Germany paralleled that in the Western countries.

Like France and Britain, Germany produced only a few gasoline trucks in the early years of the twentieth century. There was a slightly larger market for buses, especially in England where Daimler and Büssing sold some around 1905[67]. In Germany, however, the bus business never developed as in the Western countries. Truck use began to grow more rapidly in 1907, and from the seven years in that date until 1914 the number of trucks registered rose from 957 to 9,639[68]. A small share of this growth came from the military subsidy system that went into effect in 1908. Nevertheless, German

[64] Oswald, W. (1986), p16.
[65] Homburg, Heidrum (1978), pp 180-193.
[66] Ashley, Percey (1920); pp. 122-145.
[67] Hibbs, John (1968); pp 62-63.
[68] Statistiche Jahrbucher fur das Deutsche Reich (1880-1914); p34.

truck making was quite a small factor in 1914, less than Britain or France, a situation that would leave consequences during the war that began that year.

As in Britain, the German auto industry as a whole grew rapidly from 1909, and began to take a larger share of the international market. By 1913 Russia had become the leading buyer of German automotive products, followed by Austria-Hungary, Great Britain and Argentina. The Germans too were moving into the less developed countries.

2.4 The Automobile in Italy

Automobile production and sales in Italy trailed well behind the three more highly industrialized countries[69]. Around 1900 most of the cars sold were French chassis with locally manufactured bodies. A handful of firms began to make the chassis themselves, and by 1905 Italy produced more cars that it imported[70]. The domestic market was small, as average income was low, so most Italian automakers at first aimed primarily at the export market with large luxury and sports models.

The northern cities of Milan and Turin quickly became the centers of the industry. Each had a foundation of small machine shops, railway equipment builders and carriage makers, along with skilled metalworkers[71]. As it was the most economically developed part of the country, northern Italy also was the center of the domestic market for cars. Firms like Bianchi, Isotta Fraschini and Lanza began making cars around 1895.

In July 1899 was established the Fabbrica Italiana di Automobili di Torino, or FIAT. Production was the first priority, adopting the best foreign practices, by buying parts from France and offering cars based on Mercedes lines[72]. In 1903 the Fiat's outputs reached 135 cars and over the next three years the company enjoyed a boom and had to enlarge its plants several times. Fiat followed policies of vertical integration and product diversification. It took control or influence over steelworks, foundries, machine-tool producers, woodworking, body shops, sales agencies and even some public transportation companies. It also began to make commercial vehicles in 1903, aircraft

[69] As seen in Chart 2: World Automobile Production 1900 – 1914, in the previous pages of this work.
[70] Ortaggi, Sirmonetta (1998) pp 30-34.
[71] Bottiglieri, Bruno (1987) pp 40-45
[72] Idem

engines in 1908 and marine engines in 1909. The growth of the automobile industry in France and Fiat's success inspired other Italian entrepreneurs.

In Milan, Isotta Fraschini began making its own large models in 1902 and soon entered races to build a reputation. Piacenza, Brescia, Florence and Genoa also housed small producers in these years. [73]The Pirelli rubber company of Milan also took part in the new industry. It began manufacturing auto tires in 1899 and was the first Italian manufacturing firm to establish a foreign branch – in Spain in 1902. Pirelli dominated the tire business in Italy as did Michelin in France, Dunlop in Britain and Continental in Germany.

Chart 4: Automobiles produced by some Italian firms 1901-1914

Year	Fiat	Alfa	Isotta
1901	135		
1905	461		
1910	1,78	20	125
1914	4,644	272	308

Sources:
Fiat and Alfa: Bottiglieri, Bruno (1987), pp 40-45
Isotta Fraschini: Anselmi, Angelo T. (1977), pp 252-358

Although the number of motorcars registered in Italy in 1905 barely exceeded 2000, the government established an annual tax on them. It varied according to the engine's horsepower, as elsewhere in Europe[74].

Fiat began to sell medium-priced cars and did well with them, and like other European countries was moving toward smaller cars. It also began making trucks and buses in 1903. The output rose slowly to 82 vehicles in 1910 but then reached 624 in 1912, and 1408 in 1914. These numbers show Fiat to be not only Europe's largest truck maker but

[73] Bigazzi, Duccio (1988), pp 40-45.
[74] Ashley, Percey (1920); p.132.

the only one with a considerable output in Italy. The Italian army's interests in trucks lay behind Fiat's growth in this area. The army's 1912 maneuvers and then the outbreak of the Italo-Turkish War in that year brought Fiat some large orders for trucks. The war with Turkey was fought in Libya, where Fiat trucks were the only mean of transport. Fiat also received some prewar military truck orders from the Russian government[75]. Italy remained the smallest of the four leading automobile producing countries of Europe by 1914, and without Fiat, Italy's production would have been negligible.

2.5 Other European Countries

Automobiles were produced in many of the other countries of Europe, in cities with metalworking traditions such as Barcelona, Geneva, Zurich, Vienna, Prague, Budapest, Amsterdam and Copenhagen[76]. Russia, despite its wretched roads, became a sizable market for trucks and heavy cars, but manufacturing hardly began before the war. In 1904 about 10,000 motor vehicles of all types operated in the country and the Russo-Baltic Company, had assembled some 450 vehicles over several years from components from Germany and Belgium[77]. Automobile manufacturing had become an important industry in Western and Central Europe, employing directly more than 100,000 workers. Europeans had invented the gasoline car and demonstrated great technical prowess in its development. However, they had not really developed a mass market for it. To do this the producers had to learn how to make cars more cheaply, something the Americans were pioneering in the years just before the First World War.[78]

2.6 Manufacturing and Production

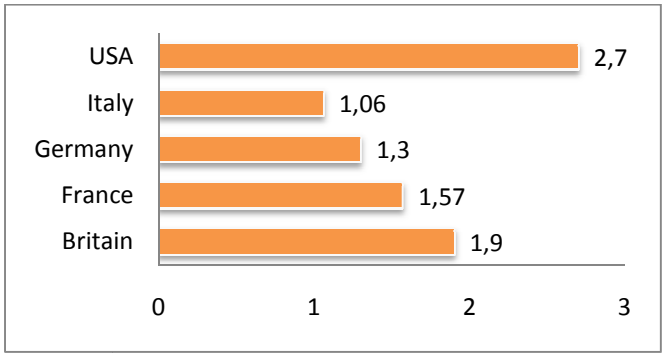
Workers, at least in localities with other metalworking shops, were not hard to find. European auto firms did not expand their output so rapidly as to require huge increases in their work forces[79]. They drew the skilled people they needed from bicycle or machine building firms, and they had no difficulty attracting teenagers as unskilled

[75] Salazar, Carlo F. (1983), p56.
[76] Laux, James, et Al (1982) p. 66.
[77] Baxter, William P. (1973) p. 218
[78] Hanf, Reinhard (1980), pp 18-46.
[79] Friedlander, Heinrich and Oser, Jacob (1953), p. 265.

helpers. When companies began to produce more than a handful of cars per week and price competition became a factor, management began to seek production methods that would simplify and speed output and reduce costs.

American automobile factories adopted the flow production arrangement early and it began to appear in European plants after the 1907-1908 recession encouraging automakers to reduce costs and broaden their market by making low-priced cars. Henry Ford's success with flow production in his new factory in Michigan, brought many visitors from Europe and many more read about it. Another American, Frederik W. Taylor, also began to influence European motorcar production during this period. "Taylorism" aimed to increase labor productivity through preparation, measurement, and inspection of work in automobile factories. The Taylor system examined each task performed by a man or a machine and tried to increase the output[80]. According to Hounsell[81] and Barker[82] the "Fordism" went further: it tried to change or eliminate the task itself by mechanization, thereby reducing the labor input sharply, especially skilled labor.

Chart 5 - Estimated average daily wage of Autoworkers (dollars per day)



Source: Laux, James, et Al (1982), p66.

Working conditions in European auto factories tended to be slightly better than in other metalworking establishments[83]. Usually the working day lasted from 9 to 11 hours, five

[80] Homurg, Heidrum (1978); pp180-193.
[81] Hounsell, David (1984) pp 249-253.
[82] Barker, Theo (1987) p8.
[83] Bellon, Bernard (1987); pp 77-96.

and one-half or six days a week. In the dozen years up to 1914, weekly hours tended to decline and wages to rise[84].

3. First World War

The head of the German Daimler company commented that "The war was a huge glutton whose favorite dish was motor vehicles"[85]. Actually, when it became clear that the conflict would last more than a few months, armies began ordering great amounts of conventional munitions (machine guns, artillery shells, and other weaponry) from automobile firms. Then, as motor vehicles proved their value in moving supplies, troops and artillery, the orders for trucks, buses and tractors mounted. When the military in 1915-16 recognized how the airplane had become a valuable weapon[86], motorcar companies expanded or launched into aircraft engine manufacture. Finally, a few of these companies produced an even newer weapon – the tank. The war brought a great expansion for the European motorcar industry and millions of people became much more familiar with automobiles. Many companies demonstrated a great flexibility in shifting their output to a wide variety of products as demanded by their war ministries. Then, by 1917 and in some cases earlier, the military officials decided that standardization would work for them too, and they strived for more concentration on a limited range of trucks, aircraft engines and munitions.

3.1 France

In the French case the automobile industry played a prominent role in the war. Few of its factories were in the area occupied by German forces in the north, although the output of the important group of foundries along the Belgian frontier was lost and the Peugeot shops around Montebéliard were threatened but never overrun. Early in the war most of the companies began to make artillery shells, but André Citroen was more successful. The French Army gave him a large contract in February 1915, and Citroen quickly built a large factory in Paris and began production in mid 1915. Citroen´s extensive mechanization and assembly lines for sectioning the process allowed him to pursue an extreme division of the labor, and thereby utilize many unskilled workers,

[84] National Automobile Chamber of Commerce (1933); pp 16-22.
[85] Kugler, Anita (1987), p245.
[86] Lopes, Ernâni R. (2006), p48.

especially women. By November 1915 one-fifth of his 3,500 workers were female, and at the armistice the proportion had risen to one-half of 11,700 workers.[87] Citroen´s 26million shells, his factory location in Paris, and his innovations in production and labor policy brought him much favorable attention. He became a national hero and he decided to adapt his factory to mass produced cars after the war. His company made shells, various types of trucks, artillery tractors, aviation engines and light tanks. Renault put these products together in its own shops, which at the war´s end employed some 22,500 workers, but more and more of the parts for them came from subcontractors. Renault's aircraft engines and tanks were made by outside firms like Peugeot and Berliet. Government pressure forced the auto and other metalworking firms to work together in groups to make complex items. This arrangement of military product groups worked well and helps to explain how the French outproduced the British and Germans in automotive equipment such as trucks and aviation engines.[88]

Peugeot also produced a variety of war materiel, including some trucks, aircraft engines and some engines for Renault tanks, but this firm did not expand nearly as fast as Renault or Berliet. In Lyon, Berliet produced millions of shells but concentrated more in vehicle manufacturing, ultimately producing 25,000 trucks, as the French authorities moved further toward standardization in trucks than British, Germans or Americans. One of the outstanding wartime manufacturing achievements in France was the production of nearly 90,000 aircraft engines, more than twice the total of either Britain or Germany. When the war began, the two leading types were the Gnôme and Rhône (G&R) and the Renault engine. However, the G&R engine proved unsuitable to the war's needs and the authorities ordered more Renault engines, based in the Hispano-Suize design. Since the firm Hispano-Suize was not able to produce the necessary amount of engines, the French military ordered fourteen other French firms, including the automobile makers Peugeot, Brasier, De Dion-Bouton, Belleville and DFP to manufacture the Hispano-Suize engines. Unfortunately, parts on those engines produced by different firms usually were not interchangeable. Altogether some 20 prewar French automobile makers engaged the aircraft engines during the war[89].

[87] White , Harry D. (1983), pp. 44-45.
[88] Friedson, P. (1978), p161.
[89] Loubet, Jean (2001) pp. 152-156.

3.2 Britain

The British automobile industry did not expand as much as the French, nor did it exhibit as much as flexibility. English Ford continued to assemble vehicles shipped from North America, some as cars but many adapted to serve as ambulances or light trucks.

Austin Company made primarily war material: shells, artillery guns, aircraft, ambulances, trucks and armored cars. Most of these came from two large factory buildings constructed and equipped by the Ministry of Munitions[90]. The majority of the truck markers expanded their output and a dozen of them made between 1,000 to 5,000 trucks per year during the war, but the Associated Equipment Company supplied the largest number of trucks: about 10,000. It was the first British-owned motor vehicle firm to set up a moving assembly line[91]. The British government entrusted tank manufacturing primarily to a railway-car firm, the Metropolitan Carriage Wagon Company, which assembled the 70% of the 2,600 produced along with Foster. The English Daimler company supplied most of the tank engines. British production of aircraft engines expanded very slowly. Before the war, the G&F engines from France dominated the British aviation and the unavailability of some interchangeable parts also delayed the industry's growth.

3.3 Italy

The Italian army took advantage of nine months of neutrality to continue its motorization before it entered the war. By May 1915 it possessed 3,500 trucks and ambulances, mostly Fiats[92]. This company's vehicles found almost unlimited markets both at home and for its allies. Fiat produced about 45,650 trucks during the war, by far the largest total in the world.[93] In addition to the standard truck models, Fiat made a great variety of other military supplies, including buses, artillery tractors and machine guns. It also built some 15,000 aircraft engines. Fiat itself produced all the parts used in these vehicles and engines. It did not have a moving assembly line but did continue its prewar evolution toward making interchangeable parts on single-purpose machines

[90] Nicholson, Theo (1982); pp 121-350.
[91] Whitehead A. (1970), pp 76-89.
[92] Ortaggi, Sirmonetta (1998), pp 30-34.
[93] Salazar, Carlo F. (1983), p54.

operated by unskilled labor. By the end of 1917, Fiat's many factories employed some 40,000 (compared to the prewar number of 4,000) and substantial shares of these were women and young boys. The other Italian auto firms made much smaller numbers of vehicles during the war, in particular trucks for specialized purposes. Isotta Fraschini produced a considerable number of powerful aircraft engines that earned a good reputation, as did those of Fiat. Allied observers in 1917 found the engines of these two firms reliable and standardized with interchangeable parts.[94]

Chart 6: Military Production during the First World War

	Britain	France	Germany	Italy
Vehicles produced	59,000	66,000	60,000	55,000
Vehicles in service in 1918	87,000	91,000	56,000	36,000

Note: numbers excludes tanks and motorcycles
Source: Friedson, P. (1978) pp.130-165

3.4 Germany

The German motor-vehicle industry engaged heavily in military production[95], but showed less adaptability than the French or Italian. Trucks and aircrafts engines were main products. The largest firm, Benz, cut back on passenger car production to as low as 213 units in 1918, and truck output did not expand, remaining steady at 1,100 to 1,300 per year. In the 1915 the Prussian War Ministry persuaded Benz to take financial control of the Aviatik aircraft factory in Leipzig, but this connection did not seem to have much effect on the motor's firm Mannheim activities. At Mannheim it produced 11,300 aircraft engines during the war, but Benz engines were not among the best. Benz also received orders for submarine diesel engines and became major supplier of them. Over the course of the war its employment rose from 7,700 to 16,000 workers.

Similar developments occurred at Daimler, where passenger-car output dropped to 108 units in 1918 and truck production rose to nearly 1,000 models in that year. Daimler's

[94] Laux, James, et Al (1982), pp. 66.
[95] Ludvigsen, K. (1975); p 96.

primary wartime achievement came with aviation engines, and became country's leading producer throughout the war. Its Mercedes engines were heavier then the French engines, but more reliable, durable, and simpler to maintain. Daimler delivered 19,876 of the estimated 41,200 aircraft engines made in wartime[96]. Peak employment in the Daimler factories reached 25,000 workers, surpassing the Renault, France's largest automotive employer, but was well below Fiat. Factory organization changed little at Daimler during the war, although the concentration on just few types of aircrafts at Untertürkheim[97] permitted more single-purpose machines and the greater use of unskilled men and women. However, a scandal erupted at Daimler early in 1918. In February the direction wrote to the War Ministry that unless Daimler received higher prices for its engines (because of higher labor, and material costs, night work and overtime), the output would fall. The company however refused to submit detailed calculations to support its claims. This letter became known to the Reichstag. The military authorities reacted in March 1918 by placing Daimler under military supervision, but even after the army took control, troubles continued at Daimler. The company's shortage of certain parts led the military to demand these parts to be subcontracted.

Opel became a major German truck builder during the war, turning out 4,400 vehicles. This concern also made aircraft engines, first a design of the small Argus Company and then the exceptionally good BMW on license. BMW (Bayerische Motoren Werke) of Munich had made motorcycles, but it presented a fine aircraft engine in the middle of the war. It made 734 of these engines and Opel made 2,260 more. Other German auto firms also made a few thousand trucks during the war, but none produced them in really large numbers as did Fiat and Berliet. The War Ministry could not seem to act on the idea of making one or two standard models[98].

The difficulties the German army experienced in using trucks early in the war, emphasized the immense problems in providing spare part and repair for all the different models. The Prussian War Ministry reacted in 1915 by establishing norms for automobile parts and also provided specifications for a standard truck[99]. These beginning moves toward standardization allowed simpler production methods and more

[96] Gilles, J. A. (1971), p125.
[97] Bellon, Bernard (1987), pp 77-96.
[98] Conrad, Johannes (1928); p72.
[99] Kugler, Anita (1987), p316.

use of less skilled labor. Such dilution of work occurred, but apparently to a lesser degree than was in the case in the Allied countries.

4. The period between 1920's and 1930's

In the 1920's, the American automobile industry scored some huge gains. Output of cars and trucks rose from 65,000 in 1908 to 2.27 million in 1920 and the number of motor vehicles in service multiplied from 198,400 to 9.24 million over the same period[100]. Production innovations lay behind this growth, and also the lower cost of manufacturing and massive use of low-skilled workers. During the First World War, American car production boomed although raw-material shortages required a cutback in 1918. More and more American vehicles were exported to Europe (trucks and cars), especially Fords. The United States production was about 19 times larger than that of still-recovering Europe. Before the thread of American conquest of the European auto industry (by assembly in Europe of American-made parts, and by manufacture in Europe by American firms), the European manufactures followed positive and negative policies[101]. Positively, they adopted many American production methods (Fordism/Taylorism) and imported American machine tools to raise output and reduce costs. To sell their expanded output of cars, they also adapted American marketing strategies, such as exclusive dealerships, installment sales, widespread advertising, and sales campaigns. Negatively, European auto makers lobbied their governments to discriminate against American cars by taxing motor vehicles and gradually won higher tariffs.

[100] Hounsell, David (1984), pp 249-253.
[101] Friedson, P. (1978), pp.130-165.

Chart 7: Motor vehicle production 1921-1929

	France	Britain	Germany	Italy
1921	55,000			15,000
1923	110,000	95,000		23,000
1925	177,000	167,000	69,000	49,000
1927	191,000	212,000	124,000	55,000
1929	254,000	239,000	134,000	55,000

Source: Laux, James, et Al (1982), p70.
Note: the blank fields are due to huge differences between authors leading to inconclusive numbers.

The American assembly plants established in Europe in the 1920s were responding to raising tariffs on automobile parts. In product policy European producers moved away from American-style cars. As the American models grew larger, more powerful and more luxurious, the Europeans produced smaller and less expensive cars, following their car market as it shifted downward in the economic scale.

France and Britain shared the leadership of the European industry in the 1920s, each producing about 250,000 motor vehicles in 1929. The French market, weaker than Britain's before war, strengthened and now absorbed more than the British. The national economy generally was prosperous and car prices, in real terms, fell some 40% from 1921 to 1930. The domestic demand, which compensated the decline in exports after 1925, was small in the countryside but stronger in towns, where the lack of public transport made personal cars especially useful. Imported cars did not play an important role in France, as the tariff now reached 45%[102]. The annual tax on cars continued to discriminate against those with large engines (especially from America) and now also covered trucks and buses.

[102] White , Harry D. (1983), pp. 44-45.

4.1 France

In 1926 Citroen established small assembly plants in Britain, Italy, Germany and Belgium. Foreign assembly rather than export of the complete car had several advantages: shipping costs were less, parts sometimes paid lower tariffs, some parts could be purchased locally, and local tastes might be met by slight design changes. Of the automakers that would become the French Big Three, Peugeot had the most trouble producing cars in the immediate postwar years[103].

As early as 1923 the French Big Three made over half the country's motor vehicles and in 1929 their market share reached 74%[104]. The concentration typical of the auto industry was proceeding apace. Sales of trucks generally in France almost stopped for several years as military surplus trucks (French and American) were sold in the market at bargain prices. Some other firms aimed at the luxury models, others tried to compete with the large companies in the low and middle price ranges, and still others gradually shifted to trucks and special-purpose vehicles. Some of these firms left the market entirely in the 1920s and 1930s, pressed by competition from major companies and their lack of resources to modernize production.

4.2 Britain

British developments in the 1920s resembled those of France: expansion of the automobile market and dominance of it by a small number of producers who gradually adopted flow production methods and assembly lines. Car prices dropped, falling more than 30% from 1924 to 1930. Britain gave up its role as a large market for other major producers' exports. The McKenna tariff of 1915 (33.3%) on foreign passenger cars and parts had a protective effect. This was not so in 1919 and 1920 when domestic manufacturers made few cars or again in 1924-25 when the tariff was briefly rescinded. But the share of imports in total domestic sales of passenger cars trended downward, reaching 12.8% in 1929. The United States and Canada (whose cars paid a 22.2% tariff)

[103] Henri, Daniel (1993), p34.
[104] Loubet, Jean (2001) pp. 152-156.

were the major suppliers. Export of motor vehicles from Britain exceeded imports from 1926 on.

4.3 Germany [105]

The auto industry in Germany took longer to recover from the war and postwar dislocations that it did in France and Britain. Many difficulties inundated it until 1924-25, and output fluctuated around a low-level. A more normal situation then followed and in 1927-29 the business was rising, only to fall into a sharp depression in the early 1930s. The ownership of the auto companies went through a complicated shuffling that finally led to an outcome with one major producer, six or eight making a few thousand each, and some specialist firms making small quantities.

The industry's major problem in the early 1920s was on the demand side, because after the war the middle class hesitated to buy cars in the face of uncertainty. Prices rose in 1919 and then again in 1921-22, leading into the galloping inflation of 1923. Only at the end of that year the currency stabilized and by then many Germans had lost their savings. Agricultural incomes were low, so little demand came from rural and small towns in Germany. A 15% luxury tax imposed at passenger cars also weakened the market, until the tax was finally abolished in 1926. On the other hand, at some points during the inflation period foreign exchange rates were such that Germany vehicles became bargains for foreigners, and many were exported – for example, thousands of surplus military trucks.

There were difficulties on the supply side also. In 1919 and 1920 traditional labor discipline broke down, a situation triggered by the military defeat and the revolution of 1918, which discredited the ruling elites and authority generally. At the same time came news from Communist Russia where workers had seized control of land and factories. In this context labor disputes were frequent, often set off by price inflation and by such particular issues as the end of wartime contracts, which required sharp cuts in employment. Raw materials, including coal, which many of the larger firms burned to

[105] Overy, R. J. (2005); pp 473-474.

generate their own electric power, ran short. The loss of the Saar and Upper Silesia was an important loss for the German industry as shows one of the first Hitler's speeches[106].

It took time to rebuild supply and sales networks and to design new models. Almost all car imports were banned for several years – a policy aimed at saving foreign exchange, but one that protected the weak domestic industry from competition as well. It also delayed modernization of design and production.

4.3.1 Diesel Engines

The German auto industry led the way in an important new development, the automotive diesel engine. Before the First World War the European navies began to install diesel engines in submarines. The MAN firm developed a relatively light model used in most German submarines during the war. After the war, MAN and Benz strove to apply diesel engines to automotive use to replace high-cost gasoline. By the end of the decade some 310 trucks used diesel engines in Germany, and the technology was under development in other parts of Europe[107].

4.4 Italy

The Italian motorcar industry in the 1920s was a matter of Fiat along with a handful of specialist producers. Just after the war Italian industry was marked by considerable labor agitation. A series of strikes occurred in several production plants and radicalism spread quickly. The postwar recession soon led to layoffs and a further weakening of the labor movement[108]. The fear that labor's actions generated among the middle and wealthy classes in 1919 and 1920 brought support to nationalist and fascist movements. In 1922 the Fascists won, and Mussolini became prime minister.

The Fiat Company continued its policies of integration and diversification in the interwar years. It exported to Britain, Switzerland, Australia and Spain, the contemporary leading markets. Italy and Fiat took up the role of prewar France,

[106] Hitler Speech in February 26, 1924, source: Haffner, Sebastian (2010), pp 34-54.
[107] Whitehead A. (1970), pp 76-89.
[108] Ortaggi, Sirmonetta (1998) pp 30-34.

exporting a large share of output, because the domestic Italian market could not absorb anywhere near the firm's productive capacity.

Italy's other automakers competed in the middle and upper ranges of the market at home and abroad. Ford had begun assembly at a modest rate in Italy in 1922 and purchased land in Livorno for a bigger operation. Pressed by Fiat, Mussolini forbade Ford to proceed, unless it could operate with 100% Italian manufacture. When Ford tried to form a union with Isotta Fraschinni, Mussolini again objected, and Ford backed away, settling for assembly of a few imports. Italy's automotive production growth stopped after 1926 as a recession set in, average incomes remained low, and none of the manufacturers tried to market a really small and cheap car. Imports that might have been competitive were restricted.

4.5 Other areas of Europe

Domestic automakers in the rest of Europe were of comparatively minor importance. In countries with low tariffs, automakers could not compete with imports; in protectionists, however, the market was not large enough for efficient production. Some firms found an answer by manufacturing medium-size and large trucks, where mass production was not feasible because purchasers had special requirements[109].

5. The period between 1930 and 1938

The American producers dominated the automobile industry in the 1920s, in 1929 making 5.3 million motor vehicles while output in the four large Western European countries was 682,000, just 13% of U.S. production. Toward the end of the 1930s the situation had changed. The European total in 1937 had raised to 1.1 million, 23% of the American 4.8 million vehicles[110]. The American decline was countered by the European growth of 62%. A major reason for this European improvement was the Great Depression, which in America went deeper and lasted longer than in most of Europe. In Britain it did not hit hard, and by 1934 the economy was climbing above its output of the late 1920s. The cycle in Germany was quite different, a very deep depression by

[109] Salazar, Carlo F. (1983), p58.
[110] Hounsell, David (1984) pp 249-253.

1932 followed by rapid emergence from this gap. The French economy slid into depression in 1931, and although France did not suffer a serious decline, significant expansion came only in 1939. Italy went through a minor contraction and, starting in 1935, experienced growth above the levels of the 1920s.

The advancing prosperity in Britain and Germany, and to a lesser degree in Italy and France, helps to explain the expanding automobile output. In economic terms, annually from 1925 through 1938 there was almost a perfect correlation between national product and motor vehicle production in Germany, Britain, France and Italy[111]. Also pushing higher output were lower car prices, with the adoption of mass-production methods in the later 1920s and to manufactures' increasing emphasis on small cars.

5.1 Britain

During the depression Britain experienced serious unemployment problems in certain locations and some industries but the economy as a whole did not suffer anything like the economic disasters in Germany or the United States[112]. Motor vehicle production dropped only 5.4% from 1929 to 1931 and then rose regularly, reaching more than double the 1929 level in 1937. British auto output overtook France and led Europe from 1930 on. The continued health of British economy kept strong the demand for cars[113]. Prices for food and other imported products fell, leaving more disposable income for middle-class people, who were the car buyers. The serious unemployment of coal miners and textile workers did not have a direct effect on the car market because these people had not received enough income when employed to purchase many cars. Production costs and car prices continue to decline as imported raw materials cost less and more efficient production methods were introduced. Exports rose as the pound sterling was devalued and as more countries discriminated against American competition by taxing cars[114].

It has been observed that when the average annual wage in a country first exceeds the retail price of a popular family car, the country has reached the point of takeoff for a

[111] Jones, Joseph (1984); pp 28-55.
[112] Boschma, Ron A. (2007) Pp 213-238.
[113] Rhys, D.G. (1972); p189-228.
[114] Barker, Theo (1987); p54.

rapid increase in car sales.[115] This does not mean that those who receive the average wage can now afford a car, but that the relationship of incomes and prices is such, that a large number of consumers can (and did) buy cars. This wage-price relationship occurred in 1929 in the United States; in Britain it arrived in 1935.

The concentration that characterized the British auto industry by the end of the 1920s, in which Morris and Austin together held 60% of the passenger car market, declined in the 1930s. The tow leading firms did sell more cars, but lost market share to four others – Ford, Standard, Rootes and Vauxhall. This surprising development came as a result of errors by Morris and Austin, as well as vigorous competition by others. British exports expanded in the 1930s, almost entirely to Commonwealth countries, where they paid a lower tariff than their American or continental competitors.

5.2 Germany

The rapid expansion of German motor-vehicle production in the 1930's stands out in the history of this industry between the world wars. At first, production fell sharply during the depression, back to the low level of the early 1920s. Then, from late 1932 the economy began to revive and the automobile industry rose with it for the rest of the decade. Motor vehicle output actually rose much faster than did industry in general, stimulated by the Hitler regime's motorization policy. Growth also came from investment by General Motors and Ford in their German subsidiaries and their vigorous marketing.

Economic recovery in Germany began with government public work programs. The Nazi government greatly expanded these when it came to power late in January 1933 with a massive road building and repair program, as well as the construction of public buildings in order to face the "millions of the industrial proletariat that are unemployed and starving"[116] . This policy aimed at cutting the very high level of unemployment and it did succeed, as almost a million workers were engaged in road and transportation construction in 1934.

[115] Chapman, Agatha, (1993); pp18-22.
[116] Adolf Hitler's speech of February 1st, 1933, Berlin. Source: Haffner, Sebastian (2010); pp 34-54.

When Hitler assumed the German chancellorship in January 1933, 34% of Germany's work force was unemployed. By 1936, before Hitler's rearmament program took hold of the economy, most of the jobless had disappeared from official unemployment statistics. Silverman[117] concludes that the recovery in Germany between 1933 and 1936 was real, not simply the product of statistical trickery and the stimulus of rearmament, and that Nazi work creation programs played a significant role[118]. This means that Hitler government's success in the battle for work represented more than a victory for the technical labor market policy. It marked a triumph in psychological and spiritual reconstruction.

One of the few specific estimates of the importance of government activities in the 1933 recovery, came from Reich economics minister Kurt Schmitt, formerly a leading figure in Germany's insurance industry. Schmitt estimated that up to a third of the improvement during 1933 resulted from public measures[119]. More important had been a real, broad-based improvement originating in the economy itself. Hitler also began rearmament program, but this required more planning and more caution in the early years because of its intentional risk. By 1935 rearmament was well under way and was one of the strongest forces pulling the economy forward. Road building, including the expressways or autobahns, indirectly encouraged the auto industry, but Hitler did more than this. In April 1933 his regime eliminated annual taxes on new motorcars, which reduced the annual expense of operating a car by 10 to 15%. Latter, industrial firms, farmers, businessman, and professionals received tax rebates on the purchase of new motor vehicles. Automobile sales had begun to climb late in 1932 and they shot upward in the following year. Employment in the motor-vehicle industry almost tripled from 34,400 in 1932 to 101,000 in 1935[120] and production of cars and truck rose almost five times in the same period – an expansion that continued until the war.

[117] Silverman , P. (2004); pp 12-25.
[118] Most of the authors on German economics, attributed some portion of the 1933-1934 recovery to measures of the government, but they consistently avoided any estimation of the size of that portion.
[119] Von Scherr-Thoss, H. C. (1974); pp. 50-63.
[120] Overy, R. J. (2005); pp 473-474.

5.2.1 The Volkswagen project[121]

Hitler made mass motorization one of his policies in Germany. Hitler's unofficial advisor on motorcar matters, Jacob Werlin, brought him together with Ferdinand Porsche in 1934. Hitler asked Porsche to analyze the feasibility of producing a people's car to sell at a price fewer than 1,000 marks. Hitler went ahead on this basis and asked the German Automobile Manufacturers Association to develop this project with Porsche as designer. The project had many delays and seeing that, Hitler in February 1937 assigned the Volkswagen program to the German Labor Front, the Nazi labor organization, with Porsche, Werlin and Bodo Lafferentz of the Labor Front. A small plant was established in Brunswick to begin making parts, and in a rural area east of Hannover the Labor Front began construction of a huge factory to build Volkswagens as well as a town to house the workers. To reduce costs and to raise public interest, the government decided that buyers would pay in advance for their Volkswagens by purchasing weekly saving stamps from the Labor Front and pasting them in a book.

Most of the historians argue that the Nazi regime's motorization policy was essentially a veiled program of rearmament. The autobahn construction program also has been characterized a military policy. The autobahns were more elaborate than the Italian autostrade. Government financed the autobahns (without tolls), and traffic was heavier than in the Italian case.

Evidence has not appeared that the routes were laid out for strategic reasons or that construction began on those with the most significant military use[122]. American experts that examined the system in the 1930s considered that it had primarily civilian aims rather than military ones, pointing out that some stretches of the road and viaducts were built to be as spectacular as possible, not hidden as military road would be. Though, latter in the war the autobahn tunnels and narrow cuts were used to shelter military productions facilities and to house war prisoners.

[121] Hopfinger, K.B. (1971); pp12-34.
[122] U.S. Strategic Bombing Survey (1947); pp 2-3.

5.3 France

The French automobile industry in the 1930s took quite a different route from Britain or Germany. Its output did decline during the depression to 1932. It revived thereafter but never surpassed its 1929 production before the Second World War. This evolution paralleled the movement of national economy, and the primary reason for the stagnation of the industry's output must be ascribed to weakness on the demand side. The industry's resilience was further weakened by a failure of the major firms to play the card of the very small car in this decade. Each one of them by 1935 had designed a very small model, but Citroen and Peugeot doubted to introduce these cars and persuaded Renault to abandon its efforts also. In the truck area of the market, French producers had great difficulties. Government budgets cuts meant smaller government purchases. Private firms were affected by an economy that discouraged capital investment and by 1934 legislation to reduce truck and bus competition with the railways.

The economy's failure to revive itself made the competition harder to accept, and the requirement that the government subsidize the railway's losses forced it to try to protect them from too much road competition. A decree-law of April 1934 stopped the creation of new bus lines or commercial truck services and encouraged the negotiation of local transport coordination agreements. These agreements provided that the railways would give up their short lines and investments in truck and bus firms and that the road haulers would renounce long-distance freight and passenger traffic. The continuing economic stagnation probably had a greater effect on truck sales in France than did the anticompetitive policy. Truck sales failed to reach the level of the late 1920s before 1938.

5.4 Italy

The Italian automobile industry suffered seriously in the early years of the depression. In the late 1920s about half its output had been exported, but the higher tariffs, and small import quotas set up in much of Europe in 1930 smothered most of this trade. Italian auto exports plunged from 28,000 in 1928 to 7,000 in 1933. Fiat, comprising about 85% of the industry had to react, because its production fell from 48,000 in 1929

to 19,000 in 1931[123]. Fiat's strategy was to introduce cheaper cars to expand the very limited domestic market and to move toward assembly and manufacture abroad to avoid the tariffs and quotas.

The low-priced models of Fiat, revived the Italian auto exports, which in 1937 rose close to late 1920s levels. The smaller cars were especially popular in Sweden, Switzerland and Britain, and several hundred even found their way to the United States. Italy's peak production year of 1937 surpassed its earlier record of 1926. Fiat models made in Germany by NSU/Fiat amounted to about 5,000 per year from 1937 to 1939[124], but in France Simca made at least 20,000 annually in these years. In addition to several models of cars, Fiat in the 1930s also produced a variety of gasoline and diesel trucks, aircraft engines and aircraft, and even small tanks. Its best years for trucks were 1936 and 1937, when it made a total of 17,600. Other Italian auto firms operated on a small scale.

[123] Bigazzi, Duccio (1987); p 77.
[124] Statistiche Jahrbucher fur das Deutsche Reich (1937-1939), pp 50-85.

6. Second World War

6.1 Germany

German regime expected that war would be a series of limited and short conflicts, so at first the motor vehicle industry sharply cut output of passenger cars but did not fully engage in war production. Great efforts did come in 1942 but even these did not require the full capacity of the industry. One of the biggest concerns was petroleum supplies. Specialists of the Reich state that there were no evidence of a systematic plan to devote the automotive industry to military ends, but rather a conversion by fits and starts. Sometimes this was due to unforeseen problems such as the poor roads in the Soviet Union that required more trucks and tractors that anticipated.

The German army comprised 165 divisions by the spring of 1940, of which 10 were armored, and 6 were motorized infantry. An armored division had around 250 tanks, 560 cars, 1,400 trucks and 1,300 motorcycles. A motorized infantry was assigned with 1,000 cars, 1,700 trucks and 1,300 motorcycles, while a standard division required 5000 horses, 600 to 1.000 trucks and cars and 500 motorcycles[125]. An impressive fact is that German army mobilized 2.7 million horses during the Second World War.

As German men were in combat, the Reich had to find new sources of labor to the automobile industry, such as women, foreign man and women, and in some cases prisoners, and Jews. This kind of unskilled workers shows how far the German industry had gone in dividing jobs into simple tasks. In 1944 the Daimler-Benz main factory, Untertürkhein[126], had about 15,700 workers, 5,300 of them were foreign and 1,200 were soviet woman. Evidence suggests that forced labor didn't play an important role in production, because the productivity in the concentration camps or prisons was about 10 times less than a regular factory, and the costs of transferring machinery to the camps or prisons did not compensate the saving of using non paid workers[127].

General Motors (Opel) and Ford lost the control over their German subsidiaries during the war. The Reich took over these firms and ruled them under local authorities. The

[125] Silverman , P. (2004), pp 12-25.
[126] Bellon, Bernard (1987), pp 77-96.
[127] We can find some of these evidences in the study made by Ferran Gallego, and expressed in his book: Gallego, Ferran (2006); pp11-31.

Opel's factory in Brandenburg assembled about 70,000 trucks throughout the war[128], while in the Rüsselsheim plant most of it was shifted to made parts for aircraft engines. The maximum wartime employment was 16,000 workers. Ford had built a plant in Berlin in 1939 to assemble trucks and to assemble armored cars, just before the war begun. At the Cologne plant, total production of Ford mounted around 80,000 vehicles. Ford and Opel had excellent facilities and consolidated experience at mass production, but none of their factories was converted to tank manufacture because of the Regime's suspicious about their foreign connections.

BMW had two plants in Eisenach were it produced cars, motorcycles and trucks, but curiously also the American aircraft engine Pratt&Whitney, licensed just before the war[129]. At Munich, BMW operations focused in their own aircraft engine development and also its production. Maybach had to stop producing luxury cars and produced most of the tank engines in the wartime. Due to the risk of depending on this single source, the Government contracted also Auto Union to make tank's engines as second source. The decision seemed right, because in 1944 the Maybach factory was completely destroyed by a bombing. Although other Auto Union factories produced motorcycles, cars, trucks and aircraft engines for the war artillery, the plants were never used in their full capacity. The MAN truck factory in Nuremberg also produced tanks, but did not resume its manufacture only to tanks. It also produced diesel engines for submarines.

The Volkswagen factory produced about 70,000 all-road vehicles, aircraft parts, flying bombs, mines and other items, but like Auto Union, it never operated at more than half capacity during the war[130]. Scholars wonder if this failure to convert to full military production seemed to have directly with Führer's desire to have the factory ready to make the Volkswagen car as soon as possible after the war. From other side, evidences of shortages, scarcities of machine tools and parts, and air raids were possibly the most important problems to these plants to achieve full capacity[131]. From August 1944 on, most of the automobile plants were damaged by air bombings. The usual time to a factory to recover its production varied from 2 to 12 weeks after the attack[132], which meant that only continuous air raids could keep them out of production. To evidence the

[128] Ludvigsen, K. (1975), p 24.
[129] Gilles, J. A. (1971); pp 32-55.
[130] Hopfinger, K.B. (1971); pp 12-34.
[131] U.S. Strategic Bombing Survey (1947); pp 2-3.
[132] Overy, R. J. (2005), pp 473-474.

consequence of the attacks, in the first quarter of 1944 Germany produced about 26,000 trucks, and in the last quarter of the year it produced only 12,000 due to the air attacks.

6.2 Italy

The prewar effort on producing light tanks did not end in the best way, because these tanks were no match for the British and American tanks they met in North Africa[133]. The Italian army had to reequip its armored forces with heavier and more powerful tanks, produced by Fiat and Ansaldo[134].

Fiat continued to increase its truck production, and by the time Mussolini joined Germany in the war, Fiat produced around 10,700 trucks in 1940, 12,500 in 1941 and 10,600 in 1942. The numbers of 1942 can be explained by the damaged cause by a series of British bombings raids on the major North Italian industrial plants. The recovery was slow and in February 1943 the production was still 40% of the normal output[135]. Workers took advantage of the prevailing defeatism to do a strike in March 1943, which spread throughout Italy. However, scholars point that the bombing played a major role in ending Italy's participation in the war[136]. When in July 1943 Mussolini abandoned the power, the German military forces took control of northern and central Italy. Fiat and other automobile companies continued their production for the rest of the war but at a reduced level.

6.3 France

Panhard and Renault made several armored cars, while Renault, Citroen, Peugeot, Berliet and other firms built trucks of various models. Engines for military aircraft came from Gnôme&Rône and Hispano-Suize[137].

The military motor transport plan by the French army was to increase the existing number of 60,000 vehicles, with 240,000 civilian cars and trucks requested and gradually retire the poorer civilian vehicles. In May 1940, French army received about 35,000 new vehicles, 7,000 of them came from the United States and even some from Fiat. In spite of this impressive number of vehicles, Germany moved faster in the

[133] Schreiber, Gehard (2007); p 66.
[134] Salazar, Carlo F. (1983), p 35.
[135] Nelson, W.H. (1967); p 137.
[136] Bigazzi, Duccio (1987), p 77.
[137] Gilles, J. A. (1971); pp 32-55.

conflict and prevailed in the May-June campaign, defeating France by its fault of planning and unaggressive leadership[138]. Defeated, France had to give about 700,000 cars and trucks to the Nazis, and its industry worked to fill German military needs. The occupied France's motor-vehicle production was very small compared with the prewar numbers. The main reasons were the shortages of materials, bombing attacks of the Allies and also resistance and sabotage by French workers and managers.

During the Occupation, in the French factories both owners and workers faced a complicated moral dilemma: working to fulfill the German army's needs meant helping France's enemy, but keeping the factory producing meant providing employment and income to workers, as well as less chances of the machinery be shipped to Germany[139]. The disappearance of most cars and trucks from French cities was a consequence of the German requisition for petroleum and motor vehicles, and life in Paris became difficult without many personal cars, taxis or buses. Those who lost their vehicles had to use the crowded Metro, but it became unreliable in 1944 and 1945 because the subway system depended on electricity, which was also scarce. Then, for personal transportation most people used bicycles or some of the existing horse taxis.

6.4 Britain

British rearmament began early, when in 1936 the Government decided that the country would need more engines and airplanes than the industry could deliver with its current facilities[140]. Britain began a program, building and equipping a number of new factories that could begin aircraft production quickly in case of emergency. Automobile executives were asked to manage most of these plants because the Government assumed that they had more skilled managerial personnel available than those of the aircraft companies. Austin and Rootes would operate airframe companies, while Daimler, Humber, Standard and Rover would manage engine plants making Bristol engines. All these were in production when the war began. Of the 100,000 Bristol engines made during the war, two thirds came from plants operated by automobile companies[141]. To meet an increasing demand for other types of aircraft engines, the Merlins, the English Ford company with Government funds built and equipped a new factory near

[138] Schreiber, Gehard (2007), p 80.
[139] Monnet, Jean (1976) ; p118.
[140] Idem, p210
[141] Rhys, D.G. (1972); p189-228.

Manchester. The British also contracted the Pakard Motor Company in Detroit to make thousands of these engines too. Rolls-Royce began producing jet engines in 1943 and although they proved to be inferior to the German jet fighters, this meant that Rolls-Royce gained a head start in the jet engine business.

Regarding tanks, the British army had few of them by 1939, consequence of a policy not to send a large army to the continent, of higher priorities for the navy and air force and of disagreements over the type of tanks to make[142]. Also, the few tanks produced in the first years of war lacked good engines. America helped to overcome this situation by building many tanks and supplying them to the British, as we can see in Normandy where two thirds of the tanks of the British armored divisions were American.

When the war begun, the War Office demanded civilian cars and trucks and had the supply from Canada with 386,000 motor vehicles during the wartime. The United States also supplied with 260,000, in addition to those 434,000 produced in Britain.

Chart 8: Automobile Production 1940 to 1944

	Trucks	Cars	Total
Britain	538,500	140,000	678,500
Germany	465,000	184,500	649,500

Source: Rostas, L. (1999), p46.

Chart 8 shows us how the output totals are surprisingly close to each other, and the aid from North America to Britain was almost balanced by the vehicles the Germans took from the occupied zones. With a smaller army, the British forces were much more motorized than Germany during the war. British automobile industry also produced all sorts of military equipment, as mines, agricultural tractors; aircraft repair machines and small artillery.

With the proliferation of multinational companies, a particular aspect of the Second World War industry occurred. The same companies in different factories produced

[142] Laux, James, et Al (1982); pp. 144.

equipment on both sides of the conflict. There were German and Italian-owned firms producing to Britain and the United States, as the case of Bosh in Germany and Fiat assembly plant in Britain. Also General Motors/Opel and Ford went through the same situation[143].

7. Recovery of the World War

Most of the industrial plants across Europe suffered from air bombings, but the costs of repairing roofs and walls were usually cheaper than the complicated machine tools that were the most expensive part of an automobile industry. Fortunately it was necessary that a bomb hit directly the machine to destroy it, so even though the factories seemed seriously damaged many machines were intact.

Germany, Britain and Italy actually had more machine tools at the end of the war than at the beginning[144]. Britain made many tools during the war and received also many from the United States, while in Germany the number of machines rose from 1.5 million to 2.3 million during the war, were the German regime took about 80,000 machine tools from France and other occupied countries. After the war, Germany lost many machines as war reparations and some 58,000 machines have been destroyed by allied bombings. France ended the war with fewer machines and those who were left were already obsolete. All the countries faced several complications with raw materials, especially steel. The recovery years also faced a new management challenge, where persons like Austin, Peugeot, Citroen, Renault, Porsche and many others were departing, leaving the their companies to new managers[145].

7.1 Britain

After the war ended, the automobile companies were still under Government's control. With the Labor party leading, it required that the automobile industry should export a higher proportion of their production in order to obtain more foreign exchange. To enforce this policy, government allocation of steel was proportional to the amount of

[143] Friedson, P. (1978); p 146.
[144] Overy, R. J. (2005); pp 473-474.
[145] Hanf, Reinhard (1980); pp 18-46.

exports, or in other words, who exported most would have more steel. Because of the characteristics of the American cars (expensive, heavy and too big), British carmakers were welcome in the world markets. Exports rose also because in many countries new cars were not available since 1940.

This initial success had however a drawback, because the only cars that the British firms had available for export were those designed in the 1930s for domestic service (designed for slow speeds and good roads). The hard usage these cars experienced and the inadequate service facilities overseas brought them a poor reputation, making them vulnerable to the competition of the German manufacturers[146].

7.2 France

Some of the war benefits that France profited were the 50,000 military vehicles that the United States left, and were sold by many auto makers and dealers[147]. In other hand, the French automobile industry had to overcome some damage problems and to solve ownership issues. In the Vichy regime and after the war, government economic planning had to allocate scarce resources and improve efficiency. The Pons Plan of 1945 made by the Ministry of Industrial Production, aimed to concentrate production among fewer firms and have them specialized in certain segments of the market but this plan never worked as desired[148]. While Peugeot's tasks were to rebuild its physical plant and then find steel, Renault went through a complex change of ownership and management style. Lois Renault was arrested with the charge of dealing with the enemy; the President Charles de Gaulle requisitioned the Renault factories and ordered the nationalization of the company[149]. In order to justify the public ownership of Renault, the new administration hoped to make a "people's car" as soon as possible, despite the pressure for exports to earn the foreign exchange France needed. Soon the small car was available, the Renault 4L, and it was ready for the post-war market. With a new model the company showed more vigor, it enabled it to focus more on motor vehicles.

[146] Llloyd, Ian (1988); p 219.
[147] Schweitzer, Sylvie (1982); pp 56-57.
[148] Bardou, Jean-Pierre (1982); pp54-112.
[149] The Michelin, Citroen and Peugeot also sold products to the Germans during the war, but there were no efforts to punish their owners.

Citroen continued to make the same vehicles that it had produced during the Occupation but introduced the 2CV model, more adapted to the new needs of the French population. Like other French companies, Simca began by turning out its prewar models by equipping the factories with new machinery with the aid of the Marshall Plan. By 1949 French motor-vehicle output had made its recovery and the structure of the industry had changed little, except for Renault[150].

7.3 Germany

Germany was discouraged by the occupying powers to have a rebirth of its industrialism, and together with shortages of raw materials and destroyed transportation networks, industry and especially automobile production had a slow recovery after the war[151]. From the market side, the population suffered from the allied attacks and many persons had lost their financial capacity even to buy food[152]. Also the German producers didn't have the capacity to offer a large number of small and cheap cars.

The Brandenburg plant of Opel was lost. The factory was taken over by the East German regime and the machinery was shipped to the Soviet Union. Managing to overcome the years of weak economic situation and the lack of support of the Nazi regime, in the 1950 economic boom Opel made some 73,000 vehicles, five times more than the output of 1948[153]. The plants of Auto Union were all destroyed not because of the bombings but due to the newly designed East Germany where the auto companies were taken by the regime. Auto Union continued its production but in a smaller scale.

Although Daimler-Benz facilities were one of the most destroyed in the war, slowly it managed to restart production with 214 models in 1946 and 831 in 1947[154]. The numbers progressively grew and when the Marienfelde plant in Berlin was rebuilt, Daimler-Benz produced 34,000 cars and 8,500 trucks in 1950.

Volkswagen was the company that emerged from the war. The main factory was in the British zone of occupation and at the beginning there was no strategy to continue the

[150] Sée, Henri (1936), pp. 32-34.
[151] Gallego, Ferran (2006); p 87.
[152] Haffner, Sebastian (2010); pp 34-54.
[153] Ludvigsen, K. (1975); p 45.
[154] Statistiche Jahrbucher fur das Deutsche Reich, Berlin (1946-1947); pp 50-85.

production, but after some repairs and to have realized that the factory could provide jobs for the refugees in the area, the British decided to continue the output of the original Volkswagen cars. Already in 1947 the company was able to supply 20,000 cars to the British forces, to the United States, to the Soviet Army and also to the local German officials[155]. Since the Volkswagen was the only cheap car available in the market, the sales rose and the production in 1950 reached 90,600 cars. Despite the huge original investment, Volkswagen did not have to pay interest or dividends, so it could reinvest its profits in equipment repair and renewal. This was the only way to finance investment, as banks hesitated to lend money to these uncertain enterprises.

Volkswagen was the output leader in Germany since 1945 and the country reached prewar production in 1951 thanks to Volkswagen[156]. The West German economy began to revive rapidly when most price and production restrictions were ended and there was a major currency reform. By 1951 the industry gained its prewar level of output, two or three years after the other major continental producers.

7.4 Italy

With its auto industry based in Fiat, the recovery in Italy was quite slow. After the war ended and the Germans withdrew from Turin, the Fiat leaders were accused by the local liberation committee of collaboration with the Nazi regime[157]. The executives were moved from their positions and replaced with a committee of new managers. Communists and socialists movements were trying to carry out a nationalization of Fiat and other major industries. For many reasons that did not happened, probably one of the major reasons was because Italians had already experienced trough Mussolini some company's nationalization and realized that this policy did not deliver the utopia it promised. The new management committee had difficulties finding materials to expand production and needed to maintain the huge wartime level of employment.

[155] Hopfinger, K.B. (1971); pp12-34.

[156] Regarding the Volkswagen leadership, Heinz Nordhoff, former Opel executive and the manager of Volkswagen at the time stated "*by one of those ironic jokes history is sometimes tempted to produce, it was the occupation powers that brought Hitler's dream into reality*". Source: Hopfinger, K.B. (1971), pp12-34.
Another irony of the European in the XX Century was that one of the biggest intellectual forces that emerged from the II World War in Europe was not the traditional British liberalism but the Ordo-liberalism from a forgotten University in Germany – Freiburg; as stated by Rodrigues, Eduardo L. (2008), p47.

[157] Schreiber, Gehard (2007); p12.

Later, the charges against the old managers dropped and they returned to Fiat, except for Agnelli that died in December 1945. Fiat suffered from a series of strikes that weakened the production, made by the communist's labor movements that were fearful of the American economic aid and influence[158]. As in other countries, the shortages of raw materials held back the automobile production and Italy was no exception. With the Marshall Plan aid, the conditions improved considerably and in 1949 the Italian production output regained the prewar levels. Because of the lack of variety in Fiat models, firms like Pininfarina, Bertone and Ghia start offering distinctiveness to these cars with a higher price. Their designs began to be famous and soon appeared other European and American companies that contracted them for designing new models.

8. The period between 1950 and 1970[159]

The second post war period saw the creation of a new world economic order, through international economic cooperation and internal economic policy that aimed to achieve stability and even prosperity, much like the *belle époque* period was. This period saw also the revolutionary socialists (or communists) that intended to recover, consolidate and expand the countries were socialism was growing. It was also the period where the least developed countries fought for their freedom from colonialism and aimed at economic development[160].

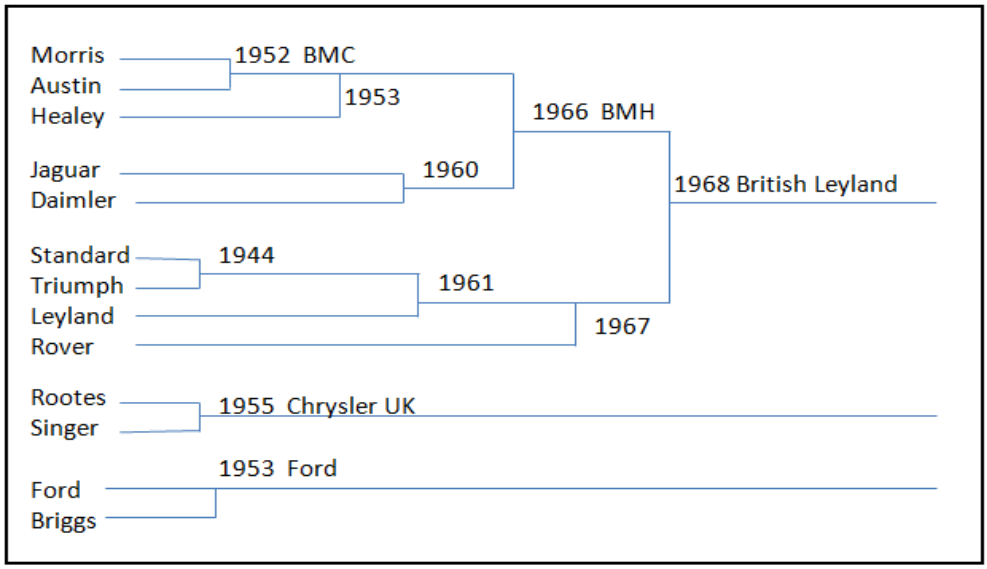
8.1 Britain[161]

The British motor-vehicle leadership achieved in the immediate postwar years, was lost in the 1950s and its growth began to lag behind Europe's other major producing countries. One of the reasons was the low reliability of British cars when submitted to intense usage, leading to frequent repair problems and weak service arrangements. The American and Australian market began to fall and other European countries also decreased their demand for British cars.

[158] Ortaggi, Sirmonetta (1998), p45.
[159] Laux, James M. (1992); p180.
[160] Valério, Nuno e Nunes, Ana Bela (2004); p 157.
[161] Llloyd, Ian (1988); pp 76-84.

In the home market, the two largest British firms Nuffield and Austin merged in 1952 creating the British Motor Corporation (BMC), claiming that would bring efficiencies of scale and would defend against the growing English Ford and Vauxhall. The BMC production plants were reorganized to produce more cars although with the same traditional machinery. The failure to invest heavily in new types of machinery continued a policy of British-owned firms and it was the key to the latter difficulties at BMC. Noteworthy was the creation of the model Mini by BMC, which was introduced in the market in 1959 having a great demand at home, where the consumers continued to have preference for small cars. In the export market it also won popularity and most of the manufactured models were to export. However, due to poor cost accounting the car did not generate the profits it should have had.

Chart 9 - Acquisitions and Mergers in the British Automobile Industry 1944-1968



Source: Laux, James M. (1992); p180.

The chart shows the period, in Britain, when automobiles sales didn't grow and the smaller firms didn't have the capacity to offer new models at competitive prices. This period saw a series of mergers among the British-owned automobile companies. Through these mergers and acquisitions (many encouraged and subsidized by the British government[162]) in 1967 the British Leyland Motor Corporation was formed. The

[162] McLaughlin, A. and Maloney, W. (1999), p46.

new company at this stage was ranking the 5th largest automobile firm in the world after the American Big Three and Volkswagen. Ford proved to be the most successful automobile firm in Britain from the 1950s to the 1970s. The Americans encouraged it to have its own engineering staff and to hire academically trained staff, unlike BMC. The firm in 1967 reorganized its operations in Europe into one single company – Ford of Europe. It was a merger between the British and German firms because the trade barriers in Europe were shrinking. Ford of Europe would have one line of vehicles for the entire continent, with the design and manufacturing being made in the places where it could be done more efficiently. The Cortina model, completely designed in England, was very successful and it became the company's largest seller in Britain trough 1987 with 4.3 million, behind BMC Mini's 5.1 million.

Rolls-Royce emerged from the war as a manufacturer of jet engines. For several years it did not had competition from Germany or France, and it also took over the British competitors through a series of government encouragements. Despite the subsidies, Rolls-Royce went bankrupt in 1971 and it was nationalized by the government. After two years of government ownership the company was sold to private investors and it continued the jet-engine production along with a small output of cars, about 2,000 annually. The estimated loss for the government with the Rolls-Royce sale was enormous.

The British auto industry had suffered since the 1950s from a high incidence of labor disputes. Governmental measures are one of the main reasons behind those disputes. In order to try managing consumer's spending at national level, British government was constantly changing the rules on hire/purchase (installment sales) and the purchase tax also (the sales tax on consumer goods). These constant changes affected sales in a serious way, and made the production schedule a complicated calculation for the auto industry, especially in what regards labor force. Unemployment turned to be unpredictable because the sudden shifts in production and the increase in the salaries only gave more power to the labor unions. They were claiming that the workers should earn as much as they can because it no longer should take consideration for a long-term or loyalty relationship with their companies. The labor strikes may have had some effect on investment decisions and exports, but scholars claim that wrong management

decisions in export and marketing probably accounted more to the weakening of the British industry[163].

The British auto industry in the 1970s was suffering from an output decline, and its size was not bigger than it was a decade before. The internal demand for automobiles was rising continually and it was met by imports which rose to 30% of the sales in 1973.

8.2 Germany (West Germany)[164]

Due to a continued rise and fast pace of its auto production, Germany auto industry's output in 1953 surpassed the prewar production. Exports explain these numbers where in 1971, 58% of the production was to exports, having America as a large buyer with a share of 38% of those exports. The Volkswagen winning combination in America was the reliability, a good network of dealers and repair stations and, the most important: the low price of its Beetle model.

As stated in the last chapter, Volkswagen dominated not only the German market but also the export market. It built new factories in Hannover and Emden, and continued to be the largest seller in the middle-class sector in Germany, despite the efforts of Opel, DKW and Fiat. In 1961 Volkswagen was producing about 5 million cars per year and in 1963 it was reaching the impressive output number of 10 million cars per year[165].

Opel was beneficiated with large sums of investment made by the General Motors' Headquarters in America, in order to build new facilities and to expand the business in Germany. American managers were brought from the United States to operate these new facilities and in terms of strategy Opel chose to target the middle market, between the Volkswagen models and the Mercedes-Benz ones.

Comparatively, Ford expanded more slowly than Opel in Germany, mostly because of the lack of a European strategy where the factories in Britain, Germany and France were producing cars with non interchangeable parts. In 1964 Ford established a new plant in Belgium and started to create the Ford of Europe, encompassing the British and German

[163] Coates, D. (1996), p98.
[164] Von Scherr-Thoss, H. C. (1974); pp50-63.
[165] Hopfinger, K.B. (1971), p72.

operations in order to bring more integration to the different plants, assembly lines and even the car's models.

Daimler-Benz dominated the upper range of the German market until the 1970s. The upper class niche didn't had models that fitted in their lifestyle and Mercedes-Benz models offered a strong engineering, solidity in the construction and a clear image of quality. This allowed Daimler also to invest in exports and the sales rose not only in the car models sold to the Americans but also in its trucks and buses. Daimler also established its own network of dealers in the United Sates, after a failed attempt to deliver the distribution of its Mercedes-Benz cars to local distributors. In 1969 Daimler was already selling about 30,000 models to the American market, and the numbers continued to rise in the following years[166].

From the smaller automobile producers in Germany, only few remained in this period of economic expansion. Two main examples: DKW was absorbed by Auto Union that after some years was bought by Volkswagen, and NSU resumed only to the motorcycle manufacture and was bought by Auto Union that latter also disappeared. In 1955 the BMW Company returned to Munich and after some acquisitions and mergers with German-owned companies, BMW moved its production to more conventional cars with large engines[167].

By the 1970's Germany had three volume carmakers – Volkswagen, Opel and Ford[168]. Mercedes-Benz and BMW were targeting the high-price category and Porsche for wealthy consumers. In terms of economy, Germany began to slow down from the earlier numbers, imported products began to appear on the domestic market, and overall costs rose. The exchange rate of the Mark to American Dollar rose 40% from 1969 to 1973, causing damages to the exports. It made the German cars much more expensive in the American market, specially the Beetle model because it lost its competitive price. The labor relations on German auto industry went more smoothly than in Britain, Italy or France. Industrie Gewerkschaft Metall was a large and very strong union; together with the worker participation in the economy decisions, this probably accounts for the

[166] Oswald, W. (1986), p139.
[167] At the time the most important model was the Isetta bubble car, a three wheel car powered by a motorcycle engine
[168] This somehow contrasts with the goals of the Allied Forces after the War that was to break down the cartels formed by the III Reich. However, we can find an explanation to this fact due to the continuous influence of the Ordo-liberalist thinking in Germany's political and economic decision-makers, as a result of the increasing importance of the Freiburg University. See Rodrigues, Eduardo L. (2008), p44.

absence of severe friction in the German automobile firms, even in the wake of the technological changes that caused so many labor difficulties in Britain.

8.3 France[169]

In the post war years, Renault continued to lead in terms of output, and nationalization had eliminated private stockholders who might have encouraged management decisions to favour short-term profits more than long-term strategies.

After the Communists left the coalition government in France in 1947, the CGT union at Renault ended its cooperative attitude toward management and became demanding and obstructionist. The Renault had to deal with a new kind of arrangement between labor and management, towards a more traditional adversarial relationship.

Early in the 1957 the French government concerned about a deteriorating balance of payments, asked the automobile industry to rapidly increase exports. The Renault Company started it effort to ship as many cars as possible to the United States, but like the British experience, the cars designed for Europe did not handle the rough American usage. A poor investigation and planning, together with weak networks of service and dealers had the consequence of making a bad reputation of French cars in the American consumers[170]. Despite the failure in America, in 1962 the West Germany became a large importer of Renault in Europe, but Spain was Renault's largest European market outside France. Renault expanded its models, covering the low-and middle-price range and the upper-price range as well. This was due to a large investment made by the French government, and as being the only shareholder of the Company it made a public issue of shares and received a return in dividends. Other industry companies angrily denounced this as an unfair subsidy.

Peugeot stayed with one model in the middle-range and its strategy was to build a reputation of reliability. The company began introducing a new model every five years from 1955 on, keeping each one in production for about 10 years. Peugeot was very conservative regarding exports seeing it as only a matter of keeping the domestic factories busy and bringing some economies of scale. To spread the risk of fluctuations

[169] Schweitzer, Sylvie (1982), pp70-97.
[170] Rostas, L. (1999), p34.

in foreign markets, it shipped cars in small numbers to about 100 countries in the 1950s, rather than concentrating on few countries and investing in production plants, car dealers and service systems. In the middle-1960s, coinciding with Jean-Pierre Peugeot death, the firm decided to move to a multimodel policy and a more rapid expansion. In its expansion Peugeot began to cooperate with other French firms, and from 1963 to 1965 it worked with Citroen on joint purchasing and producing certain parts. After suspecting that Citroen wanted to take over Peugeot, the firm ended its relation with Citroen and began the same cooperation with Renault establishing a joint factory and with Volvo by sharing many of the engine components. By the 1972 the firm had a range of five models extending from the low-and middle-price range and became the sixth largest producer in Western Europe.

The Citroen expanded by taking over Panhard&Levassor in stages, and in 1968 the sports and luxury car Maseratti of Modena[171]. In that same year François Michelin committed Citroen to a major change, the company's sales and earnings had slipped because of the strong competition from Renault. François Michelin and Gianni Agnelli of Fiat agreed to have Citroen and Fiat to coordinate their activities to better compete on the European market against General Motors and Ford. The plan was that Fiat would invest funds in the Citroen operations and probably it would soon take over Citroen. President Charles de Gaulle refused to permit such step, but the companies did work together for some years, although the sums involved were less than the planned ones. In 1973 the cooperation ended because Fiat didn't find the Citroen's people cooperative anymore and thus decided the rupture, selling the Citroen´s shares again to the Michelin family. Despite the sale Citroen still needed a financial recovery especially because of the first oil shock, and in 1974 Peugeot agreed to take over Citroen while Renault took over Berliet. The French government gave large loans to these mergers in an attempt to raise the domestic automobile industry[172].

[171] Corlin, Georges (1985) ; p470.
[172] Holmes, P. and Smith, A. (1995), p23.

8.4 Italy

Fiat continued its prewar efforts to export to the rest of Europe, and it revived its operations in Germany (NSU/Fiat); in France with Simca; in Spain with a new company in Barcelona (Seat, with 51% owned by Fiat[173]), in Austria and in many Latin American countries. Fiat also expanded its production of trucks, aircrafts and ships. In 1965 it produced 1million cars for the first time. Fiat also signed an agreement with authorities in the Soviet Union to build and equip a very large automobile plant at Tolyattigrad[174]. Most of the plant's machinery was imported from Western Europe and America, and a large share of it was financed by Italian government. The Soviet agreement was followed by others in which Fiat equipped smaller factories in Eastern Europe to make version of Fiat cars in Poland, Yugoslavia, Bulgaria and Romania.

Fiat had no difficulties in the domestic market as Alfa Romeo and Lancia were bought by Fiat in the middle 1960s. The labor problems of 1969-70 had the consequences of changing the Fiat's strategy. Fiat decided to reduce the amount of semi-skilled labor in its factories by introducing more automation and robots. Imports were the only concern, as they rose 21% in 1966 and 34% in 1970 – although imports cut Fiat's share of domestic market, Fiat remained a powerful firm by leading Europe's automobile industrial production in 1972 and 1973[175].

9. The period between 1970 and 1990

Seven major firms dominated the European mass-market for cars in the early 1970's: Volkswagen, Fiat, Renault, Peugeot-Citroen and British Leyland, along with the United States multinationals General Motors and Ford[176]. They faced an unprecedented fact: to share a market that was not growing as fast as the 1960s, and through the 1970s and 1980s the American multinationals and Japanese imports would gain market share.

[173] Craveiro, Nuno (1999), p88.
[174] Baxter, William P. (1973), p232.
[175] Laux, James, et Al (1982), p155.
[176] Rostas, L. (1999), p56.

9.1 Britain

Although every major European-owned volume car producers went through a complicated period in the late 1970s or the 1980s, all emerged to larger profits by the late 1980s, except British Leyland. The British government always guaranteed the necessary loans to British Leyland, and when the period of crises became a reality, the government subsidized with very large sums the modernization of British Leyland. These investments had little effect in the firm's sales and nationalization started to be discussed[177]. The alternative was to accept the unemployment of almost 1million workers and the closure of an important firm in the British industry. The government decided in 1975 to nationalize the company and changed its name to BL. Nationalization did not bring the desired outcomes and BL was still weak in terms of financial results, despite the continued efforts (through subsidies) of the British government.

At the time, one of the Thatcher government policies was to sell public companies to the private sector, where they believed they would be more efficiently operated[178]. The once successful British Leyland truck division was set up in a joint venture with the Dutch truck maker DAF in 1987, after the government cancelled its debts. During its 14 years of British Leyland ownership, the British government paid a total of 5.4 billion dollars in subsidies, BL adopted a new name, Rover Group in 1986 and the Thatcher government finally sold it to the British Aerospace in 1989 for 280million dollars after paying another 1.5billion dollar in Rover's debts. The European Economic Commission sued the transaction with British Aerospace[179] as involving unfair subsidies, so the government had to reduce them by several hundred million dollars[180].

In 1990 Honda and Rover came closer, with the Japanese firm becoming 20% owner of Rover and 20% of Honda in Britain going to Rover. Great Britain in the early 1990s was the major portal through which the Japanese car makers entered Europe and thus the European Community[181]. This is one example how the British car industry by the 1990s had become largely foreign owned and controlled. Weak management from the

[177] Boschma, Ron A. (2007); p214.
[178] Woolock, S. and Wallace, H. (1995), p87.
[179] British Aerospace had been another nationalized concern for the British Government, but after its privatization in 1981 it had prospered progressively.
[180] Lopes Porto, Manuel (2001), p280.
[181] Grant, W. (1992); p60.

1930s on could explain this. Its failures were in many aspects: poor recruitment and training of engineers and other management personnel, a very low level of effective investment, amateurish foreign marketing and inability to manage the firms[182].

9.2 The American automobile producers in Europe[183]

The most international of the major producers in Europe were General Motors and Ford, with important production facilities in Germany and Britain. Chrysler tried to follow this path in Europe in the 1960s when the market was growing much faster than it was in America. But Chrysler's operations did not went as expected and just six months after the British Government had bailed out British Leyland and nationalized it, in November 1975 Chrysler (that was based in Britain) announced that either the British Government had to take over the company or it would be closed[184]. Fearful of the job losses (around 25,000) the government urged a solution – subsidies and loans in the amount of 300million dollars. Nevertheless, sales continued to drop and Chrysler sold the entire European holding to Peugeot in 1978.

Ford expanded in Europe in the 1970s, and Spain was the main target because it had one of the most rapidly growing markets despite Franco's regime strict legislations (no foreign firm could own over half of Spanish company, local content had to amount to 95% of a car's value and there was a 30% tariff on imported parts). Ford tried for several years to negotiate its entry and to put aside the tight regulations, in order to establish a base in Spain before it joined the Common Market. The Spanish government and Ford managed a compromise putting away the complex restrictions that existed for foreign companies (the negotiation managed to maintain 100% of the ownership to Ford through its Spanish subsidiary, its cars would have 66% domestic content and the tariff on imported parts would be 5%).

In the 1970s the center of Ford design and development of cars shifted to Germany, where it had more well-trained engineers. At the same time productivity in Ford's English factories declined, while in Germany it rose. The many labor disputes in the

[182] It is interesting to note that to manage and recover BL-Rover the government twice went to persons who had come from abroad – Michael Edwards from South Africa and Graham Day from Canada.
[183] Rostas, L. (1999), pp85-93.
[184] Baumgartner F., and Jones B. (1993), p4.

English plants were some of the causes. Nevertheless, Ford didn't give up on manufacturing in Britain and with substantial government subsidy it began building a new plant in South Wales. In the 1980s productivity began to rise in Ford's British factories, when workers and managers put aside their mutual distrust and set up joint committees to solve problems.

General Motors revised its European strategy in 1979. All Vauxhall cars in Britain were Opel, with the Vauxhall badge on them, fully built up in Germany, Belgium or Spain; or assembled in England. General Motors also expanded its marketing effort in Spain and France. When Eastern Europe opened to Western firms, General Motors moved aggressively while Ford held back. General Motors' sales were climbing in Germany, where Opel was challenging Volkswagen for leadership. GM needed more manufacturing capacity and decided to move to Eastern Europe[185] (Hungary and Poland) where it might lead to increasing sales. These assembly plants began operating three shifts a day to meet the demand for cars.

9.3 Italy

Problems abounded for Fiat in the 1970s. Sales fell as fuel prices rose, efforts at even more diversification did not appear to be successful, foreign investment had not paid off and labor problems did not improve despite large concessions on payment issues. In order to sustain the firm, in 1976 Fiat announced a deal[186] with Libyan Muammar Qaddafi to sell him 15% of Fiat's equity much above the market price for these shares and Qaddafi would receive representation on Fiat's board of directors[187]. Fiat also changed its board of directors and with a new management Fiat rebounded in the 1980s with new models, improving productivity and quality. The company started to generate profits, while it withdrew from the American car market and gave up its investments in the Spanish company Seat in 1980. When the Italian government tried to sell Alfa Romeo to Ford, Fiat reacted strongly. Although Fiat's bid was lower than Ford's one (especially because it provided for Fiat the payment only in 1993) the government had no real option. Italian consumers probably would benefit from a strong domestic

[185] Baxter, William P. (1973); p260.
[186] Schulze, Reinhard (2000); p192.
[187] Due to the terrorist and mafia problems that were threaten Fiat itself, Gianni Agnelli years later regretted and subsequently reversed this step.

competitor to Fiat, but in the Common Market Fiat already was facing vigorous competition in Italy. Fiat took over Alfa Romeo in 1986 but the European Economic Commission concluded that a large subsidy the Italian government paid to Alfa Romeo before the takeover violated fair competition in the Common Market and that Fiat had to pay it back[188].

From the late 1970s to the late 1980s Fiat's overall labor productivity in cars almost doubled. It managed to become both a volume and a specialist car maker, with the Alfa Romeo brand for sporty cars and Lancia for luxury, like Volkswagen with its Audi brand.

9.4 Germany

Volkswagen gradually phased out its Beetle model in the 1970s. It competitive situation in the United States crumbled, while Toyota and Nissan alone increased their American sales by almost exactly the number that Volkswagen lost.

Volkswagen operations in Brazil were troubled by that government's financial mismanagement and in 1986 Volkswagen and Ford merged their operations in Brazil and Argentina into a joint venture called Autolatina. Production and sales were strong, but financial results were still weak due to the corruption complications in those countries. Volkswagen also took over the Seat Company in Spain. The Spanish government desperate to load Seat, paid off Seat's 1.7billion dollars debt and promised to invest 500million dollars more and pay the pensions for 4,500 surplus workers in return for Volkswagen taking control and investing another 500million dollars[189].

At the domestic market Volkswagen maintained production and leadership in Germany but suffered problems in the early 1980s[190]. Volkswagen gained a little more freedom of action in 1988 when the federal government of Germany sold its remaining 16% stock to the public, having more flexibility in moving manufacturing operations outside Germany and discharging surplus labor.

[188] Based on what John Vickers could summarize when stated that "The Treaty has a basic principle that state aid which distorts or threatens to distort competition will be incompatible with the common market", quoted by Rodrigues, Eduardo L. (2008), p242.
[189] Dancet, G and Rosenstock M. (1995), p13.
[190] Kugler, Anita (1987), p278.

Volkswagen expansion investments included new dealers in Czechoslovakia, a new plant in Spain, a joint venture with Ford in Portugal[191], an assembly plant in Changchun in China and also in Mexico. Although Japanese cars were taking 15% of the West Germany market by the middle 1980s, Volkswagen was willing to work with Japanese firms. It licensed Nissan to make a Volkswagen model for sale in Japan and arranged to make Toyota pickup trucks in Germany with a domestic content of 50%[192].

Daimler-Benz quality engineering and manufacturing along with good marketing and service, won its strong reputation throughout the world. In Europe, its best export markets were large countries, including Spain. Japan also emerged as volume buyer of Mercedes-Benz cars in 1989. Nevertheless, Daimler-Benz primary importance was trucks and buses (it was already leader in diesel technology) where it became the world leader as tariff barriers fell. Daimler-Benz also decided to diversify into other areas in the 1980s, acquiring the equipment firm AEG, the jet-engine maker MTU and the aircraft manufacturer Dornier. In 1990 it reached an open-ended agreement with the Japanese conglomerate Mitsubishi to cooperate closely on industrial activities.

The BMW firm began to grow rapidly in the 1970s selling largely in Germany first, then to the rest of Europe and Unites States. In the late 1980s 40% of BMW's output was sold in the domestic market, a similar share in Europe (outside Germany) and around 15% in the United States. Offering quality at high prices like Mercedes-Benz, it found there was room for both companies.

9.5 France

Renault sell well in the 1970s as it had several, fuel-efficient models. Despite this, in the increasingly competitive market of the 1980s, Renault began to have problems in Europe. To maintain its market share in cars, it had to cut prices. Labor costs could not be cut, as labor began to be an obstacle after Socialist François Mitterrand was elected President in 1981 and installed a Socialist cabinet with Communist participation. The results were large deficits in Renault that put its management in risk when Mitterrand regime changed its policy from traditional socialist nationalization and welfare toward a

[191] Craveiro, Nuno (1999), p58.
[192] Ikeda, M. (1985), p34.

more freedom of enterprise[193]. Renault's president had to resign in favor of Georges Bess, a tough businessman that in two years made Renault return to profitability but lost important market share in Europe. In 1987 the government decided to convert Renault from a *régie* to an ordinary stock corporation, with the government holding all the shares. The major obstacle was the large debt Renault owned to state banks, about 2billion dollars. The government proposed to cancel this debt (which would amount to a subsidy[194]) and in return cut production capacity in the assembly plants. After long negotiations, the European Economic Commission and the French parliament agreed to change Renault's legal status[195].

France's other major firm Peugeot, grew to world importance after its Citroen acquisition and in 1977 with the acquisition of Chrysler European operations. Despite its size, Peugeot did not have small cars to meet the shift in the market in the 1980s after the second oil shock, so its sales drop severely. This required temporary lay-offs and vigorous efforts to make permanent employment reductions[196]. The output hit the lowest figures in 1984, but in that year Peugeot began to revive financially, at the same time Renault was in its most difficult years.

For decades Peugeot cars sold very well in Africa, but Japanese competition intensified there. Several times Peugeot launched market attacks in the United States but failed to take many sales from the Japanese or other European automakers. As 1980s ended, six volume car producers remained in Western Europe[197]. All had become profitable again after the difficult restructurings forced by the end of the market's long expansion. The increasing competition had required them to shed labor and plants, introduce more mechanization and raise quality, as they saw the Japanese as their main threat in the 1990s.

[193] Delors, Jaques (2004), p156.
[194] Woolock, S. and Wallace, H. (1995), p98.
[195] Greenwood, J (1997); p117.
[196] White , Harry D. (1983), p. 244.
[197] Peugeot-Citroen, Renault, Ford, Volkswagen, Fiat and General Motors.

10. Conclusions of the Automobile History in Europe

Some historians characterize the period from 1948 to 1973 as being "La Deuxiéme Belle Époque" because the average growing rate of the European economies was 4.9%[198]. The European automobile industry had an historical growth from 1950 until the first oil-price shock in 1973. Taking into account the production figures of Britain, France, Germany and Italy (the biggest European auto makers), the total output rose from 1.57 million in 1950 to 11.67 million in 1970.

The growth in the auto industry followed the path of Western Europe's postwar economic expansion, where the auto companies continued their investment in small and cheap cars. Although, as soon as European personal incomes started to rise continually[199], the small and cheap cars were slowly changing to larger and powerful vehicles, in order to respond to the new generation's demands. Regarding exports, the automotive sector was again selling vehicles to North and South America, Africa, Asia and within Europe when in the 1958 the European Economic Community began to function and the customs barriers began to shrink. Before, the tariffs on imported cars ranged from 17% on West Germany to 45% on Italy but after the European Economic Community these restrictions began gradually to fall, and a common external tariff of 17.6% was introduced in order to protect the internal markets.

From the consumer's point of view, it was better since the competition in prices made the cars cheaper and improved technology and reliability. From the industrial's point of view, they benefited from the new markets that were open and also the advantage of economies of scale. With tariffs and other restrictions limited or eliminated among the West European states by the 1970s, a multinational could move some aspects of automobile manufacturing among its plants in several countries to take advantage of currency exchange rates, labor costs, and productivity. However, that was not a reality because of the heavy expenses and disputes from lay off workers, and also by the need of keeping costly machinery operating.

[198] Rodrigues, Eduardo L. (2008), p259.
[199] Mendonça Pinto, A. (1999), p45.

Chart 10 - European Automobile Production 1950-1973 (in millions)

	1950	1954	1958	1962	1966	1970	1973
Britain	0.784	1.038	1.369	1.689	2.053	2.098	2.164
France	0.357	0.600	1.128	1.537	2.024	2.750	3.596
Germany	0.300	0.674	1.488	2.343	3.035	3.842	3.943
Italy	0.129	0.217	0.403	0.947	1.366	1.854	1.958

Source: McLaughlin, A. and Maloney, W. (1999) p56.

The oil shock of 1973-74 was the final mark in the great boom of the European automobile industry. The petroleum prices went high and both in Europe and United States the governments tried to reduce consumption with various rationing schemes. The oil shock affected the demand for cars worldwide, not only the larger and less fuel-efficient models but also the small and economic ones, increasing the demand for diesel engines by the mid-1974.

Another effect was the restructuring of the automobile industry in the United States, where the producers shifted their production to small cars. Under federal government pressure (and incentives) gradually the American cars reduced their size, weight and fuel consumption. This led to efforts by the three major producers to design mass-market cars that with little alteration would suit not only the American market but also the European one. The "globalized car" became an objective, with components mass produced by specialized factories in several countries brought together for assembly in one or more plants, and then the cars sold all over the world.

Many American car models by the late 1970s resemble typical European and Japanese cars, and the Japanese took advantage of it more than the European producers. In the United States, the Japanese cars earned a higher reputation for reliability than the European ones and only Volkswagen managed to compete with the Japanese. Nevertheless Japan kept its dominance over the automobile import trade to the United States.

Following the Iranian revolution that replaced the shah by Khomeini in 1979, came the second oil shock. It reduced the demand for cars again, and the auto-makers continued

their efforts to survive to this sharp decrease. European automakers also had to overcome situations in labor and manufacturing methods: electronics, where the Japanese often were leaders. Electronics technology involved computer-aided design for cars, helped management schedule deliveries and processes, and it changed production itself – computer controlled machines (robots) could do certain complex or unhealthy jobs during assembly. The technology allowed that semi-skilled workers no longer had to do unpleasant tasks and provided greater flexibility in production. However, there was a negative side: sometimes the malfunction of the machines and the complaints from labor forces regarding the human jobs losses[200].

In terms of management, the European automobile producers followed the American path and instead of building huge car factories like the Soviet Union, they decentralized to several assembly plants, supplied by a number of specialized parts and subassembly factories. This system allowed building cheaper cars, because subcontracting means that auto companies didn't have to invest in new factories and depended on close inspection to ensure quality.

[200] The technology innovation's impact on one society is expressed by Archibugi and Michie, when state that "Innovation is more than just a series of isolated events shaped by enlightened inventors, forward looking entrepreneurs or dynamic corporations", quoted by Rodrigues, Eduardo L. (1999), p2.

Chapter III - The European integration process and the Automobile Industry

1. The automobile industry at European level

A decade after the Second World War, the European economy was growing, the general production output was rapidly getting ahead of the prewar levels, and the development gap to the United Stated was shrinking[201]. The world had seen the birth of many institutions like the World Bank, the International Monetary Fund, the GATT and also the European Community of Coal and Steel[202]. Of course, much of the developments in Europe after the war would not be possible without the aid of the Marshall Plan. The following developments led to a series of political and economic organizations in Europe and also to Treaties that founded the European Economic Community and to the European Free Trade Association.

Regarding the automobile industry, the first supranational organization in Europe was the Organization of International Automobile Constructors (OICA) established in 1955 in Paris. This organization was formed to lobby the European Commission. The OICA at the time was an important source for ideas for the Commission. In 1958 a satellite group of OICA was created, the Liaison Committee of the Automobile Industry of the Countries of European Communities (CLCA) in order to represent the national automobile trade associations.

In 1972 another group was formed, the Committee of Common Market Automobile Constructors (CCMC), and soon became the industry's most prestigious group. The group was formed to fulfill the lack of direct company representation at CLCA, and at the beginning of the 70s the Commission started to draw plans to regulate a number of technical areas, and the European companies were worried that Ford and General Motors would lobby for the adoption of the United States regulations.

In the middle 80s the two groups worked closely together to monitor the relevant policy agendas. The CCMC tended to concentrate on technical issues and CLCA became the dominant group in terms of legal and fiscal matters. However, the political development in Europe after 1986 placed the working relationship between the two groups under

[201] For further details regarding the history of the European Union developments after the Second World War see Valério, Nuno (2010).
[202] Rodrigues, Eduardo L. (2008), p259.

pressure. Both group's areas of expertise became blurred as policy-making activity increased. The Commission was expressing concern about the sector's inability to act collectively, perceiving that both group's internal decision-making structures did not adjust to changing circumstances. At the beginning of 1990, the tension between the CCMC and the CLCA had reached a point where several important companies began to argue for the creation of a single European federation.

Up to the late 1980s the automobile industry was regularly beset by financial crises and suffered from poor industrial relations. Because automobile production was so important to the manufacturing sector, governments often felt compelled to intervene. In many aspects the European industry was dominated by "national champions"[203] heavily reliant on domestic sales. Therefore, issues like technical harmonization and state aid have all become matters of high politics for the national government, and the use of national strategies by companies and groups was an attractive option. That was in line with the increasing importance of the Council of Ministers in the decision-making process, and the nation-state bargaining character of much of EEC policy-making. While the Single European Act sought to redress this by limiting the powers of veto in the Council of Ministers, the majority needed for a decision remained high and national channels have figured prominently in the automobile corporate representation strategies.

Council decisions were reached through a complex process of bargaining and trade-offs between member states. Therefore, a key decision could reflect how well a national minister had mastered the national briefings. Companies also realized that once a Council meeting begins, their position was in the hands of a minister who may have competing priorities. Therefore, hostility in the Council through an important lobbying was not an adequate substitute for influencing the content of a directive during the initial drafting stages in the Commission.

One of the most significant developments in the automobile sector was the opening of Brussels offices by major companies, aiming to develop personal links to policy development[204]. Large firms also hired Brussels-based lawyers to represent company interests of local political consultants. While there was an expectation by Commission

[203] Woolock, S. and Wallace, H. (1995); p90.
[204] As Daimler-Benz Company showed with its press conference in October 1989 when stated "Only those who are well informed about the wide variety of initiatives and proposals and who have a deep understanding of the decision-making mechanism will be able to defend their legitimate interests effectively"

officials that policy would be channeled through Euro-groups, a company rarely relied on the group alone.

These Brussels offices had the function of monitoring social and political issues likely to affect the interests of the business, helping to represent the company key audiences or stakeholders, and guiding top managers in their policy-making[205]. Also companies with established Brussels offices felt they had some inside advantage, for example, due to the long-term relationship they have with key individuals or by virtue of leverage due to specific expertise or national importance[206]. Good contacts were essential if companies wanted to acquire advance intelligence of developments affecting their business. Even German companies accustomed to work with authoritative central trade groups at national level, have undertaken independent activity at European level.

The Commission appeared to welcome Companies contacts despite its wish to work with Euro-groups. This happened in 1990 when negotiations between CCMC and the Commission over the issue of Japanese cars in Europe broke down. Faced with this problem the Commission then entered into formal bilateral dealings with the six largest European-owned manufacturers (Peugeot, Citroen, Renault, Fiat, Volkswagen and Seat). The complexity of this issue illustrated the "policy mess" which can emerge when the consultation process extends beyond Euro-groups to bilateral contacts. That is why the Commission generally prefers to consult through Euro-groups, although in some cases (as the Japanese Car's issue showed) where the Commission is skeptical of a group view, it will often test that position by seeking the opinions of individual Companies. By having pan-European operations, these Companies have experience of operating in a number of EEC member states, which could provide cross-national information that can be utilized by the Commission.

Led by the frustration of the Japanese Car issue, by the summer of 1990 the Commission began to put pressure on the automobile sector in order to develop a more cohesive collective voice. The Commission was determined to replace national import barriers with a European trade policy. In 1990, twelve members of CCMC resigned from the group and announced they would no longer being supporting CLCA either. Throughout 1990 negotiations took place between CCMC and CLCA over the need to

[205] MacMillan, K. (1991).
[206] Idem

create a single group. In 1991, the industry agreed upon the statutes for a new unified group, the Association des Constructeurs Européens d'Automobiles (ACEA). The new group's structure differed from its predecessors in two important aspects: it extended its membership to include the American and Swedish manufacturers, and adopted a system of majority voting[207].

The national trade associations were put aside within the group structure. These groups were represented by one standing committee, with no voting power, no representation on the board of directors and could only participate in working groups and strategy groups if invited by the secretariat. The key manufacturing companies could directly finance the Euro-group activities and control its policy-making mechanisms. Like other sectors, this was prompted by active large companies, aiming to form small Euro-groups through which companies could advance their interests[208].

2. The ACEA/Commission relationship

The Commission's policy-making in the automobile sector was mainly in four broad areas[209]:

1 - The internal market, including all aspects of competition policy relating to state aid and vehicle distribution, the harmonization of the vehicle taxes, improvement of vehicle safety, and promotion of environmental standards.

2- European Union policy in the field of structural interventions and human resources, including all EEC policy programs used to facilitate economic adjustments in the sector, such as regional policies and support for training and infrastructure.

3 – Research and technological development; all horizontally organized funding programs incorporated in the EEC's framework programs.

4 – External trade policy, including monitoring the gradual opening of the EEC market to Japanese car imports and improving market access to third markets for European automobile companies[210].

[207] ACEA history can be seen in its homepage at www.acea.be
[208] Greenwood, J (1997), p23.
[209] McLaughlin, A. and Maloney, W. (1999), p127.

From ACEA's standpoint, the essential task of interest representation was to ensure that once sectoral priorities had been defined in working groups, all parties united to a common line in any separate dealings, with the Commission and with national governments. The internal decision-making structure of ACEA was also designed to reflect the decision-making structures of the EEC as a whole.

One of the ACEA most important campaigns in 1990s was proposing changes to the industry selective distribution system. All major automobile companies were selling and servicing their vehicles through a network of authorized car dealers. Each dealer had a clear defined territory within which the dealer had exclusive rights to sell the manufacturer's products. In return for exclusivity, the dealer signed a contract with the manufacturer to retail the vehicles and provide all servicing to the vehicles. This system was incongruously with EEC competition laws since it denied consumers the chance of comparing a range of brands at any one dealership, and restricted competition in the after-sales market[211].

The effort to create and empower ACEA was not to create a collective voice that would displace other forms of political representation, rather, it was designed to rectify a weakness in an important area of corporative representation. Thus, the strengthening of the Euro-group took place alongside with efforts to improve "own account" operations in Brussels. This happened because the positions a company may favor were not always in areas where there would be a collective interest among the members, and thus cannot be advanced via Euro-group. However, the group was an important option and one that has been considerably strengthened in the case of the automobile industry[212].

[210] CEC (1994).
[211] Woolock, S. and Wallace, H. (1995), p23.
[212] Greenwood, J (1997).

3. State aids[213]

In terms of competition policy, throughout the years the governments always found ways to overcome the limits that ironically themselves agreed to establish. Thus, the competition policy assumes a bigger importance when applied to a *competitive geography*, composed by many sovereign governments, as it is the case of the European Union[214]. The granting of aid was a well-established policy instrument in many nation states and the Commission focused its efforts on control rather than eradication in the first instance.

The 1980-6 period can be described as being problematical in terms of attitude from the Commission, where many authors consider that its main objectives were frustrated. The recession throughout Europe in the 1970s led to a further round of subsidies for automobile companies. As seen in the previous chapter, British Leyland was asking the government in 1980 a further £1bilion of aid to prevent large-scale closures. In Sweden, Volvo followed a similar route, and in Italy both Fiat and Alfa Romeo were undergoing state-funded restructuring programs. Between 1977 and 1987, member states granted state aid of an estimated amount of ECU 26 billion to motor vehicle producers[215]. The Commission increased its efforts to monitor such programs but the situation was difficult to control.

The main problem was that aid granted for purposes that appeared to satisfy the exemption criteria[216] was in fact being used for general purposes, which the company concerned would have had to finance itself anyway. Such behavior constituted a distortion of trade[217]. The Commission emphasized its determination to monitor the automobile sector in 1983 when it reminded several member states their obligation to notify state aids. It also made known its displeasure about the practice of paying illegal aids to companies before the Commission had the opportunity to investigate. The new

[213] The state aid concern was already expressed in the first Paris Treaty in 1951 (ECCS) and the Rome Treaty in 1957 (EEC and EURATOM), although the exact definition and boundaries of "state aid" was not very explicit at both.
[214] *Competitive Geography* is the author's attempt to translate the concept "Geografias Concorrenciais" explained by Rodrigues, Eduardo L. (2008), p241.
[215] Dancet, G and Rosenstock M. (1995).
[216] Exemptions to state aid prohibitions, which are only generally referred in the Treaty, have been confirmed as legally permissible if they are for purposes such as regional development, retraining and job creation in potential growth industries; according to Nugent, Neil (1999), p327.
[217] Since 1947 with the GATT agreement rules were established regarding the concession of subsidies and other means of state aids, characterized in articles VI and XVI as trade distortions; mentioned in Thorstensen, Vera and Jank, Marcus (2005), p188.

monitoring system was to apply to all aid granted, and the Commission tried to persuade member states to adopt its proposals, although the system depended in large measure on goodwill and there was scope for abuse. After this attempt had failed, the Commission dropped its plans for greater monitoring by the end of 1983 and continued to rely on general competition rules in individual cases, and no negative decisions were taken by the Commission, despite the scope of action provided by the Article 93 (2) of the CE Treaty[218].

The principal feature of the period lasting from the mid-1970s into the 1980s is that precisely in this period, one of political stagnation and decisional malaise, took place an important, but less visible mutation – the erosion of the limits of the Community competences[219]. The Commission emerged from this first period somehow disappointed at its failure in the automobile sector, but determined to deal more effectively with state aids issues. In the period of 1986-7 it launched investigations into preferential loans granted to Peugeot and Renault by the French government, into the German government plans to partly fund a new Daimler-Benz factory in Baden-Württemberg, and into injections of new capital in Alfa Romeo, Renault and Seat by their governments. These cases raised further concerns about trade distortion and competitive advantage. The industry itself remained silent as one manufacturer after other received aid, applying the mentality of "a dog doesn't eat a dog"[220]. Even though many Commission investigations at the time demonstrated that some aid was illegal and represented a market distortion, it remains the case that no member of the ACEA has ever objected to aid granted to another member. Only once, the Commission received an objection to aid granted, and that was when the French aerospace group Matra, complained about the Portuguese government aid given to Ford and Volkswagen to develop and build a multi-purpose vehicle with the Autoeuropa project[221].

The three major state aids investigations in this period, involving Alfa Romeo, Renault and Rover Group had many similarities. The companies concerned were rapidly losing market share, some had negative cash flows, and debt relief was granted by national governments. The member states were learning how to undercover these subsidies and, in all cases, the aid was designed to prepare the companies for privatization. This time

[218] Dancet, G and Rosenstock M. (1995).
[219] Weiler, J. H. (1991), p2453.
[220] Delors, Jaques (2004), p425.
[221] For further readings about this case, see Lopes Porto, Manuel (2001); p285.

there was a clear pattern in the way the Commission dealt with those companies. In each case the only part of the aid that was approved from the Commission were those linked to specific capacity closures. Perhaps most important of all was that for the first time the aid was approved upon fulfillment of a number of implementation conditions. This was clearly a measure of the Commission's growing authority in the area.

By the end of the 1980s the Commission was developing a specific framework to monitor the aid to the sector. This substantial change was due to the experiences and reactions to the three major state aids investigations in this period[222]. In addition, the Commission used this period of structural adjustment and shift in the sector to persuade a majority of member states regarding a new approach to the state aids monitoring.

3.1 The state aid framework and its implementation

In 1988, the Commission published a memorandum[223] which set out a policy state aid framework for the sector. It referred that despite the substantial restructuring of the "national champions" in the 1980s, the industry still lacked international competitiveness. The Commission decided to intervene more directly to accelerate the restructuring process in the sector. The approaching single market deadline in 1992 and the increasing globalization of automobile production provided the ideal *leitmotiv* for a more assertive approach from the Commission. The memorandum also claimed for more effective regulation of aid, and received the support of the Council of Ministers and the European Parliament.

Many in the Commission associated the automobile "national champions" with much that was wrong with the European economy. "National champions" were associated with inefficiency, seen as retarding restructuring efforts, and, had become dependent on subsidies from their national governments. In reality, they often captured the domestic market and became complacent about international markets. Not only did their market

[222] And also because of the new competition policy concept, changing from its original goal in the Rome Treaty as it was mainly to eliminate the factors that could lead to an increasing possibility of war between Member States, as described Rodrigues, Eduardo L. (2008), p325.
[223] First Survey on State Aids in the European Community. SEC (88).

power afford them protection, it also made difficult to refuse their regular demands for state subsidy[224].

The Commission completed a draft framework by the end of 1988 with important changes. With this new framework, any aid over ECU 17million required previous notification, and any aid given to the industry under horizontal schemes (even if it had received general approval from the Commission) would require notification. The new guidelines required member states to provide annual report containing the details of all aid payments to automotive companies. The spirit of the new rules was to "allow the Commission to verify more directly the compatibility of the aid in the sector with the competition rules of the Treaty"[225].

It is important to underline that the 1989 framework was not intended to remove all aid, but to control both its flow and its range of purposes. The Commission considered 57 cases under the new guidelines, between 1989 and 1996, and only two of them were incompatible with the framework[226]. Probably a good measure of the success of this framework is that during the early 1990s, when European sector experienced one of the worst recession, the industry collectively received less aid than Renault alone had received in the 1980s.

The competition policy followed by the Commission was different from its very beginning, because it had the instrumental capacity of a goal that few believed: the unity of the European Market[227]. Thus, in terms of state aids it is possible to verify that the Commission in the automobile sector managed to break long-standing relationships between governments and industries, which were encouraged by shared attitudes and understandings about the use of state aid instruments[228].

[224] Cox, A. and Watson, G. (1995); p116.
[225] CE C123/1989, pp 3-11.
[226] Because those were considered to be aids that distorted trade, instead of aids to improve competitiveness.
[227] Rodrigues, Eduardo L. (2008), p85.
[228] Dancet, G. and Rosenstock M. (1995).

4. The External Policy – trade policy

European governments were concerned by Japanese car advances in European domestic market share in the 1970s and those with national production bases to protect responded with some form of market closure[229]. In 1971 Britain imported 12,995 Japanese cars, representing 1% of the total market; by 1975 the figure was 107,934, or 9% of the market. At this time the Society of Motor Manufacturers and Traders (SMMT) failed in its attempts to persuade the British government to impose anti-dumping duties on the Japanese. The British government instead encouraged SMMT to seek a voluntary agreement on moderation with Japanese Automobile Manufacturer Association (JAMA). However, it did take the intervention of the British government to bring the Japanese side to the negotiation table. Thereafter, a Voluntary Export Restraint (VER) was implemented through annual negotiations between SMMT and JAMA[230].

Increasing Japanese import penetration met a similar response in other European countries. The French government contemplated imposing a formal quota in 1977 but decided instead that a VER would operate once Japanese companies had achieved a 3% market share. This occurred in 1980 and accordingly the 3% ceiling was implemented[231].In Spain, a unilateral quota limited Japanese imports to just 12,000 units. Germany and Benelux countries, who had made a virtue of their openness, flirted with informal agreements throughout the 1970s and 1980s. In the 1980s Japanese market share in Germany floated between 15% and 16%. While there was no formal agreement in place, Japanese side was attentive of the need to restraint. Italy had a bilateral trade agreement with Japan dating back to 1952, limiting the flow of finished products in both directions, and Japanese share of Italian market stayed below 1% through the post-war period. Since 1981 the Commission had been monitoring Japanese imports, with member states informing the Commission of the number and value of Japanese automotive imports in their national markets.

The European Economic Community (EEC), as it then was, took the decision in 1985 to create a Single European Market (SEM)[232]. It was an opportunity for the Commission to claim its authority on the region and announce its arrival as an international trading

[229] Craveiro, Nuno (1999), p82.
[230] Bangemann, M. (1989), p18.
[231] Ikeda, M. (1985), p114.
[232] European Commission (1985).

partner. The Commission was determined to press ahead with the SEM program and to undertake harmonization in the automotive sector as a key integrative step. This was a sector where national policy paths were long established and where protection of the national market through quotas and technical specifications was accepted as legitimate objective.

The CE automotive trade policy was for a long time dominated by the issue of trade with Japan in terms of both trade flows and market access. The elimination of national imports restrictions on Japanese cars was one of the most controversial aspects of the single market in automobiles, although the Commission followed the Montesquieu thesis that commerce between nations leads to independence and by so it leads to peace[233]. In the 1970s and 1980s the use of VER and import tariffs to limit the free flow of finished vehicles from Japan was viewed as a legitimate policy instrument. There had been little evidence to suggest that protectionism had enabled national industries to acquire the requisite competitiveness to match the Japanese[234]. However, in 1988 the European Commission announced its intention to develop a European automotive trade policy, and it stated that would do all efforts to harmonize national trade policies in this highly sensitive area.

The requirement that all member states remove restrictions on the movement of good within the CE after 1992 weakened the existing informal agreements that were protecting some national markets from Japanese imports. After 1992, Japanese cars could enter the EEC via an unprotected national market (Britain) and then be redirected to a heavily protected market (Single European Market). The possibility for disruption and the scope of national governments adopting unilateral measures encouraged the Commission to act.

The Commission's desire to draw a European automotive trade policy was not only an important integrative step towards a Single European Market in vehicles, but also as symbolic step in Europe's development as a regional trading bloc and its evolving political relationship with Japan. Economic and political union in Europe was partly motivated by the rise of Japan as a global economic power[235]. The Commission was making efforts to be the key broker in the future trade relations with Japan and other

[233] The whole spirit of this conception can be seen in Rodrigues, Eduardo L. (2008), p56.
[234] Sandholtz, W. and Zysman, J. (1989); p62.
[235] CEC (1992b).

regions. Thus, the existing bilateral trade agreements between member states and Japan (in key markets such as automobiles) had to be eliminated. According to Sandholtz and Zysman[236], the 1992 project was sustained by the Commission, in order to broker elite bargains by adapting the Commission itself to changes in the international environment and exploiting diversity in the domestic political context. The 1992 project emerged because the institutions of the European communities, especially the Commission, were finally able to exercise effective policy leadership. The international structural changes and a favorable domestic setting provided the opportunity for restarting the Communities. The Commission played the role of policy entrepreneur.

The requirement to harmonize policy towards Japan in this sector cut across entrenched national interest. Consequently, it would require the dismantling of valued policy instruments at national level. This doesn't mean that all the Commission's views prevailed in all outcomes[237]. Policy towards Japan was achieved as a result of European car producers reaching a common position through ACEA and by its turn, from ACEA negotiating with the Commission[238]. Indeed, interested member states and many automobile producers gained significant concessions in the negotiating process. The details of the policy were blocked in consultation with the various interests. On many issues the coalition of member states and powerful automobile companies was a powerful and influential one, so in the end it was achieved an *Element of Consensus*[239].

With this *Element of Consensus*, the Commission has gained assurances that the market could be completely open after 1999, that protected markets would gradually open, and that Japanese market share would increase over the next years. As Bangemann[240] remembered the GATT agreement was also taken into account in this *Element of Consensus*: it was not merely to encourage free trade, it was also backed up politically. In this respect, there was not a realistic alternative to the method of Japanese self-limitation chosen by the Committee even if this intermediate measure was not entirely satisfactory. That was because, at the end of the transitional period, the GATT rules would be fully accepted. In the external policy the Commission can be characterized as

[236] Sandholtz, W. and Zysman, J. (1989); p62.
[237] Gandillot, T. (1992), p94.
[238] Holmes, P. and Smith, A. (1995), p131.
[239] McLaughlin, A. and Maloney, W. (1999) p234.
[240] Bangemann, M. (1989), p85-86.

a "policy entrepreneur" persuading, and bargaining in pursuit of pragmatic and workable policy outcomes[241].

To achieve this delicate consensus, the Commission had to extend branches to several national governments in order to keep the negotiations with Japan. The immediate effects were that the Commission was pushed away from the policy package it originally wanted. However, the SEM represented a unique integrative step and an enormous project for the Commission and Europe, and it should have been counter-productive not to accommodate the various interests in the face of this Japanese threat. In what has become a clear trend in Single Market policies, the *Element of Consensus'* understanding reflected the Commission's desire to ensure national cooperation in a policy development, rather than pursue full integration and the attendant risks of disputes with member states[242].

5. The Internal Policy

During the negotiations of the *Elements of Consensus*, and subsequent to the understanding, great emphasis was placed in the Internal Policy that would accompany the External Policy. There would be a program of support for the automobile sector during the period when national trade policies were lifted to smooth the process of industrial adjustment. A Council resolution on the sector stated the measures should be brought forward to facilitate adjustment. Such measures should be aimed at the adjustment of the European motor vehicle industry and should be taken in good time, so as properly to accompany the gradual opening of the market.

5.1 The Industrial policy

Industrial policy is generally seen as an instrument through which governments underwrite certain industrial enterprises or sectors because they are believed to be of

[241] The importance of EU in the GATT agreement can also be seen in the future, where the issue of the interaction between competition policy and international trade was included in the OMC's agenda from 1996 onwards, and it was the consequence of the European Union (at the time European Community) requests and efforts at the OMC's Ministerial Conference of Singapore of 1996, highlighted in Thorstensen, Vera and Jank, Marcus (2005); p355.
[242] Kastendiek, H. (1990) p75.

strategic importance to the economy, usually associated with "national champions"[243]. Thus, industrial policy in the EEC covers a wide range of policies directed at activities of firms, including state aid, competition policy, R&D and education and training[244]. The EEC policy for a long time reflected the sum of its parts, and in the sphere of industrial policy this created inconsistency of policy instruments. The composition of the Commission's leading personnel was viewed as an important variable to explain its orientation to industrial policy[245]. Commissioners such as Sutherland and Britain have pursued aggressively competition-based policies in the face of opposition from member states, firms, other Commissioners and even Jacques Delors. On the other hand, Karel van Miert seems to have adopted a more flexible approach since his arrival at the Commission.

There was a consensus between the Commission and ACEA over the basic principles of EEC industrial policy. While the primary responsibility for industrial restructuring was competence of industry itself, ACEA maintained that EEC institutions and EEC member states had the responsibility to create an environment that would facilitate and encourage the growth of a competitive car industry. The Commission's approach to industrial policy (or as other authors claim to *industrial adjustment*) has led to tensions with leading manufacturers and member states. These have been more noticeable with companies such as Peugeot-Citroen, Renault and Fiat who were used to a symbiotic relationship with government agencies[246].

5.2 Technical Harmonization

One of the major obstacles to the single market in vehicles was the countless technical regulations that existed in national markets. The Cecchini report[247] showed that the automobile sector was ranking the top of the industrial sectors, being the one with more barriers to trade.

The process of harmonization began in 1970s when the increasing trade flows between European national markets and pressure from multinational producers led the

[243] Coates, D. (1996); p22.
[244] Idem, p8.
[245] Woolock, S. and Wallace, H. (1995),p295.
[246] Menon, A. and Hayward, J. (1995), p275.
[247] Cecchini, P. (1988).

Commission to search for common standards and regulations. It was in response to this that the industry formed the CLCA and the CCMC. Many issues were dealt in a countless number of technical committees under the umbrella of the Motor Vehicle Working Group (MVWG), a forum of industry experts made from relevant European and national trade groups and companies. The Commission worked closely with MVWG which then submitted its proposals to the Committee for Adaptation to Technical Progress for Whole Vehicle Type Approval (WVTA).

The Commission worked on harmonization during the 1970s and 1980s in an effort to achieve the full goals of WVTA by 1992, i.e. regulations when approved and certified by one national authority would be accepted throughout the CE without further examination and approval[248]. Despite the obvious logic of full technical harmonization by the 1992 Single Market deadline, cohesion was difficult to achieve in the EEC-level networks, because policy participation in many of those areas considered as "techno-politics" were often vested with national and corporate interests. If the process of technical harmonization in Europe made some progress, then creating a truly WVTA would be a long and arduous process[249].

5.3 Research and Development

Negotiations between the automobile sector and the Commission over research and development (R&D) have been complicated for many years and reached a difficult period[250] when negotiating the *Element of Consensus* with disagreements over the policy instruments to fund R&D in the automotive sector and the limited sums of available money.

These disputes within the policy network don't mean that the industry received little or no support through CE R&D Programme. In a sector which is so crucial to the manufacturing bases of the regions, its companies have received funding through participation in a wide range of programs. These included projects on generic

[248] As seen in the beginning of this chapter.
[249] Other processes within Europe also created some obstacles to the technical harmonization process, for example the Enlargement Process. One good example was Sweden that did not join the EU until 1995, which had numerous distinctive national standards in several areas.
[250] CEC (1992a); p10.

manufacturing via BRITE/EURAM[251], the development of computer-assisted production processes via ESPRIT, engine combustion programs via JOULE, and the development of intelligent safety technologies via DRIVE[252].

By the mid 1990s the key players, ACEA and the Commission, had to put to one side their differences and began working on projects towards the Fourth Framework Programme. There were several examples of these initiatives, one of them when the Commission and ACEA attempted to focus attention and effort on new product design through the "Car of Tomorrow" Task Force. The announcement of the Task Force was followed by extensive negotiations between the Commission and EUCAR centered in the Action Plan[253]. The Task Force also aimed to facilitate regulatory stability and the Commission allocated additional funds to this purpose.

Despite the critics of the automobile industry regarding R&D, the Commission continued to mobilize its resources to make coordinated applications for funding aid programs. Putting aside the academic discussion about what constitutes industrial policy or not, there was a range of the Commission-supported programs and initiatives aiming to raise the international competitiveness of the automobile sector through R&D. These efforts may have frustrated the industry's expectations, but they may represent the limits of Commission's abilities, given the constraints of the overall policy framework. As Menon and Hayward observed, "although many firms and some governments increasingly see the need for European-level coordination and cooperation in R&D activities (…) Community policies are, of necessity, targeted as much with equity of distribution as effectiveness in mind"[254].

5.4 Production capacity

In the 1990s Fiat, Ford, General Motors, Peugeot-Citroen, Renault and Volkswagen produced almost 80% of the European production. The market share was also evenly distributed between these manufacturers. This contrasted with the U.S. where only three

[251] SEC (1991).
[252] The entire range of programs can be seen at http://aei.pitt.edu
[253] EUCAR was a project established by manufacturers for joint R&D in areas of common interest.
[254] Menon, A. and Hayward, J. (1995), p272.

national manufacturers of fifteen that existed in 1945 were operating[255]. Two other factors compounded European over-capacity: first Japanese European transplant production was fast approaching 1million vehicles in Europe; secondly, imports from developing regions (China, India and others) have been on an increasing trend in the 1990s. The Commission, the governments and the automobile industry all agreed that over-capacity was the biggest challenge facing the sector.

Thus, at a time when the Commission was seeking to reduce capacity in the European sector, the progressive liberalization of the European market was bringing new capacity. The arrival of new capacity in Europe has led many debates between the Commission and ACEA. The existing producers were at disadvantage compared with the Japanese plants in Europe which were built with public support, and based on leading-edge technology and design. ACEA argued that older factories in Europe need funding to facilitate modernization and enable them to become more internationally competitive[256].

This issue was of major concern to ACEA, and pushed the Commission to produce an aid package for restructuring during the 1990s negotiations with Japan. It sought unsuccessfully to tie the industry's agreement to a reduction on imports, with additional support for European firms to cope with the challenge from transplants. The major task was to remove some of the capacity from the European automobile sector by removing the weaker, less-efficient producers from the market. The traditional approach from national governments to over-capacity has been intervening and try to broker a deal between the leading companies. This approach has been followed at various times in all European nation states. The spectrum of defensive political interests and pressures was emerging around car factories and companies, making the task of removing capacity a highly sensitive one[257].

The Commission had neither the political authority[258] nor the political will to adopt an interventionist approach. Throughout the 1980s the Commission was content to allow national governments to run restructuring programs. The difficulty with this approach

[255] Laux, James M. (1992), p98.
[256] European Automobile Manufacturers' Association (1991); p2.
[257] Wilks, S. (1998).
[258] According to the Treaties, any kind of conflict resolution should be managed by the Commission with the supervision of the European Justice Court and in some cases together with the member states' national courts; Ribeiro, Sónia (2008), p35.

was that member states often failed to implement the reductions in capacity required[259]. The Commission's preferred option was to create a policy framework which allowed market forces to determine which companies would survive[260]. Here one can find the Ordo-liberalist influence in the European institutions, as Ordo-liberals believed in a true market economy from which power is excluded and in which outcomes are the results of the voluntary market transactions[261]. However, it has only been able to assert this objective since the introduction of the sectoral state aids framework in 1989. The Commission's effort to combat state aids in the automobile sector was also motivated by the fact that most of these subsidies had preserved the weak and in some cases the insolvents companies to the detriment of the long-term health in international competitiveness of the European economy. Similarly, part of the motivation for removing import tariffs on Japanese goods was to expose European producers to international competition and accelerate adjustment and rationalization.

European institutions have dispossessed national governments of many of the instruments of selective intervention and replaced them with a non-interventional approach. However, closing down automobile firms involved massive job losses, often in regions that could not support these effects. Moreover, achieving capacity reductions through mergers and acquisitions was equally difficult. The track record of acquisitions, joint ventures and mergers between European companies was not good. The mergers that have taken place have generally represented instances where there was a natural fit between the companies[262].

In a mature market[263] such as the automobile sector, these alliances were quite obvious to happen. To find complementary parties was preferable to take-over: it was more difficult to integrate a direct competitor into an existing organization. In addition, most European producers were in better shape that they were in the 1980s, and this was partly because several national governments allocated massive state aid to the sector as anticipation to the new restrictions about to be implemented by the Commission.

[259] As studied in the Alfa Romeo and Renault examples, by McLaughlin, A. and Maloney, W. (1999).
[260] Very much in line with the definition of "natural selection through competitiveness" described by Lopes, Eduardo R. (1999), p2.
[261] As shows Poiares Maduro, Miguel (1997), p61.
[262] As seen in the cases of Ford's acquisition of Jaguar, Fiat's acquisition of Alfa Romeo, and others.
[263] The definition of a mature market, and the definition of market cycles can be seen in Cardeal, Nuno (2008), p8.

6. The state of the art of the automobile industry in Europe

In the 1980s a cohesive policy network failed to develop in the automobile sector at a European level. In fact, the policy sector had a range of governing structures which had prevented such an arrangement. First, the industry was still dominated by "national champions". Harmonization involved significant risks for these companies as the delays in achieving Whole Vehicle Type Approval illustrated. Second, the industry had a tradition of independent political activity[264] which came to the front at the regional level, frustrating EEC institutions' efforts to replace national policies with regional policies. Third, European collective organizations (like CCLA and CCMC) were long established in the automobile sector but they were unreliable partners for EEC officials as they pursued integrative steps in the 1980s.

What existed in the second half of the 1980s was a European policy network which lacked the order of a community policy. National cleavages were still strong, there were different levels of support for harmonization and Europeanization among national policy networks, and the European institutions had not at that stage wrestled significant decision-making power from member states. Many automobile companies were still dependent on state aid and were focused in achieving competitiveness only within Europe.

There was a decisive change in the late 1980s as the deadline towards further integration, embodied in the Single European Act and Single European Market was approaching dramatically[265]. Although, large parts of the automobile industry failed to understand the significance of the Single Market program in legislative terms, and collectively the sector was left trailing in a rising of draft proposals from a rejuvenated Commission, where the weakness of the existing network and divisions within the industry provided the opportunity for the Commission to have a more assertive policy style. The Commission was able to exercise policy leadership at this stage, even if its preference was to work closely within a more cohesive network in policy development. Nevertheless, the Commission exploited the issue which surrounded the Single Market Program, to expand its influence in the automobile sector. From 1989 onwards, the Commission effectively controlled the formulation of policies, the timing of initiatives

[264] As Cooper stated"an increasing network of institutions which go beyond of the international diplomacy's traditional rules" in Cooper, Robert (2003); p34.
[265] Grant, W. (1992).

and the policy instruments that would translate policy into action. The Commission used these powers to good effect as it brokered the *Element of Consensus* understanding. This was just one example of the policy leadership which was demonstrated in its efforts to integrate the automobile sector. Another good example was the introduction of a sectoral state aids framework[266]. The period of state direction and imposition was a transitory development. In the 1990s there has been increasing evidence of a more cohesive network structure emerging at the middle-level. This process began during negotiations over the *Element of Consensus*[267]. The Commission, having determined the parameters of policy, then went to further lengths to negotiate implementation details with the industry.

Another clear indicator of cohesion at European-level networks in the automobile sector has come in the area of technical harmonization where policy community structures evolved in the 1990s. Back in the 1980s the Commission wanted to introduce a gradual program of tighter standards and negotiations were paralyzed by differing corporate and national interests, but in the 1990s such disputes reduced considerably. The Commission's achievements in this area would lead one to characterize the governing process as "supranational politics"[268]. Just as European integration initially reinforced relationships between "national champions" and member states, similarly the threats and opportunities posed by the globalization created pressure for closer cooperation between the Commission and automobile producers. Globalization was pushing the industry towards even closer joint venture activity, cross-shareholding arrangements and increasing consolidation and rationalization. This was changing the industrial structure of the sector and would in turn change the inherent governing structures of the policy network.

The majority of the industrial sectors were exposed to varying levels of European regulation and policy and we would expect different types of policy networks to exist in each of these. However, sometimes these policy networks lacked cohesion[269]. There

[266] Sandholtz, W. and Zysman, J. (1989); p71.
[267] Standarization in the European Economy. Commission Communication. Follow-up to the Commission Green Paper of October 1990. COM (91).
[268] According to Stone et al, supranational politics means a "mode of governance in which centralized governmental structures possess jurisdiction over specific policy domains within the territory comprised by the member states. In exercising that jurisdiction, supranational organizations are capable of constraining the behavior of all actors, including the member states, within those domains". Stone, A. and Sandholtz, W. (1997); p303.
[269] Kassim, H. (1994) p17.

were many factors in the multi-level system that could challenge and weaken networks. The key studies of internal policy in the automobile sector emphasized a horizontal approach to industrial support rather than a sectoral one. It is no coincidence that the Commission first established a sectoral state aids framework, then a sectoral framework on import tariffs, before finally drafting an action plan on industrial support that contained few specific sectoral measures. The message from this process was clear: general support was available to all industrial enterprises, and the automobile sector would have to win its share on merit. The special treatment, so long a feature at national level, was not on offer. Helping the auto firms to win their share, ACEA had on several occasions urged the Commission to pursue a "managed trade" strategy and to learn the lessons of the Japanese Ministry of International Trade's success with industrial policy initiatives. Somme scholars were highly critical of the Commission's *laisser-faire* approach to industrial policy. Although, as Dancet and Rosentock[270] highlighted, there is a difference between a strategy that is deliberated minimalist and not having a strategy at all. They also remember that at the time, member states didn't give the Commission a license to pursue a more interventionist approach. Thus, the CE had an industrial policy for automobiles in the analyzed period. Its central pillars were the state aids framework, technical harmonization, R&D, over-capacity and the removal of tariff barriers to the Single Market. These priorities may not have been shared by all sides, but they have been clearly articulated by the Commission in the last decade[271].

National governments were major actors in the Community, who have adapted and expanded their capacities alongside Community institutions, where there was a symbiosis (and not a tradeoff) between national and Community levels. Also the formal institutional structure was supplemented, and often made to work, by an informal network of the Community and national police-makers whose influence was decisive in many cases. Many attributes typical of national political systems, such as interest groups, patron-client relationships between agencies and those they regulate, bureaucratic policies, and even pressure from public opinion, were also developed at the Community level[272].

[270] Dancet, G and Rosenstock M. (1995); p47.
[271] Tsoukalis, L. (1997), p92.
[272] Dominik, Lasok et al. (1981), p562.

Conclusion

The member states have transferred to the European Commission the competence to intervene in national economies under the State Aid framework[273], and the competence to sanction directly the companies based in member states or in third countries, as long as their distort the market in the Common Market[274]. The process of European integration has provided the context of convergence of national policies into European Union policies. The discussion of the EEC-Japan car agreement showed how incompatible and distinctive national policies are now being tied up in a common framework. Often the process was softened by implementation clauses, derogation and so forth, but the trend towards transnational policy is unmistakable and irreversible in an industry in the way of globalizing its production.

There were many directives on the Commission's agenda which could have significant costs implications for the companies concerned. The approach to corporate representation taken by each automobile company was influenced by the configuration of the national political system, the decision-making environment there and the company's relationship with national authorities. As we saw in the previous chapters, Fiat and Renault enjoyed a symbiotic relationship with the Italian and French states. These companies represented vital economic interests and relied heavily on their national contacts to influence European policy. However, while European integration has reinforced national group-state relationships, the frequency and the importance of European policy-making have also led to tensions at the national level.

The entire integration process in Europe was an incremental one, because the Commission had to build consensus for EEC-wide policy, and to reassure those interests linked to national policy instruments. The 1991 understanding pushed the European automobile sector closer to the goal of an integrated and liberalized market. This was always the Commission's intention. Thus, the Commission continually brokered deals at the national, regional and international level. It had a seat at each negotiating table, something that no other actor in the process possessed. It used its pivotal position to good effect by producing compromises and deals, sometimes through incentives, at other times with veiled threats. It was the Commission and not national governments

[273] The State Aid Framework is a wide field of action, because the concept of State Aid itself is also extremely complex and with an extensive scope as it is possible to verify in the 87art of the Rome Treaty.
[274] Rodrigues, Eduardo L. (2008), p331.

that sponsored the reorganization of the industry, and through the ACEA it was able to persuade the industry to modify its position and unite behind a common line.

The notion of multi-level governance[275] seems to capture some of the essence of European policy-making in the automobile sector. There were some functional reasons why multi-level governance evolved in Europe. The main was that the Commission, as a policy drafter, established coalitions and structures with societal interests and public authorities across nations, in order to effectively manage the integration process. At least, for sectors where integration and harmonization were firmly on the CE policy agenda, multi-level governance was an empirical reality.

The development of European industrial policies and the shift of decision-making authority from nation states to Brussels was evident in the automobile industry for some time and raised the spectrum of new networks, new actors and governing structures at the transnational level. Within such networks we find actors from the national and regional level involved in a process of issue resolution. The interaction between national actors and transnational actors was as important to policy outcomes as the interactions that took place within the national network.

At one level, the need for a national response to Commission draft directives has had the effect of reinforcing relationships between domestic groups and national officials. There can be extracted three main causes for this. First, there is a degree of national solidarity between governments and industrialists in response to the "outside" interventions of CE policy-makers. Second, national governments are responsible for assessing the impact of Commission directives at an early stage, which means ensuring that they are sensitive to national circumstances. Third, domestic companies realize that through the Committee of Permanent Representatives and the Council of Ministers, national governments were still powerful in the decision-making process. On some issues the Council could have a decisive influence at an advanced stage in policy development. However, this was a reactive approach and often meant a failure to exert influence at earlier stages in policy development.

Therefore we have a kind of paradox: the ability of domestic networks to manage their policy agenda has been circumscribed by the shifting of decision-making power to the European level, yet, this very process has reinforced relationships within domestic

[275] Scharpf, F. W. (1997).

networks because of the amount of policy scrutiny required. Another important feature is that the European integration process challenged the legal monopoly of States and the hierarchical organization of the law[276].

It is hoped that this thesis can be a credible study of the European automobile industry, and that has provided the right basis in order to other scholars continue the analysis, the studies and the investigations in the European studies.

[276] Poiares Maduro, Miguel (1997), p80.

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Acronyms

ACEA - Association des Constructeurs Européens d'Automobiles

BMC - British Motor Corporation (British car Manufacturer)

BMW - Bayerische Motoren Werke (German car Manufacturer)

BRITE - Basic Research in Industrial Technologies in Europe

CCMC - Committee of Common Market Automobile Constructors

CGT - Confédération générale du travail

CLCA - Liaison Committee of the Automobile Industry of the Countries of European Communities

DAF - Van Doorne's Aanhangwagen Fabriek (Dutch truck Manufacturer)

DKW - Dampf-Kraft-Wagen (German car Manufacturer)

EC – European Commission

ECU – European Currency Unit

EEC – European Economic Community

ESPRIT - European Strategic Program on Research in Information Technology

EU – European Union

EUCAR - European Council for Automotive Research and Development

EURAM - European Research in Advanced Materials

FIAT - Fabbrica Italiana di Automobili di Torino (Italian car Manufacturer)

G&R - Gnôme and Rhône (French car Manufacturer)

GATT - General Agreement on Tariffs and Trade

GM – General Motors (American car Manufacturer)

JAMA - Japanese Automobile Manufacturer Association

MAN - Maschinenfabrik Augsburg-Nürnberg (German truck and bus Manufacturer)

NSU – Neckarsulm (German car Manufacturer)

OICA - Organization of International Automobile Constructors

R&D – Research and Development

SEAT - Sociedad Española de Automóviles de Turismo (Spanish car Manufacturer)

SEM – Single European Market

SMMT - Society of Motor Manufacturers and Traders

U.S. – United States of America

VER - Voluntary Export Restraint

WVTA - Whole Vehicle Type Approval