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# In the name of consumer: The social construction of innovation in the European automobile industry and its political consequences

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The paper questions the conventional representation of innovation and product policies dynamics in the European automobile industries. It shows that the proliferation of models, their faster renewal and the increasing technological content of new cars have not been pulled by the "postfordist" demand of the new "king consumer", but pushed by corporate strategies within a well defined conception of control. The paper focuses in particular on the political consequences of this innovation dynamic. At the market level, it shows that this trend has led to an increasing inegalitarian access to new cars reinforced by the rising cost of ownership of second hand cars. At the production level, it shows that in order to manufacture and sell profitably this wide range of new models carmakers have increased work productivity while reducing the cost of work. The paper argues that this double antifordist dynamic has locked-in the sector in a conception of control that is both economic and socially unsustainable.

Automobiles, Industry, Inequalities, Market Regulation

## Introduction

During the last 30 years, after the 1970s crisis, the automobile industry has undergone several mutations that have affected all its activities both upstream and downstream. One of the most striking evidence but also one of the main causes of this underlying trend has been the exponential growth in the range of models offered to the consumer, their faster renewal, and the accelerated pace of technological innovation displayed by these models. When questioned on what has been the main reason for this evolution in their product policy, the representatives of the sector, both in production and sales and in specialist and generalist brands, have one and only answer: the consumer. It is because the consumer has become more exigent,

sophisticated and complex that they had to enlarge their offer, to renew it faster, to introduce new options and designs, to increase the rate of technological innovation. And it is because this new consumer has also become increasingly whimsical and unpredictable that they needed to look for more flexibility and cost reduction activities all along the value chain.

This view of the evolution of the sector is shared by a great number of experts and public policy makers, in particular at the EU level<sup>1</sup>. It does also fall within the conventional representation of the transition between the “fordist” and the “post-fordist” paradigm (Freeman & Soete 1997). According to this widespread narrative model in social sciences, the “fordist” model was characterised by the “mass production” of standardised and unsophisticated products pushed by the economies of scale. Because this production focused on the first equipment needs of a homogenous middle class, it paid little attention to the consumers’ wishes. Its crisis during the 1970s is explained by the shift to a renewal market, and the emergence of new demands in the context of greater competition. The decomposition of the middle classes, at the demand level, and the need to develop more pertinent niche strategies, at the supply level, exposed the deficiencies of the fordist system of production, and in particular its supposed structural incapability of producing efficiently the variety and the quality demanded by the new “post-fordist” consumer (Abernathy 1978; Freeman & Soete 1997).

By contrast, the post-fordist paradigm pioneered by the Japanese carmakers is generally described as a production system pulled by the consumers’ demand and capable of delivering increasing variety, quality and technological innovation. The convergence toward this new paradigm is supposed to have participated in the reversal of the societal dynamic of the fordist period: from a society structured by the “productive world and its social stakes”, with at its core the factories and the workers, to a society pulled by the “universe of consumption” and of services, with at its core the “king consumer” (Cochoy & Dubuisson-Quellier 2000). In other terms, a world where the consumption was somehow subordinated to the needs of the production and work, had given way to a world where it is the production and the work that are subordinated to the needs of consumption.

According to this view, the forces that govern this new world are impersonal and almost natural: it is the market and the competition in the context of the globalisation of financial and market transactions. In order to survive the production and the work are supposed to become increasingly flexible, efficient, creative, innovating and profitable. It is indeed almost only from this perspective that the debate on the deindustrialisation takes place nowadays in high wages countries.

Now, the purpose of this article is to question the reality of this representation of the product policies, innovation dynamics and consumers’ wishes in the European automobile industry. What we would like to show in particular is that this evolution has not been pulled by the “new consumer” but pushed and shaped by the strategies of the carmakers.

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<sup>1</sup> See the European Commission Cars 21 final report (2007) that summarises the EU agenda for the regulation and the development of the European automobile industry: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52007DC0022:EN:NOT>.

In order to do so we will rely on the concept of “conception of control” developed by the sociologist Neil Fligstein. According to Fligstein, the stability of a given market depends on the capability of the dominant sellers to reproduce their positions in time. This is achieved by neutralising price competition that tends to destabilize all the firms in a given market by pushing them to undercut the price of other firms. According to Fligstein, it is the “conceptions of control” specific to each market that allow to neutralise price competition:

“Conceptions of control reflect the market-specific agreements between actors in firms on principles of internal organization (i.e., forms of hierarchy), tactics for competition or cooperation (i.e., strategies), and the hierarchy or status ordering of firms in a given market”. They “allow actors to interpret the meaning of a particular strategic move by competitors. Actors stick with the conception of control they believe works. [...] Such tactics and conceptions create cultural stories that can be used over and over again to justify an action or produce a new one” (Fligstein 2001, p. 35).

Reframed in these terms, the purpose of our article is to deconstruct the dominant model of explanation and to show how it contributes to the structuration and the reproduction of a specific conception of control. It will emerge in particular that the supposed elusiveness of the consumer it is not only a mirror, but also a vector in the rise of inequalities by the way it legitimates working and employment regimes that increase inequalities. The dynamics of competition in the automobile industry, both at the level of the supply and of the organizations involved in its production, and at the level of the markets and of its apprehension by marketing and sales organizations, will then appear as the complementary and interdependent levers of a conception of control that is as much meaningful in order to understand the historical dynamic of the sector, as it is economically and socially problematic for its present and future sustainability.

The article will be organised in four parts. In the first part we will develop a synthetic analysis of the evolution of the automobile offer from the 1970s until today. We will show that this evolution did not reflect the new needs of the consumers, but the transformation of the supply strategies of carmakers confronted to a change in their competitive context related to the emergence of a new sectorial conception of control. In the second part, we will analyse the political outcomes of this evolution on the demand. In particular, how customers manage to access this supply of cars characterised by higher variety, increasing technological content, new designs, and faster renewal. Building on the detailed analysis of the French case, we will show that this evolution has led to the exclusion of a growing part of the French population from the access to new cars. In the third part, we will analyse the effects of this evolution on production. We will show in particular that from the 1980s onward the share of value added distributed to the employees of the motor industry in France has been significantly reduced even as work productivity was significantly increased, and that this trend has been reinforced by the wave of externalisations of the 1990s and by the wave of relocations of the 2000s. In the fourth part, finally, we will compare these results based on the French case with data from other European countries. Despite certain differences between countries, we will show that it is possible to identify the same pattern of evolution both in terms of market and production trends in the other major European countries. Two reasons will be

emphasised in particular to explain this common trend. First, European carmakers share a same conception of control even if this does not profit in equal terms to each of them. Second, European regulation and European integration have largely contributed and indeed reinforced these underlying trends.

## I. The new regime of competition of the 1980s

The crisis of the Western automobile industry in the 1970s can be explained by three main interrelated factors. First, the shift –older in the case of the American market– from a first equipment market to a renewal market that slowed down the growth of demand. Second, the two oil shocks of 1973 and 1981 that have brutally reversed this slow growth while shifting the demand towards cheaper and lower fuel consuming cars that Western carmakers, in particular the American Big Three, were not able to manufacture (Freyssenet 2000). Third, the massive exports of Japanese carmakers that could rely on a low cost export base and on models that responded better than those of their Western competitors to these new needs.

The collapse of the production of Western carmakers –the direct outcome of these three interrelated factors– started to be perceived at the time as the sign of a structural crisis of the mass production system. What was reproached at the fordist model of production was its supposed incapability to produce the variety, the quality and the innovations demanded by this new renewal demand (Abernathy 1978). By contrast, the Japanese supply was supposed to combine all these features at competitive prices because of the implementation of a new productive model (Piore & Sabel 1984; Abernathy et al. 1983).

### The myth of the Japanese model

During the 1980s this representation of the Japanese competitive advantage became stronger and led to the lean production thesis which stages a complete opposition between the two models (Womack et al. 1990; Kenney & Florida 1993; Freeman 1988):

- mass production is pushed by scale economies; lean production is pulled by the demand of the consumers;
- mass production can produce only standardised models with no variety; lean production can manufacture a great variety of models on the same line of production;
- mass production is cluttered with huge stocks; lean production uses just what it needs to produce;
- mass production alienates workers by imposing a monotonous and fragmented work devoid of any meaning and satisfaction; lean production recomposes the work within teams that participate to the constant amelioration of the production process.

Lean production has been presented as the definitive solution to the problems generated by the crisis of Fordism. Its global diffusion is supposed to have restored the profitability of the firms, given back to workers the liking for work through their personal contribution to an inexhaustible technological progress, provided consumers with a greater variety of cheaper and better goods, and the States with a stable economic growth.

Despite several incoherencies and a regrettable tendency of the sector to not comply with this idyllic representation, the lean production thesis remains today the main explanatory model of the evolution of the automobile sector –and more broadly of the manufacturing sector– during the last thirty years.

However, when one takes a closer look at the features of the Japanese offer of cars in the 1970s and 1980s, one will discover that this widespread representation is fundamentally false. The dramatic market share increase of the Japanese in the Western markets, which took place mainly during this early period<sup>2</sup>, was in fact achieved by an offer that was characterised by a much smaller variety of models (table 1) that contained a much smaller variety in terms of options and designs than those of Western carmakers (table 2). Marie-Claude Bélis-Bergouignan and Yannick Lung (1994) have also shown that the rate of renewal of this offer was similar to the rate of renewal of the Western offer and that the product policy of the Japanese was rather conservative and aimed at reducing costs and increasing the quality of the export models already available. Concerning the capability of the Japanese carmakers to build this offer to order, this was also a myth. As the data collected by the European network International Car Distribution Programme shows, the factories of the Japanese carmakers in Europe produce only one car out of five to order in 1999, against one out of two for the European generalist carmakers, and two out of three for the European specialist carmakers (table 3). In the U.S., according to Holweg and Pil, the percentage of cars built to order by the Japanese carmakers was on average below 5% in 2000 (Holweg & Pil 2004). These results confirm also our own findings based on an inquiry in a Toyota French dealer, that show that the priority of the French dealers' network of Toyota was to sell cars that were already in stock rather than to give the priority to the customers' orders<sup>3</sup>.

But if the faster launch of new models and their building to order to better satisfy the wishes of the consumer were not the weapons that have allowed the Japanese offer to take market share from the Western carmakers, the question is: what pushed Western consumers to buy in mass these cars during this period?

Beside their supposed greater variety and customization to the consumer needs, the superior quality of these models is often mentioned to explain the choice of the Western consumers (Abernathy et al. 1983; Altshuler et al. 1984). But this factor was not decisive. Cusumano already showed in 1985 that Japanese consumers had systematically placed during the 1970s (with the only exception of the year 1971) the Western models exported to Japan in front of their domestic competitors in terms of quality –measured by engine performance, driving comfort, gearbox quality, fuel consumption and passenger comfort (Cusumano 1985, pp. 371-373). According to Abernathy et al. American consumers tended to attribute a slightly advantage to the Japanese cars in terms of quality, but only at the level of the number of

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<sup>2</sup> It is between 1973 and 1981 that Japanese carmakers took most of the market share that they still have in European and North American markets: from 3% to about 19% in the US, from 1% to slightly less than 11% in the European Economic Community.

<sup>3</sup> By contract Toyota dealers in France have to keep 1,5 month of their yearly sale of cars in stock, and they have 45 days to sell them without paying any interests, and 45 extra days before they have to buy the vehicle from Toyota. Their mission is therefore explicitly to sell their stock as fast as they can (Pardi 2006).

manufacturing defaults, and not in terms of mechanical reliability or performance (Abernathy et al. 1983, pp. 67-83).

The decisive factor was simply the most evident and distinctive feature of these Japanese cars: their price. Japanese cars cost much less than comparable Western models in terms of segment and options. According to the Ford report “After Japan” they were on average 10% cheaper<sup>4</sup>.

Table 1. Number of models and platforms of the main world  
carmakers (1970-1984)

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<sup>4</sup> Many other enquiries estimated in this period the cost/price advantage of the Japanese carmakers at around 10-15% (Asworth & Sharpe 1982; Ford Motor Company & UAW 1985; Abernathy et al. 1981).

	Total Production (Home Country)	Number of models	Production by model	Number of platforms	Production by platform	Models by platform
<b>1970-74</b>						
1 General Motors	4670189	31	150651	13,6	343396	2,3
2 Fiat	1500843	14,4	104225	8,8	170550	1,6
3 Chrysler	1582182	13,4	118073	9,2	171976	1,5
4 Ford	2683094	11,6	231301	8	335387	1,5
5 Volkswagen	1450289	11	131844	7,4	195985	1,5
<b>6 Nissan</b>	<b>1217150</b>	<b>9,4</b>	<b>129484</b>	<b>9,8</b>	<b>124199</b>	<b>1</b>
<b>7 Toyota</b>	<b>1565609</b>	<b>8,2</b>	<b>190928</b>	<b>5,4</b>	<b>289928</b>	<b>1,5</b>
8 Renault	1045328	7,2	145184	3,8	275086	1,9
<b>9 Mazda</b>	<b>349973</b>	<b>5,8</b>	<b>60340</b>	<b>5,6</b>	<b>62495</b>	<b>1</b>
<b>10 PSA</b>	<b>699988</b>	<b>5,8</b>	<b>120668</b>	<b>4,4</b>	<b>159088</b>	<b>1,3</b>
<b>11 Mitsubishi</b>	<b>248882</b>	<b>5,2</b>	<b>47862</b>	<b>4</b>	<b>62221</b>	<b>1,3</b>
<b>12 Honda</b>	<b>260072</b>	<b>3,4</b>	<b>76492</b>	<b>2,6</b>	<b>100028</b>	<b>1,3</b>

	Total Production (Home Country)	Number of models	Production by model	Number of platforms	Production by platform	Models by platform
<b>1975-1979</b>						
1 General Motors	5348514	31,8	168192	12,8	417853	2,5
2 Ford	2550875	17	150051	7,2	354288	2,4
3 PSA	1475144	13,6	108467	9,4	156930	1,4
4 Chrysler	1310111	13	100778	6,8	192663	1,9
5 Fiat	1204262	12,2	98710	8,6	140030	1,4
<b>6 Nissan</b>	<b>1629125</b>	<b>12,2</b>	<b>133535</b>	<b>11,2</b>	<b>145458</b>	<b>1,1</b>
7 Volkswagen	1450289	11	131844	7,4	195985	1,5
<b>8 Toyota</b>	<b>2017450</b>	<b>10,4</b>	<b>193986</b>	<b>6,4</b>	<b>315227</b>	<b>1,6</b>
9 Renault	1232497	9	136944	4,8	256770	1,9
<b>10 Mazda</b>	<b>490551</b>	<b>5,6</b>	<b>87598</b>	<b>5</b>	<b>98110</b>	<b>1,1</b>
<b>11 Mitsubishi</b>	<b>464629</b>	<b>4,6</b>	<b>101006</b>	<b>3,8</b>	<b>122271</b>	<b>1,2</b>
<b>12 Honda</b>	<b>547526</b>	<b>2,4</b>	<b>228136</b>	<b>2</b>	<b>273763</b>	<b>1,2</b>

	Total Production (Home Country)	Number of models	Production by model	Number of platforms	Production by platform	Models by platform
<b>1980-84</b>						
1 General Motors	4374365	32	136699	11	397670	2,9
2 Chrysler	909057	16,8	54111	6,6	137736	2,5
<b>3 Nissan</b>	<b>1792074</b>	<b>16,8</b>	<b>106671</b>	<b>13,8</b>	<b>129860</b>	<b>1,2</b>
4 Ford	1704633	16,2	105224	6,2	274941	2,6
<b>5 Toyota</b>	<b>2369111</b>	<b>16,2</b>	<b>146241</b>	<b>8,8</b>	<b>269217</b>	<b>1,8</b>
6 PSA	1314558	16	82160	10	131456	1,6
7 Fiat	1123002	10,6	105944	7,2	155973	1,5
8 Renault	1467764	8,8	166791	4,6	319079	1,9
9 Volkswagen	1343859	8,2	163885	4,4	305423	1,9
<b>10 Mitsubishi</b>	<b>544786</b>	<b>6,6</b>	<b>82543</b>	<b>5,2</b>	<b>104767</b>	<b>1,3</b>
<b>11 Mazda</b>	<b>792158</b>	<b>6,2</b>	<b>127767</b>	<b>5</b>	<b>158432</b>	<b>1,2</b>
<b>12 Honda</b>	<b>850729</b>	<b>5,6</b>	<b>151916</b>	<b>3,8</b>	<b>223876</b>	<b>1,5</b>

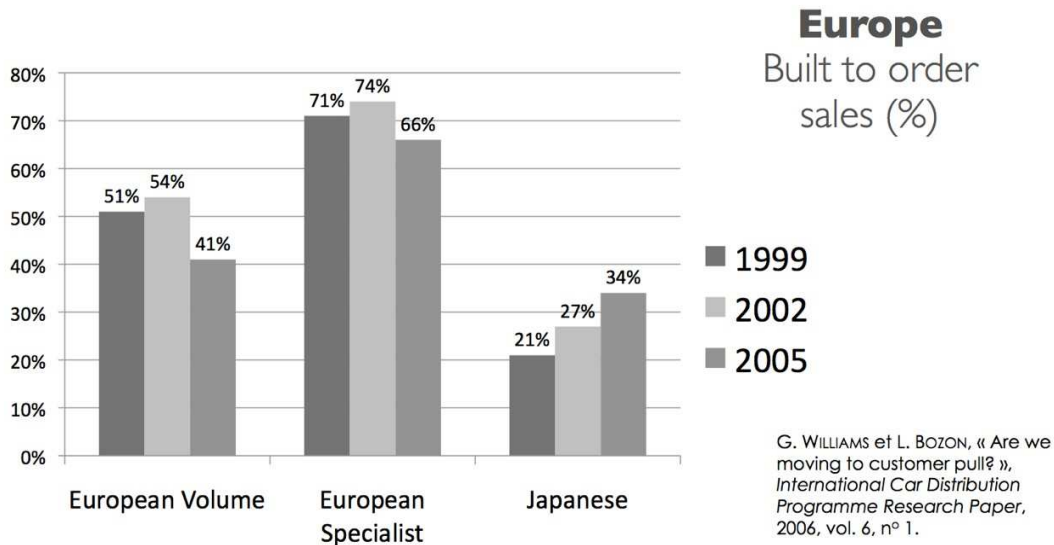
Source: Jetin 1999 (sources utilisées dans l'article: Revue Automobile Suisse, Automotive new - Almanac Issues, Wards Automotive Yearbook)

Table 2. Comparison in terms of variety content between the Japanese models to export and similar Western models



<i>Company</i>	<i>Range</i>	<i>All Specifications</i>
<b>1982:</b>		
	<i>Whole Range</i>	
Honda	Accord	32
Toyota	Tercel	384
Toyota	Corolla	768
Chrysler	Plymouth Horizon	6656
GM	Chevy Citation	38016
Ford	Ford Thunderbird	69120
<b>1991/1992:</b>		
	<i>Whole Range:</i>	
Honda	Concerto	17
Toyota	Corolla	568
Ford	Escort	2 722
Vauxhall (GM)	Astra	19 656
Rover	200/400	63 072
VW	Golf	30 629 888
BMW	3 Series	$18,5 \cdot 10^{12}$
<b>April 2003</b>		
	<i>Saloons only:</i>	
Honda	Accord	130
Toyota	Corolla	54
Ford	Focus	1 053 360
Vauxhall (GM)	Astra	12 947 904
	<i>Saloons derivative:</i>	
(MG) Rover	45 Series 1,6 16v	1 078 832
BMW	3 Series 316i	$5,3 \cdot 10^{11}$

Table 3. Built-to-order in Europe: comparison between European and Japanese carmakers



Source: ICDP (Williams & Bozon 2006).

Because of their reliability and lower fuel consumption, they were also cheaper to use. The choice of Western consumers in favour of these cars during the 1970s and 1980s was not therefore pulled by a larger offer of more sophisticated cars built to order, but by cars that were more frugal in terms of variety and options, that were more standardised in their conception and production, but that were significantly cheaper to buy and to use.

## The role of the myth and its effects

Two key questions arise from these somehow surprising findings:

- i) The first concerns this dominant and widespread but also false representation of the offer of the Japanese productive model: why and how did it manage to impose itself so successfully?
- ii) The second concerns the dynamic of the world automobile offer since the 1970s: why, if the Japanese offer had enjoyed such a success by selling cars that were more frugal and cheaper, it is exactly the opposite dynamic that has shaped the automobile markets during the last thirty years?

To answer in a satisfactory manner the first question we should develop a detailed analysis of the post-fordist debate that would overstep the frame of this article (Amin 1994). It is possible however to emphasise here the composite nature of the consensus that has been built around the lean production thesis. On the one hand, the inertia of the post-fordist debate has led to project on the collective representation of the Japanese model the fantasized features of a utopic postfordist model, creating the premises for a wider and passive acceptance of this “fantasized Japanese model”. On the other hand, there was an important effort on the Japanese side to support this utopic representation that cast a very positive image of the “Japanese model” at a time when it was very much criticized at home and abroad<sup>5</sup>. Finally, on the

<sup>5</sup> It is worth reminding for example that all the Japanese literature on the Toyota Production System published in the U.S. at the beginning of the 1980s was produced and controlled by the engineering department of Toyota (Monden 1983; Ohno 1988; Sugimori et al. 1977; Monden 1981; Shingo 1985).

American and European sides, carmakers rapidly understood that some of the Japanese methods of production would help them in restoring the “right to manage” contested by workers and unions during the 1970s crisis, contributing also to the reduction of cost of production, and in particular the cost of work (Babson 1995). The “revolutionary” and very positive image of the Toyota Production System conveyed by the lean production theory made it easier to introduce these methods in the Western factories (Lyddon 1996; Coffey 2006). From this perspective the diffusion of lean production did not imply the convergence towards a common productive model, but rather the emergence of a new conception of control.

Concerning the second question, it is important to keep in mind the disruptive nature of the price competition embodied by the Japanese offer during the 1970s and early 1980s. By selling cheaper cars than their Western competitors, the Japanese were not only taking market share, but they were also forcing Western carmakers to reduce their prices and margins in a context of crisis. The social and economic impact of the Japanese competition has been so devastating during this period that most of the Western manufacturers had to be saved by their own governments in order to avoid bankruptcy. A wide range of political measures were taken by all these governments to neutralise this lethal threat to their national automobile industries, such as protectionist barriers, quotas on imports and coordinated international pressure on the yen. And indeed from the second half of the 1980s onwards the Japanese carmakers not only started to massively invest in these countries to produce locally, but they were not anymore cutting the prices of their Western competitors (Pardi 2006). In other words, Western carmakers did not have the slightest intention to follow the disruptive strategy used by the Japanese carmakers during this period. What they did was to force the Japanese to respect the implicit rule of their own market architectures that forbade competing on prices.

On the other hand, the multiplication of the models and of the options available in order to saturate the market and optimise the profit margins according to the profile of the buyers, was not at all a new strategy emerged during the fordist crisis. The theory of the imperfect competition, and in particular the work of E. Chamberlain, already described this strategy in the 1930s by analysing the differentiation of products through the concept of monopolistic competition. General Motors that pioneered this strategy in the automobile industry started to implement it about the same period. Already in the 1950s, American researchers were able to express their astonishment at finding factories that could “run for more than a year”, and at a “maximum rate”, without being obliged to produce two identical cars (Walker et al. 1956, pp. 7-8)<sup>6</sup>.

In Europe, it is in the 1950s and 1960s that this market strategies has been widely implemented. For example, in 1969 a Ford advertisement in UK explained that with all the different versions and options “... *YOU end up with a car that has the features that you decided to have. For the price that YOU decided to pay. The choice yours. Not ours. That’s the whole point of our policy of offering so many cars and so many options. A motor car is too big a thing to shove down someone’s throat*” (Bannock 1973, p. 240)<sup>7</sup>.

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<sup>6</sup> Cited by: (Coffey 2006, p. 20). On this point see also: (Lyddon 1996).

<sup>7</sup> Cited by: (Coffey 2006, p. 15).

The continuation of this strategy in the 1980s was therefore completely coherent with what the industry had been doing for more than half a century and had nothing to do with the emergence of a so-called new post-fordist demand. The shift however from a first equipment market to a renewal market led to some significant modifications in the implementation of this strategy by most of the European carmakers. On the one hand, the slowing down of the growth of the demand pushed the carmakers to enlarge their offer of models as a way to increase their market share, notably on their domestic markets, in order to preserve their economies of scale. On the other hand, since the game consisted now in persuading households that already owned a car to buy a second or even a third one, or to change it for a new model, the choice to renew the fleet faster, to provide it with better performances, new designs and new technologies was a way to adapt the existing conception of control to the changes occurred in the economic environment.

The first tendency increased competition between carmakers at the level of the number of models introduced into the market. The second led them to concentrate their offer on the wealthier households that were the best able to change their car for a new one, or to equip themselves with an extra car. The locking-in of the sector in this double strategic choice is the key to understand the evolution of the car offer during the last thirty years. This evolution is indeed characterised not only by an exponential growth in the variety of the models on sale and by the accelerated rate of renewal of the fleets, but also by an underlying rise in the average prices of sale.

## II. The market causes the hyper-variety and the drift of the relative prices

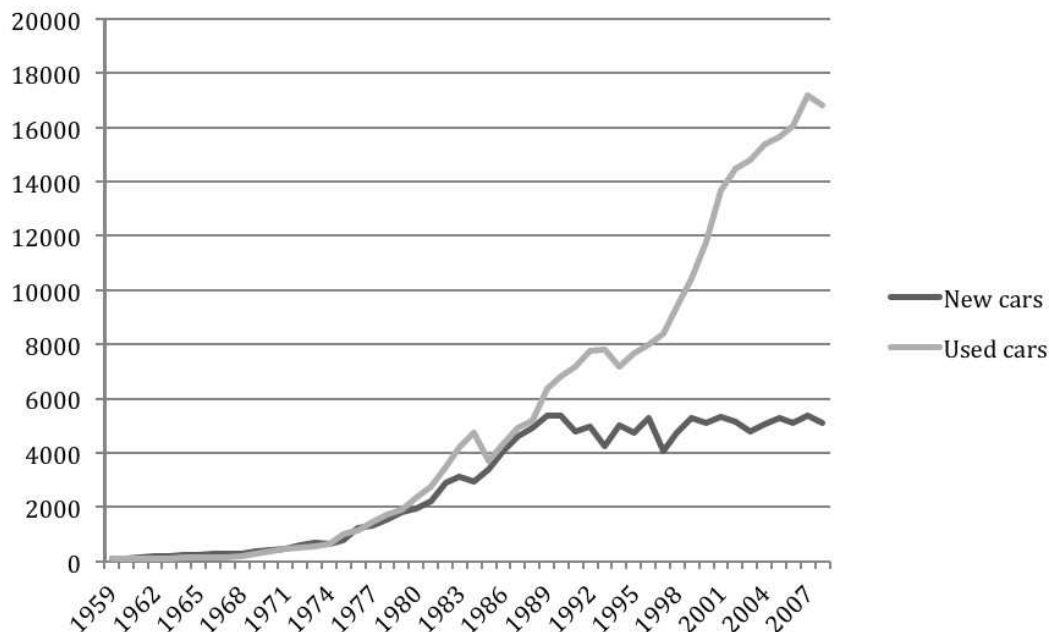
When one considers the long-term implications of this evolution on the French automobile market, it emerges that this proliferation of models and its faster renewal have benefited a decreasing number of households to the detriment of the majority.

For instance, the number of new cars sold to households has been decreasing each year, and the contrary is true for the sale of second hand cars (figure 1), suggesting a growing difficulty of average households to afford a new car. Indeed, the households that buy new cars have become richer –relatively to the average– older, and also rarer<sup>8</sup> (figure 2). A trend started in the 1980s, but that has intensified substantially during the 1990s.

Figure 1. Sales of new and second hand cars in France (base 100 – 1959)

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<sup>8</sup> According to the data of the Observatoire Cetelem, the average age of the buyer of new cars has risen from 45 years in 1999 to 52 years in 2009.



Source: INSEE, CCFA

The 1990s were marked indeed by more pronounced cycles than the 1980s. According to Regulationist economists, and in particular to Alain Lipietz, these could be explained by a shift from the fordist distribution of revenues to the so-called “hourglass shaped distributions”. In the first type of distribution, the larger share of revenues goes to the middle classes giving to the distribution of revenues the shape of a “hot air balloon”. In the second type, the number of households receiving less than half of the median revenues and those receiving more than the double of the median revenues increase substantially giving to the distribution of revenues the shape of an “hourglass”. Our hypothesis is that the rising inegalitarian access to new cars and the rising inegalitarian distribution of revenues are linked together. As Alain Lipietz pointed out:

“The more the wealth is concentrated, the more difficult is to persuade the rich to consume. Now, according to the neo-liberal view, only the consumption of the rich can boost production. Governments come to the point of assuming that it would be a good thing that the rich become richer so that they would consume more, buy a third car, hire maids and gardeners, go more often to the restaurant. [...] In reality, they only address the high part of the hour-glass. They are ready to subsidize the hire of maids, the purchase of cars, to exempt from taxation capital gains as soon as these gains are ‘dissaved’” (Lipietz 1998, p. 45).

As a result, for structural reasons, the automobile firms –which already sustained an economic system biased toward the rich (Jullien 2002)– have been led to accentuate this drift. Since they aimed at a decreasing minority of the households, the carmakers whose customers were less and less representatives of the middle or upper middle classes were now trying “to make drink donkeys (old and rich) that were not thirsty”.

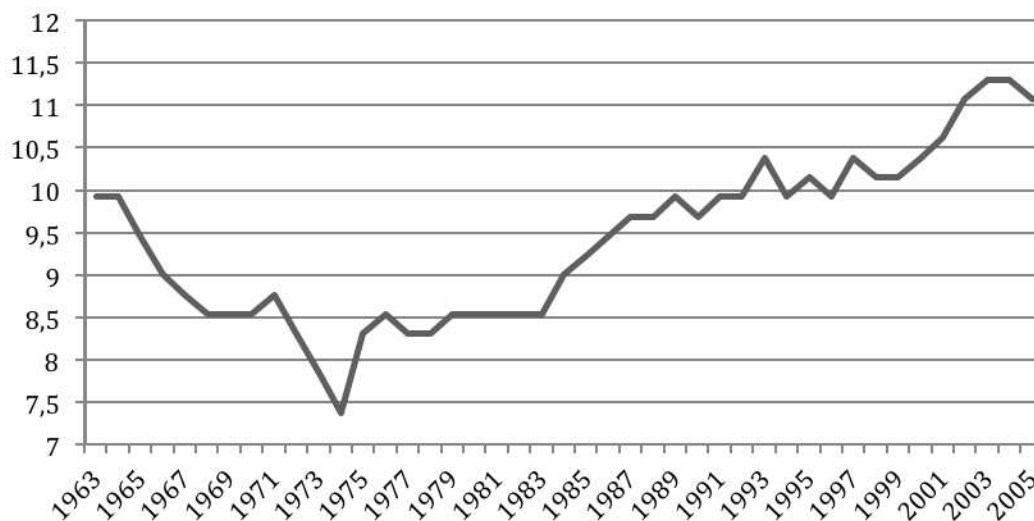
Figure 2. Motor expenditures in euros of households by quintile 1 and 5 (1995/2001/2006)

Quintile 1 (the poorest)	Quintile 5 (the richest)	Total/Average
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	1995	2001	2006	1995	2001	2006	1995	2001	2006
Number of households	4631	4904	4980	4631	4904	4980	23155	24520	24900
Revenues per household	11702	11687	12638	46921	52936	57750	25394	27534	30393
<b>Number of new cars bought</b>	<b>115</b>	<b>77</b>	<b>55</b>	<b>545</b>	<b>548</b>	<b>480</b>	<b>1631</b>	<b>1623</b>	<b>1186</b>
Part of the purchases in value	6,0%	4,8%	4,0%	36,5%	36,9%	44,3%			
Rate of equipment	66,0%	59,9%	64,2%	89,0%	91,5%	92,5%	80,0%	80,7%	82,3%

Source: Enquêtes budget des familles, INSEE.

Figure 3. Number of average months of salary necessary to buy an average car in France (1963-2005)



Source: CCFA

In order to do so, not only they had to multiply their marketing and commercial efforts, but they also came to the conclusion that the growing expectations of these elusive customers and their shifting and unpredictable preferences required from them an even larger offer of models that had to be renewed faster. We can see therefore behind the well-known discourse on “*the growing expectations of customers more and more difficult to meet*” the effects of this change of regulation.

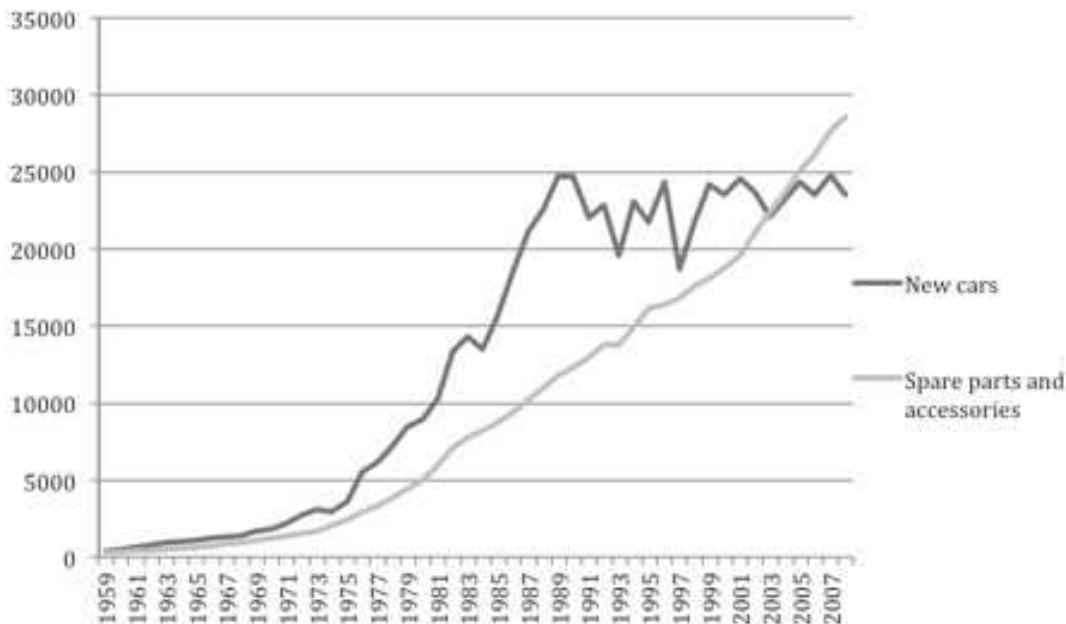
Those who adhered to this narrative were not necessarily aware of its implications. As a result, the faith in this discourse led the carmakers to give to the customers more room to formulate even greater expectations and to behave in even more unpredictable ways by extending and renewing incessantly the range of choices available. Furthermore, despite the efforts deployed at the level of the

productive organization to sustain this increasing variety and shorter cycle products at constant costs, these targets were simply impossible to meet.

The outcome of this process has been a structural tendency to increase relative prices of new cars that promotion and discounts could not compensate (figure 3). This tendency contributed also in accentuating this on-going trend and in self-sustaining it. On the one hand, carmakers were led to believe that the supposed saturation of the mature markets implied greater differentiation and faster renewal of models as the only way to seduce these difficult customers. On the other hand, by this mimetic behaviour they did indeed generate a saturated market.

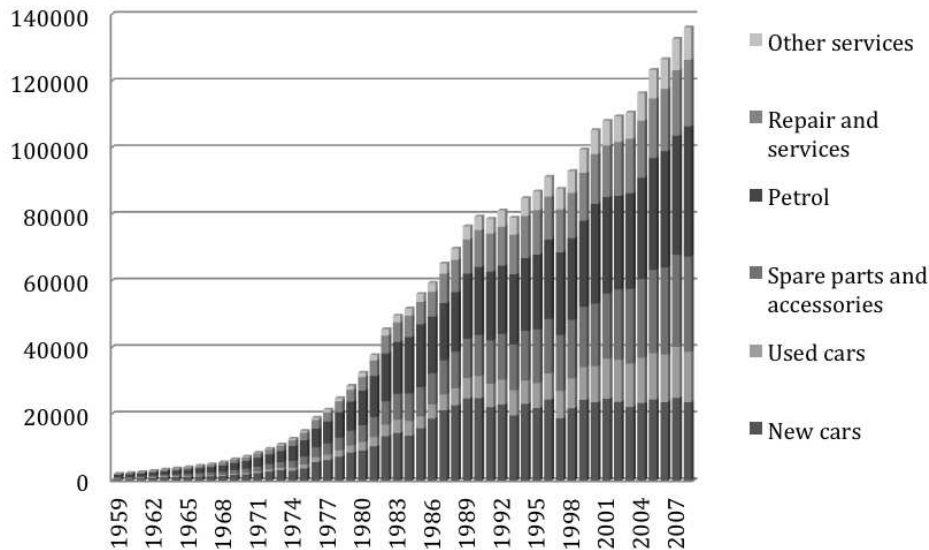
One of the outcomes of this situation has been a chronic difficulty to make profits by selling new cars. And this has had a perverse impact on those who could not afford to buy a new car. Indeed the temptation to make up for this lack of profitability on the after-sale and on services (i.e. credit) was very strong. And all along the value chain, from suppliers to carmakers, from distributors to dealers, the 1990s and 2000s have witnessed the generalisation of a system of cross-subsidies from the activities related to the use of cars (after-sale, sale of parts, services) to the activities related to the production and the sale of new cars. As a result, the growing number of customers who had to equip themselves with second hand cars ended up paying more and more to use their car (figure 4).

Figure 4. Household's expenditure in new cars and spare parts and accessories in current million euros (1959-2009)



Source: Enquêtes budget des familles, INSEE.

Figure 5. Households' expenses in motorisation in current million euros (France – 1959-2009)



Source: Comptabilité Nationale, INSEE.

It was therefore the poorer who had no other choice than driving aging second hand cars who had to pay through their maintenance expenses for the incapability of the carmakers to make profits on the sale of new cars to the richer (figure 5).

This trend explains also why the after-sale market has been marked during this period by the successful entry of new actors. Since these new actors were free of the burden of having to subsidize the sale of new cars and to maintain an expensive sale force, they could propose a competitive offer of after-sale services to the customers “abused” by the carmakers and their dealer networks. This explains notably the rapid development of the new chains of quick repair shops and the good resistance of the traditional network of independent repair shops (Jullien 2008). But despite these recent evolutions, the underlying trend has not been modified (figure 5) and this keeps generating a very much inegalitarian access to motor mobility in France.

### III. The production side: at the core of the antifordist dynamic

The “Fordism” is symbolically linked to the intuition of Henry Ford that the creation of a mass market for his Ford “T” required the famous five dollars a day wage for his workers. Of course, the “Fordism” as a capitalist mode of regulation cannot be reduced to this intuition (Aglietta 1979), but it represents somehow its cornerstone: the regular and predictable growth of a mass market of goods is linked to the stable and predictable growth of wages and to the reduction of inequalities. It is notably from this perspective that Lipietz opposes the fordist distribution of revenues shaped like a hot-air balloon to the hourglass shaped distribution of revenues emerged since the 1980s:

“[In the fordist societies] The distribution of revenues takes the shape of a potbellied hot-air balloon (few rich, few poor, a lot of middle classes) that rises regularly and together. The hierarchy of wages is indeed firmly constrained by collective agreements: the well-off, the middle class, the working class, have access successively to the same structure of consumption, which rises then following trajectories that are



differed in time but similar. The life-style of the engineer precedes of few years that of the skilled worker, which shows the way to the unskilled one" (1998, p. 24).

Now, the evolution of the automobile offer of the 1980s and in particular of the 1990s, contributed in two ways to the transition to the "glass-clock" society.

On the one hand, since the core of the market was not represented anymore by the middle classes to which the autoworkers could aspire during their careers, carmakers came to consider (consciously or not) that the fordist link was forever broken. They have therefore sacrificed the redistribution of the productive gains to workers to the search for competitiveness in the international arena. This drift was also inherent to the diffusion of the lean production paradigm as a new conception of control.

On the other hand, the proliferation of models, their faster renewal and the accelerated introduction of new technologies required by this commercial strategy, generated rising engineering and production costs for a production whose prospects were more and more uncertain. In order to face this double constraint, carmakers increased the pressure on the production structures to reduce costs and increase flexibility.

This has led, notably in France:

- to a wave of externalisations of the lower value-added activities in order to get a sizeable part of the employment out of the advantageous collective agreements of the automobile industry (Gorgeu & Mathieu 2005);
- to a systematic competition between production sites at the European and international scale to obtain investments in exchange of greater flexibility of employment and work (Charron 2004; Fetzer 2005);
- to a generalisation, in particular at the suppliers level, of precarious and temporary jobs (Gorgeu & Mathieu 2009);
- to the deskilling of work that has allowed a further reduction of the wage bill (Gorgeu & Mathieu 2008);
- and, more recently, to a rapid relocation of the production but also of design activities towards low wages countries inside the European Community<sup>9</sup>.

Conversely, one can also say that this drift in the commercial strategy of the carmakers was possible, because the carmakers could take advantage of this room to manoeuvre, and did not hesitate to do so. At this level, the rise of mass unemployment, the weakening of trade unions and the defeat of the strikes of the early 1980s (Hatzfeld & Loubet 2004; Hatzfeld et al. 2005; Beaud & Pialoux 1999) generated a favourable environment to this change of course, while the introduction of Japanese methods brought to the core of the industrial system this inherent logic of systematic cost reduction.

The result of this double trend is a powerful anti-fordist dynamic. Despite the relative stability of the market share of the French carmakers both in France and Europe, since the early 1980s there has been a clear decoupling between the rise of the hourly productivity and its remuneration (figure 6) accompanied by a dramatic reduction of employment in the sector (figure 7). The generalisation of this anti-fordist logic within the industry, but also within the services, contributes therefore to

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<sup>9</sup> Between 2004 and 2010 the production of new cars in France has dropped by 47,1% while the sales of French carmakers have slightly increased (source: CCFA).

the rise of inequalities. This reinforces the locking-in of the carmakers in their commercial offer, while making it –paradoxically– less and less sustainable.

Figure 6. Hourly cost of work and hourly productivity in the French automobile sector in constant euros 2000 (1949-2008)

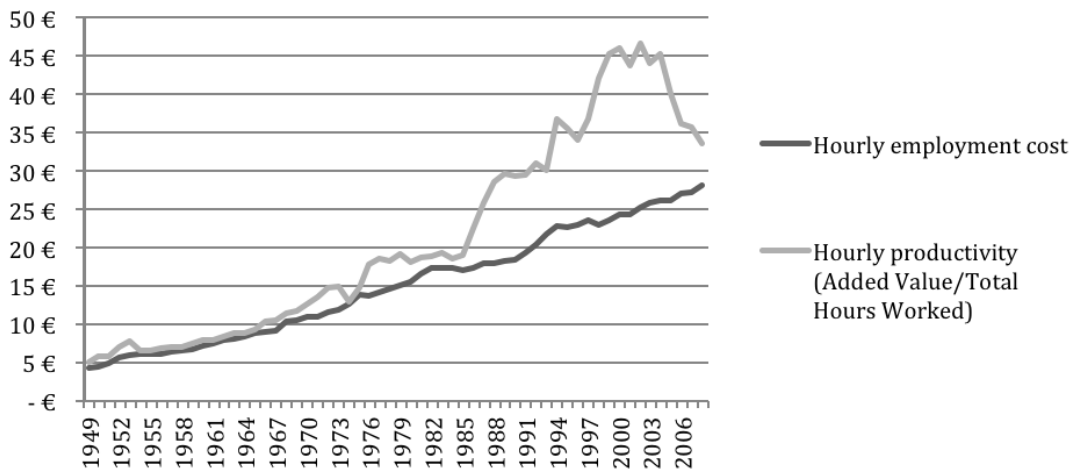
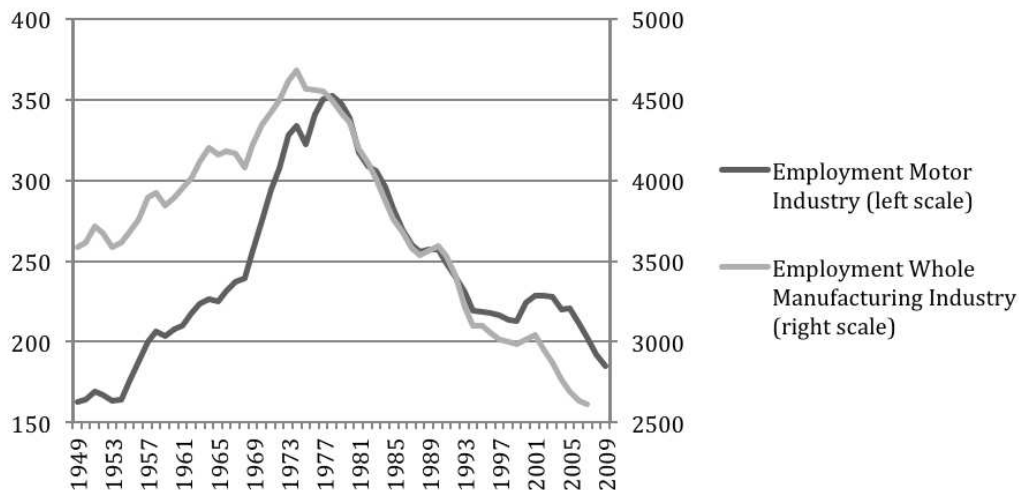


Figure 7. Number of employees in the French automobile industry and in the manufacturing sector (1949-2009) – in thousands



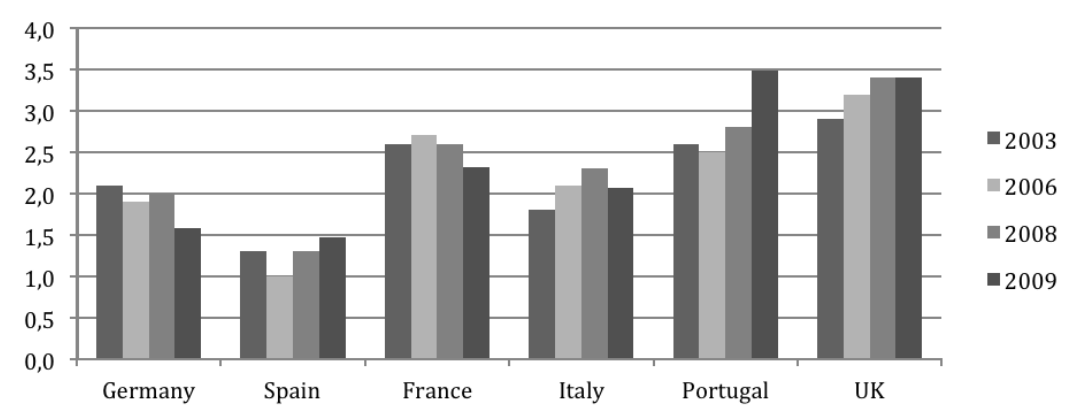
Source: INSEE – EAE.

## IV. A European conception of control

Whether we consider the relative weight of the expenses to acquire a new car versus a second hand car (figure 8), the average age of the buyers of new cars (figure 9), or the average rate of increase in the cost of car ownership and in retailing prices of new cars (figure 10), it seems that the evolutions identified in France are largely present in all the other mature markets in Europe. Beyond the fact that the macroeconomic changes that have affected the distribution of revenues in France are for most of them even more pronounced in the other countries of the EU (Amable 2005), this is not very much surprising since the underlying conception of control is not specific to France. Despite the fact that this way of considering what is best to do in order to be successful in the automobile sector suits better the interest of the

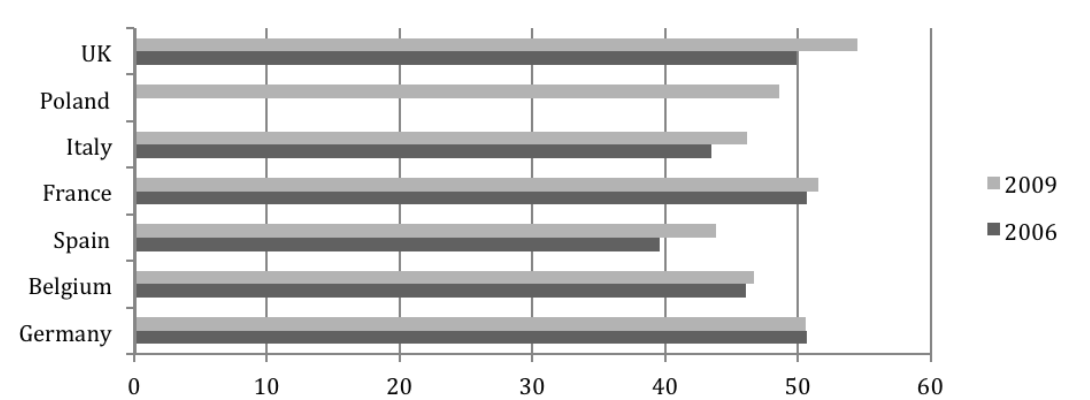
German automobile industry than those of the other European countries (being the German carmakers the best placed to sell successfully expensive cars), all the European carmakers and suppliers, including Fiat, PSA and Renault, adhere to this conception of control.

Figure 8. Ratio Second hand cars sales / New cars sales (major EU countries – 2003-2009)



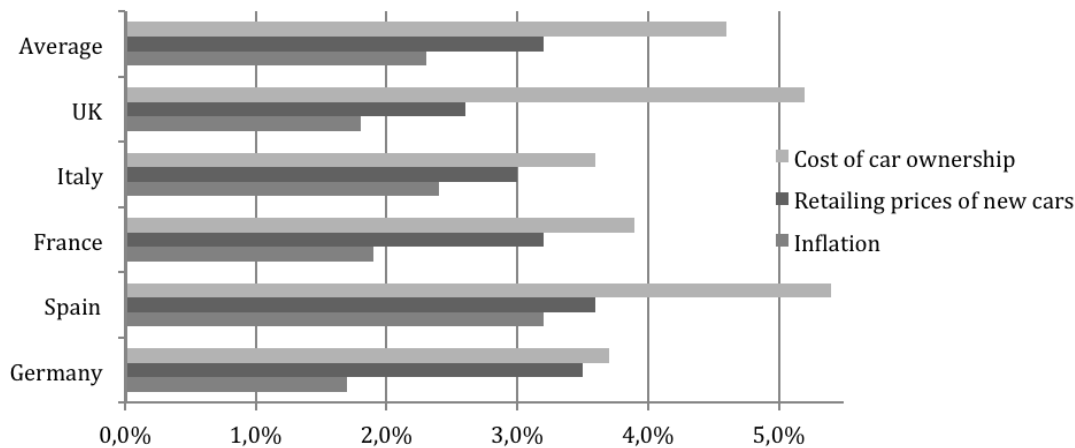
Source: Cetelem.

Figure 9. Average age of buyers of new cars (major EU countries – 2006-2009)



Source: Cetelem.

Figure 10. Average annual rate of increase of acquisition and ownership cost of car between 1998 and 2008 (major EU countries)

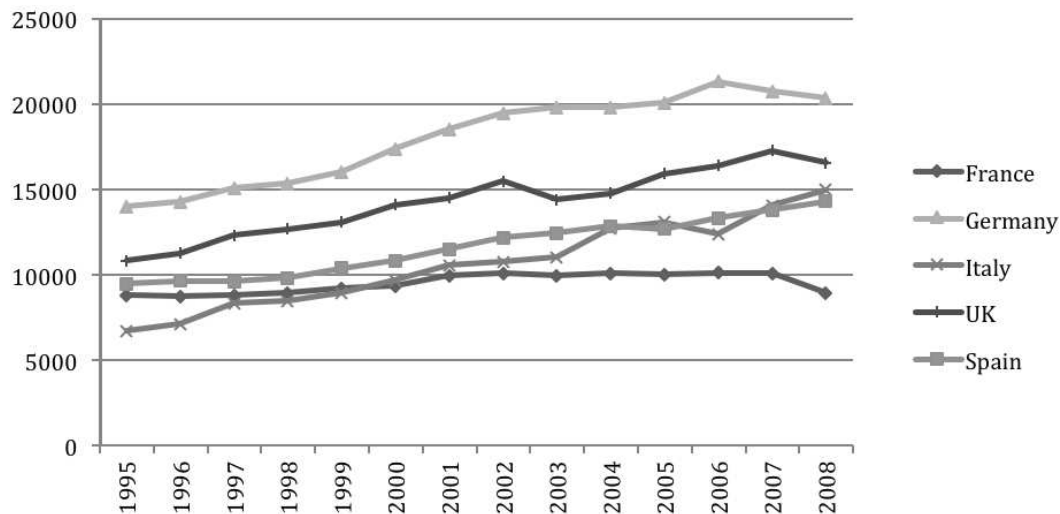


Source: Cetelem (BIPE based on EC).

This submission of the “dominated” carmakers to a conception of control that does not suit their interests can be observed through their ambition to be present in the high-end segments to contest the quasi-monopoly acquired by Daimler, BMW and Volkswagen on the sale of these luxury cars. Despite the fact that their domestic markets are much less welcoming to the luxury and semi-luxury segments, PSA, Renault and Fiat have systematically tried to develop platforms and models capable of justifying prices of more than 25 000 € when the average of their sales is in fact located between 10 000 € and 12 000 € (figure 11). If this is the case, it is because the race to the renewal, the variety and the technological amelioration is directly linked to the capability of the carmakers to obtain from a substantial part of their customers the willing to pay for expensive cars. This is indeed what allows to develop –or to make develop from first-tier suppliers– the main technological advances that would be then diffused to the rest of the range. Within this logic, all the carmakers have to focus their efforts to be present in the top-of-the-range otherwise they would abandon the monopoly of the technological innovation to the German groups<sup>10</sup>.

Figure 11. Average export values of passenger cars (major EU countries – 1995-2008) - Euros

<sup>10</sup> A key technology of the 2000s in the field of diesel engines has been the common rail. It has been introduced by Fiat in 1998 in the Alfa Romeo 156 and has contributed significantly to the re-establishment of the group. If Fiat had not been able to preserve even a marginal presence of its brands in the higher range of the market, it would have not been able to remain competitive in the technological race implied by the conception of control in place.



Source: Eurostat

But beyond this “trickle down” logic of technological innovation (Aghion & Bolton 1997), the marketing in the automobile sector adheres as well to this conception of control, and considers the small cars in the range of each brand as cheaper imitations of the bigger vehicles that are often presented by the specialised press as the “flagships of the range”. Therefore, even if the volumes involved and the chances to obtain market share in this dominant segment in Germany, but marginal in Italy or France, are very limited, Fiat, PSA and Renault devote important amount of efforts and money to fulfil these targets, at the detriment of their entry of the range<sup>11</sup>.

This mimetic logic, which emerges spontaneously from competition and explains in broad terms the contrasted trajectories of the European carmakers, is also reinforced by the normative practices that have been put in place at the EU level. Indeed, even though Fiat and PSA have from time to time emphasized the need to focus on the “affordability” of the vehicles on the market<sup>12</sup>, the two major forms of intervention of the Union in the regulation of the sector that are the road safety and the protection of the environment, have been used in ways that have contributed to reproduce and protect this conception of control.

Instead of limiting the impact of the automobile vehicles on road safety and on the environment by aiming at reducing the size, the weight, the power, the top speed or the acceleration of new cars, the European norms have aimed at equipping these cars with new technological devices to reduce risks and emissions without compromising the race to variety and performance.

ABS, ESP, Airbags, catalytic converter, diesel particle filters and pedestrian impact directive have been successively made compulsory with the consequence of

<sup>11</sup> During the 2000s PSA has made a lot of efforts to keep in its range not only the C5 and 407 but also the C6 and 607 whose volumes of sale were between 10 and 15 times lower than those of the BMW series 5 or of the Mercedes class E against which they were directly in competition. By contrast, PSA has renewed during the same period its 106 (in competition with the Renault Twingo and the Fiat Panda) by co-developing with Toyota a common model (C1 for Citroën, 107 for Peugeot and Aygo for Toyota) that is almost identical for the three brands.

<sup>12</sup> See in particular: CARS 21, Mid-Term Review High Level Conference, Conclusions and Report, EU, 2008.

making all cars introduced in the EU market more expensive, but also heavier and bigger. In order to propel these cars without compromising their performances, the power of the engines had to be systematically increased. As a result, most of the progress achieved with the new engines has been used to preserve the acceleration and the top speed of these heavier cars rather than to reduce the level of consumption. The paradoxical outcome of this trend is that the carmakers that produce the heavier and most powerful vehicles appear as the most ecological ones because they have the means and the motivations to develop the technologies that allow vehicles of two tons to consume 5 litres of petrol for 100 kilometres. Typically, the new hybrid engines have been introduced first on the SUV of luxury brands as Lexus, BMW or Mercedes providing at the additional cost of 5 000 € up to 8 000 € a reasonable level of consumption and emission. Similarly, electrical vehicles have been so far developed in the higher range (Tesla, Mini E) on the basis of the same specifications of conventional vehicles at prices that float between 35 000 and 150 000 €.

In making compulsory these technologies, the regulation institutionalizes or naturalizes the conception of control “trickle down”. In practice, this means that barriers to entry have been placed against those vehicles that would try to swim against the tide: for example, the need to put the “low cost” Logan in conformity with the European regulation has increased the production cost by more than 10% (Jullien et al. 2012). In the case of the famous Tata Nano the press suggested that its price would more than double if it had to satisfy the European norms<sup>13</sup>.

This normative dynamic has the support not only of the carmakers that are the most present in the luxury segments but also of the main first-tier suppliers. These are indeed those that supply the automobile systems with new technologies and it is to their own advantage if these technologies co-developed with different carmakers become compulsory and diffuse to the rest of the brands and models. To the extent that these suppliers promise to the regulators to reduce the cost of these technologies as soon as their diffusion will increase their economies of scale, the issue of their “affordability” appears, at least on the paper, solved. This has been the case of the ABS, and the ESP and Stop and Start are now the next technologies on the list.

Nevertheless, as we have stressed before (see figure 10), this race to develop new technologies, to increase the variety of the offer, and to accelerate the pace of its renewal, contributes to the constant rise of the retail prices for new cars and of the costs implied by their production and it also generates a saturated market that makes difficult for most of the carmakers to be profitable in selling new cars. In this context, the European integration has provided to carmakers and suppliers the opportunity to shift production and investment from their domestic high-wages countries to the new low-wages entrants in the EU. This has concerned in particular the production of small and medium cars whose margins are most affected by the dynamic described above.

For example in the case of France, imports from new entrants<sup>14</sup> have increased six times (in value) from 2003 to 2009, rising from 2,8% of total imports to 16,1% in 2009 (source: Eurostat). Most of these imports are due to small and medium cars

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<sup>13</sup> Source: FT, *Tata Motor sets Nano Europe launch date*, 04/03/2009.

<sup>14</sup> The data refers to Czech Republic, Poland, Slovenia, Romania and Hungary.

produced by Renault and PSA in Romania, Slovenia and Czech Republic and sold in France<sup>15</sup>. The same is true for Italy: imports from Poland, where Fiat produce nowadays most of its small cars, have increased almost four times (in value) from 2002 to 2009, rising from 3,9% of total imports to 14,1% in 2009 (source: Eurostat).

From this perspective European integration reinforces on two counts the antifordist dynamic observed in the French case. On the one hand, it allows the carmakers to increase the pressure on wages and employment conditions in their domestic countries. On the other hand, since new entrants are integrated as low cost countries, they produce relatively expensive cars that are exported to high wages countries. Hence, there as well the fordist link is broken and carmakers and suppliers do not see why they should raise the wages of Polish, Czech, Romanian or Slovenian workers at the same pace of their productivity gains. As a result, sales of new cars in these countries stagnate: they have indeed regularly dropped from about 800 000 vehicles in 1999 to slightly less than 600 000 in 2009<sup>16</sup>, and the share of passenger cars on the road older than 10 years in these countries is stable at around 65% against a EU 12 average of 28% in 2009<sup>17</sup>.

## Conclusion

If the analysis presented in this paper is right, the general dynamic of the automobile sector in Europe and the managerial credo that has carried it, have to be considered at least as much the producers of the “new consumer” and of his requirements as the consequences of his “existence”. But because automobile companies sound the behaviour of this “new consumer” with methods that consist mainly in focusing on the buyers of their own products or of those of their competitors, marketing and sale people are persuaded that this is a reality that cannot afford to ignore. As a result, they provide (in good faith) the top management and their colleagues in production and in human resources with injunctions that nourish the inherent antifordist dynamic of this conception of control and lock-in the industry in a more and more unsustainable form of development.

Even if the economic logic that explains this historical movement goes largely beyond the automobile industry, the automobile companies retain a form of macro-economic responsibility both in the way they influence on regulation at national and supranational levels and in the way they put people to work. As it stems for example from the French debate on the competitiveness of the sector during the recent crisis<sup>18</sup> and from the interpretations that has been given at this occasion of the “German model”<sup>19</sup>, it is clear that this responsibility is exerted today in a way that reinforce the adherence to an antifordist logic of globalisation and that contribute in making

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<sup>15</sup> We have calculated that that the ratio between the domestic production of small cars (segment B1) by French carmakers and their domestic sales has fallen from 100% in 2005 to 12% in 2009 (sources: CCFA and ACEA) due to the effects of the relocation of production.

<sup>16</sup> The data refers to Hungary, Slovakia, Czech Republic and Poland (source: ACEA).

<sup>17</sup> Source: Eurostat (this data has been compiled by Vera Scepanovic (Central European University) for the FP7 project ICaTSEM: <http://icatsem.u-bordeaux4.fr/>).

<sup>18</sup> See: <https://www.pfa-auto.fr/>

<sup>19</sup> See: <http://www.coe-rexencode.fr/public/Rencontres-et-debats/Competitivite-de-la-France-le-debat/>

the EU a sort of mini-globe where the competition between countries and regions is the rule.

The waves of relocation implied by this logic (see Klier, Rubenstein, 2011, this issue), as well as the underlying trend of technological and commercial innovation, are therefore justified in the name of a consumer that is in reality more and more older, richer and rarer. As our paper shows this “new consumer” is not the cause of this trend, but one of its political and cultural consequences. More broadly, our paper shows that the post-fordist narrative model implied by this argument is a myth aimed at decoupling production and market dynamics in order to depoliticize the issue of how people are put to work and how they can afford to consume. Hence, all the importance of re-establishing at the analytical level the political and social links that subsist between these two sides of the capitalist economies.

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