

**THE FINANCIAL STRUCTURE OF AUTOMOBILE CORPORATIONS IN THE 2000s:
TOWARDS A MORE “FINANCIALISED” PATTERN?¹**

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Abstract

Important changes in the economic system both in productive and financial dimensions have been observed since the 1970s, pointing to a growing capital mobility and a stronger presence of finance within the logic of non-financial corporations. This paper aims to analyse this increasing role of finance in the dynamics of automobile companies. Data from the annual financial statements of selected carmakers (Daimler, Fiat, Ford, General Motors, Honda, Hyundai, Toyota and Volkswagen) between 2000 and 2009 are considered, in order to verify the occurrence of a “financialisation” movement in this industry and possible differences among the groups in this process. The financial dynamics are characterised under three perspectives, each one being discussed in a specific section.

In the first section, companies’ asset and capital structure is highlighted. In the second section, the participation of the financial segment in the corporate activities is assessed due to the possibility of significant non-operating gains from these operations. In the third section, the groups’ degree of financial exposure is examined, since it may represent a higher financial fragility as part of companies’ cash flows is committed to interest and dividend payments or buyback operations. From the analysis a clear movement towards a more “financialised” pattern of the carmakers’ structure can be observed, although there were notable differences among them according to the corporate dependence upon activities from the financial segment and the degree of fragility of their financial structures. Such differences contribute to the explanation of

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why some corporations, especially American companies, were more affected than others during the recent international economic crisis, thus imposing a need for rethinking the role of the financial dimension in corporate dynamics.

Keywords: automobile corporations; financial structure; “financialisation”; global economic crisis; heterodox economics.

JEL Classification: F23; G32; L21; L62.

1. Introduction

Significant changes in the economic system both in productive and financial dimension have been occurring since the 1970s and the 1980s. Productive modifications involve a combination of different processes, such as the intensification of production internationalisation and trade, a more intense competition at global level and an increasing integration of productive structures of national economies. Financial changes are related to the interaction of three phenomena, which are the expressive expansion of international financial flows, a fiercer competition in the capital markets and a higher integration of international financial systems⁵. These movements are reflected in the adoption of a wide variety of financial management strategies by non-financial corporations through the constant monitoring of net cash flows, merger and acquisition operations (M&A) and the use of mechanisms, such as derivatives, to hedge against or profit from interest and exchange rates fluctuations (Chesnais, 1994 and 1996; Gonçalves et al., 1999).

According to Belluzzo (2005, p.228, authors’ translation), the global economy after the end of the Bretton Woods regime in the 1970s was characterised by three movements: “the financial and foreign exchange liberalisation; the changes in the competition pattern; the modification in the institutional rules governing trade and investment”. The first movement represented an expansion of liberalisation and deregulation processes of financial and foreign exchange markets both at national and international level. This resulted in an intensification of the “financialisation” process of the economy⁶ through a higher degree of financial asset flows and stocks in the composition of private income and wealth. As Coutinho & Belluzzo (1998, p.138,

⁵ As Chesnais (2005b, p.46, authors’ translation) stresses, the financial globalisation, or “mundialisation” in the author’s words, results from three processes: “the monetary and financial deregulation or liberalisation, the compartmentalisation of national financial markets and the disintermediation, i.e. the expansion of lending operations, previously reserved to the banks, to all sort of institutional investor”.

⁶ A broad definition of this concept can be found in Epstein (2005) and Palley (2007).

authors' translation) state, economic agents "began to subordinate their spending, investment and saving decisions to their expectations of the pace of their financial enrichment". This process was reinforced by the development of even more complex financial innovations, such as securitisation and derivatives operations, and by the surge of new agents, such as institutional investors (e.g. mutual funds, insurance companies and pension funds)⁷. If, on the one hand, all these phenomena made high speculative and patrimonial gains possible, on the other hand, they made the system much more unstable and subject to systemic risks, given the high leverage degree and asset price volatility⁸ (Tavares & Belluzzo, 2002, p.153).

The second movement, related to the changes in the global competition strategy of large corporations, was characterised by a relocalisation of productive facilities and a capital concentration and centralisation, both reflected in growing foreign direct investment flows (FDI), especially of M&A operations. The strategy for creating global productive networks contributed to change investment and trade flows. Simultaneously, corporations adopted strategies to promote technological modernisation, including the establishment of joint ventures, and also asset "financialisation", aiming for a combination of profitability and liquidity in their portfolios.

The third movement, in its turn, was caused by the pressure of the economic agents in this new competitive environment on the institutional rules governing trade and investment, so that national states could make trade and investment inflows and outflows more flexible, thus moving them towards a global scale. In the context of globalisation, it meant the promotion of trade and financial openness which resulted in a higher or lower external vulnerability for the countries, depending on the degree that the openness was conceived (Tavares & Belluzzo, 2002).

For the large corporation, all these movements represented a technological change, a productive restructuring and an increasing presence of the quest for financial appreciation into its dynamics⁹. The corporation's logic of growth and survival became dependent not only upon its productive activities, including technological progress and investments, production and sales elsewhere, but also upon the financial possibilities of

⁷ These investors "adopt portfolio management strategies, reducing the average time of holding shares in accordance with more 'immediate' capital gains, internationalising their applications and feeding the growth of derivatives markets" (Braga, 1997, p.206, authors' translation).

⁸ In Guttman's words (2008, pp.15-16, authors' translation), "key innovations, although they gave to the general credit system flexibility and reaction capacity in relation to creditors' and debtors' needs, they also encouraged asset bubbles, risks underestimation and excessive leverage".

⁹ See Chandler (1990), Braga (1997) and Gonçalves (2002).

resource application and funding. The widespread movement of the financial globalisation process suppressed the existing barriers to capital mobility. In this sense, as a result of a competitive dynamics¹⁰, companies entered much more intensively into financial markets, either for raising funds or investing resources in profitable and liquid assets. Therefore, finance became a strategic and decisive element within the corporation's logic¹¹.

This tendency towards a higher importance of finance within the corporation was also a consequence of the logic of maximising shareholder value¹², i.e. managing the company by aiming to increase its stock value and to distribute dividends to the owners of the company's shares, which were in most cases big institutional investors with diversified and global portfolios. Short-term results became a major goal for corporations, very often contrary to their long-term activities and gains¹³. As Guttman (2008, pp.12-14, authors' translation) points out, "large increases of financial assets in the portfolios of non-financial corporations [...] with financial income (interests, dividends, capital gains) becoming in the same extent more important" were observed.

According to Lazonick & O'Sullivan (2000), there was a change in the corporation's strategic orientation from "retain and reinvest" to "downsize and distribute". The central strategy for retaining profits and reinvesting in the company's growth¹⁴, which predominated in the "Golden Age" of capitalism when finance mainly played the role of supporting investment plans, has been modified from the 1980s onwards. Since then, corporations have aimed to downsize their workforce, in order to rationalise production and reduce costs, and to distribute dividends to shareholders, besides using income to increase dividends or repurchasing shares to raise their prices. In such strategies, a greater interpenetration between the functioning of financial markets and the performance of big corporations was promoted.

¹⁰ Braga (1997, p.216, authors' translation) emphasises this fact: "as a result imposed by competition and risk management, companies engage themselves in finance that does not only imply an adequate debt and liability structure (to immobilise capital), but at the same time build an adequate creditor/asset position to have mobility, flexibility, innovative agility and velocity in capturing profitable opportunities in the several national productive and financial markets".

¹¹ According to Chesnais (1995, p.11, authors' translation), "the groups' 'financialisation' degree has increased in a considerable manner. This refers more and more to financial groups, undoubtedly with industrial dominance, but also with a diversification to the financial services, besides an increasingly important activity as operators in the exchange market".

¹² Process initiated through the separation between the company's property and control and intensified by the depth of the increasingly broad and liquid financial markets.

¹³ For more details about different features of the corporations' "financialisation" process, see Aglietta & Rebérioux (2005), Borghi & Rocha (2010), Chesnais (1994, 2005a and 2005b), Coutinho & Belluzzo (1998), Crotty (2002), Farhi & Borghi (2009) and Plihon (2005).

¹⁴ About the company's growth with a long-term perspective, see Penrose (1959).

From this background, this paper aims to analyse the increasing role of finance in the dynamics of automobile corporations. Data from the financial statements of selected carmakers (Daimler, Fiat, Ford, General Motors, Honda, Hyundai, Toyota and Volkswagen) between 2000 and 2009¹⁵ are taken, in order to verify the occurrence of a “financialisation” movement in this industry and possible differences among the groups in this process. The financial dynamics are characterised under three perspectives, each one being discussed in a specific section. In the first section, companies’ asset and capital structure is highlighted. In the second section, the participation of the financial segment in the corporate activities is assessed due to the possibility of significant non-operating gains from these operations. In the third section, the groups’ degree of financial exposure is examined, since it may represent a higher financial fragility as part of companies’ cash flows is committed to interest and dividend payments or buyback operations. Some concluding remarks follow.

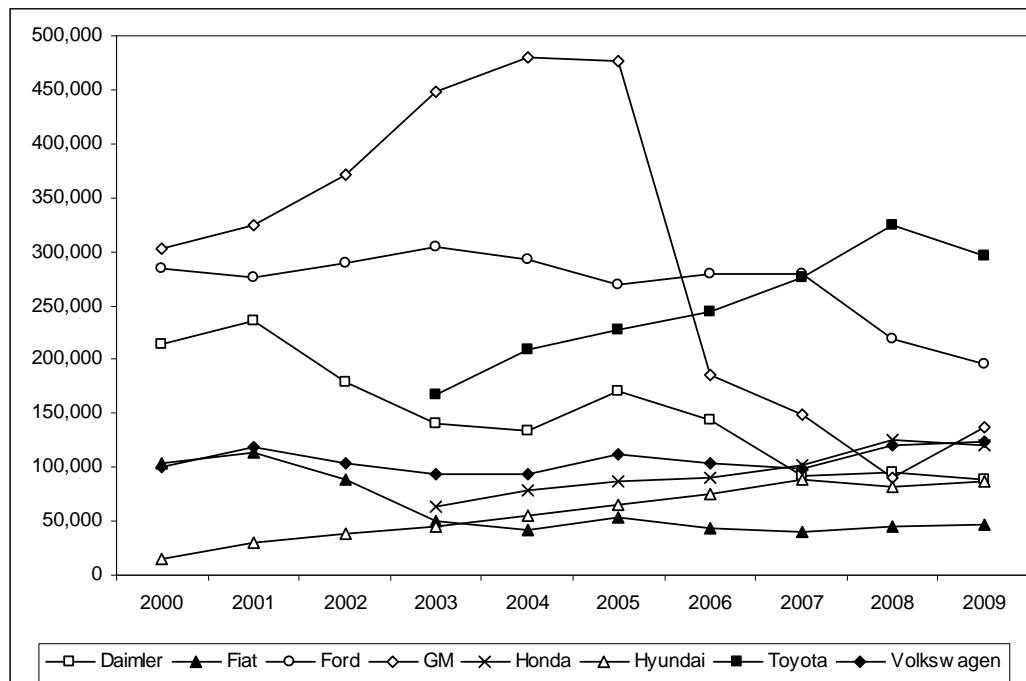
2. Asset and capital structure of automobile corporations

The analysis of the corporations’ assets and liabilities structures allows the identification of their main resource applications and funding. It also provides features to understand companies’ degree of capital immobilisation and financial exposure as it makes possible a comparison between short- and long-term positions and the dependence upon external resources to the enterprise.

Chart 1 shows the evolution of companies’ size during the 2000s measured by the amount of their assets. In the first half of the decade a predominance of the so-called Big Three, the three giant American companies of the sector (General Motors, Ford and DaimlerChrysler¹⁶), was observed. For instance, GM accumulated assets of almost US\$ 480 billion in 2004. Ford’s wealth surpassed US\$ 300 billion in 2003.

¹⁵ The choice of these carmakers was based on their relevance within the industry in terms of world production and sales, as well as the diversity of their regions of origin (United States, Europe and Asia). The period, by its turn, was selected due to data availability for most of the companies. It may be emphasised that data for Honda and Toyota just begin in 2003. However, in order to avoid information losses, it was decided to use data from 2000 onwards for all other companies. Moreover, differently from other companies’ fiscal year, which ends in December 31st of each year, in the case of Japanese corporations fiscal year ends in March 31st of the referred year. All data were extracted from the annual financial statements released by the respective carmakers in their websites, listed after references at the end of this paper. A consolidated data set is presented in Borghi (2011).

¹⁶ The merger, one of the biggest in this sector, ended after the sale of Chrysler at US\$ 7.4 billion for Cerberus Capital Management, which acquired 80.1% of its shares and operations in financial services in 2007. As a result, Daimler extricated itself from financial obligations related to retirement costs and pension funds (US\$ 19 billion), one of the challenges faced by American carmakers (Valor Econômico, 2007). About the problems of this controversial merger, see Köhler (2009).

Chart 1 – Evolution of assets of selected carmakers, 2000-2009 (US\$ million)

Source: authors' calculations based on corporations' balance sheet data.

Notes: (1) From 2007 onwards data for Daimler refer only to the Daimler Group; in the period before, data refer to DaimlerChrysler. This explains the decrease in assets from 2006 to 2007. (2) Sale of the GM's financial arm, the General Motors Acceptance Corporation (GMAC), in November 30, 2006, thus resulting in a sharp reduction of the company's assets from 2005 to 2006. (3) GM's restructuring process in 2009, releasing in that year just balance sheet data of the new company, from July 10, 2009 onwards.

However, productive and financial conditions that may have given rise to these structures have progressively deteriorated as a result of the competitiveness loss and the increasing financial fragility of American groups. The emergence of new competitors, especially Japanese companies, has challenged the sector's hegemonic pattern of American carmakers. Driven by a new productive pattern – the Toyotism¹⁷ – and the continuously concern about the development of greener technologies, such as alternative means of propulsion and lower degree of pollution emission, and more efficient vehicles with lower fuel consumption, Japanese carmakers could expand into other markets, including the United States.

In addition to the fiercer competition in the domestic market, American companies faced some difficulties in dealing with high labour and pension costs, although their debts with retired workers also represented a funding source for them¹⁸.

¹⁷ See, for instance, Womack et al. (1990), Shimokawa (1996), Freyssenet & Lung (1999) and ECLAC (2004).

¹⁸ Total costs of the Big Three's benefits model were estimated between US\$ 90 billion and US\$ 95 billion in 2007. In September 2007, a general strike in the GM's facilities in the United States occurred. It was only solved after an agreement with the UAW trade union, establishing a partial transference of the company's liabilities with the health plan of retired workers to an independent fund and the creation of a

Together with the increasing fragility of their financial structure, to be examined in this and the following sections, such factors lead American and, in a lesser extent, European carmakers to a productive restructuring process in the quest for cost reduction through downsizing by firing workers, negotiating with the U.S. automotive trade union (the United Auto Workers, UAW) to flexibilise contracts, relocating global production or closing some facilities¹⁹. Hence, even before the recent international economic crisis, a fragile situation of American corporations during the decade could be observed²⁰.

Asian companies, such as Honda, Hyundai and, particularly, Toyota, registered a great expansion of their assets in the period. Toyota's total assets were around US\$ 325 billion in 2008 when the company became the world major carmaker. Among the European groups, different patterns were verified. Whereas Volkswagen showed an increase in its assets, Fiat presented a decline in the early decade as a consequence of some difficulties faced after the partnership with GM in 2000 regarding competitiveness loss, sales decrease and high indebtedness degree²¹ (Chart 1).

Important patrimonial changes have occurred during the decade, thus reflecting in the assets evolution and the following indicators. Due to the sale of its financial arm at the end of 2006, GM reduced its assets in approximately US\$ 290 billion from 2005 to 2006. By adopting downsizing strategies GM and Ford promoted asset shrinkage through the sale of low-profitable brands as part of their restructuring plans and as a

program of resignation, in order to allow cost reduction. As White & McCracken (2007, authors' translation) point, "Detroit's problems are derived from a permanent reorganisation of the world automobile industry in the face of globalisation", stressing "what has been increasingly clearer in recent years: that it is Toyota Motor Corp., not GM or the UAW, who establishes the parameters of labour cost in the American automobile industry", since the difference between the cost of unionised operations in the U.S. and facilities of Toyota and other Asian and European carmakers without trade unions was about US\$ 25 and US\$ 30 per hour.

¹⁹ About labour and other challenges faced by American companies, see for instance Osang (2006a, 2006b and 2006c) and The Economist (2005a, 2005b, 2005c and 2006). For some strategies adopted by GM, Ford, Chrysler, Volkswagen and Renault in reaction to the rise of the Asian competitors, see Mackintosh (2006).

²⁰ About this discussion, see Borghi (2007) and Andrade (2009).

²¹ See The Economist (2002) for the problems faced by Fiat and the partnership with GM, and The Economist (2005d) for the company's recovering, which involved not only the end of the GM's 20% stock ownership agreement – in 2000 GM invested US\$ 2.4 billion and in 2005 it had to spend US\$ 2 billion to undo the transaction –, but also the restructuring promoted by Marchionne when he became Fiat's CEO. The restructuring plan consisted of launching new vehicles, using common platforms in producing vehicles from Alfa Romeo's brand, sharing components with other brand of the group (Maserati) and establishing alliances with other corporations in order to reduce costs and take advantage of economies of scale. About the group reorganisation, see also Volpato (2009).

way to raise funds²². The end of the merger between Daimler and Chrysler in 2007 also represented a decrease in the total assets amount of the Daimler group.

According to the corporations' balance sheet data, current assets, which were mostly composed of short-term financial investments (cash, cash equivalents and short-term securities), financial receivables and inventories, tended to predominate in American companies (Ford, GM until 2005 and DaimlerChrysler) and some of European groups (Fiat and Volkswagen in some years). In the Asian Honda, Toyota and, especially, Hyundai, long-term assets had a higher participation with emphasis on the amount invested in fixed capital (property, plant and equipment) and the long-term receivables (loans and leasing), which were important for Japanese companies. In the Big Three's long-term assets, besides fixed capital, equipment on operating leases, regarding the residual value of leased vehicles financed by their financial arms, also represented an important share.

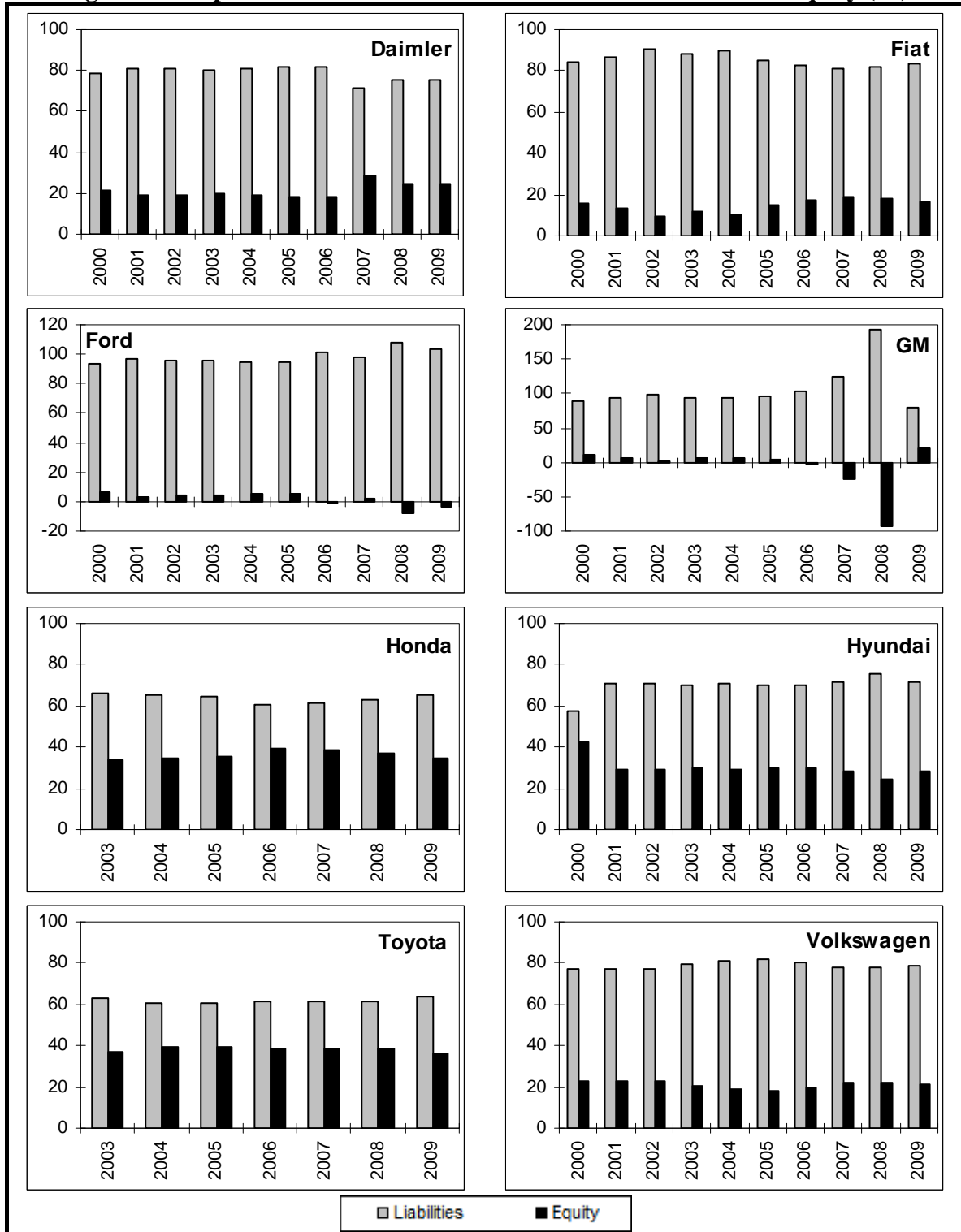
The analysis should not only focus on companies' asset structure, but also on their capital structure. Figure 1 shows that while Asian carmakers presented in general an equity share of 30% to 40% (less in Hyundai), in European companies this share was around 20% (lower in Fiat) and below 10% in the American case. That points to different indebtedness degrees of each group. As a first proxy, it highlights a sharp fragility of American carmakers' capital structures, which were basically composed of liabilities.

Therefore, it is clear that all considered automobile companies operated with a leverage degree (TL/E) superior than the unit in the 2000s, i.e. the amount of debts was bigger than the resources owned by shareholders and accumulated as results of companies' performance. In general, it was more than twice or three times the equity amount. The leverage degree tended to be lower in Japanese companies, followed by the South Korean Hyundai, European and American companies. The latter presented an extremely high leverage during the decade. Even just taking into account the short-term obligations in relation to equity (STL/E), a considerably high leverage could be observed, being less than one in the whole period only for Toyota. This fact points to a substantial companies' indebtedness and their dependence upon external sources to finance their resource applications. Additionally, the indebtedness composition

²² Part of Ford's restructuring plan consisted of selling luxury brands of its Premier Automotive Group (PAG). In 2007, Ford sold Aston Martin to a British consortium at US\$ 848 million and in 2008 Jaguar and Land Rover to the Indian Tata Motors at US\$ 2.3 billion (The Economist, 2010a). This brand sales process accelerated after the international economic crisis.

(STL/TL) shows that around 50% to 60% of total indebtedness corresponded to short-term liabilities. Long-term liabilities tended to be greater for American corporations, which registered the lowest relations between short-term and total liabilities, followed by European and Asian companies (Table 1).

Figure 1 – Capital structure of selected carmakers: liabilities and equity (%)



Source: authors' calculations based on corporations' balance sheet data.

Note: the sum of the columns for each year equals 100%.

Table 1 – Indicators of capital structure and indebtedness of selected carmakers (%)

	Daimler			Fiat		
	TL/E	STL/E	STL/TL	TL/E	STL/E	STL/TL
2000	364.2	191.7	52.6	529.6	260.4	49.2
2001	426.1	210.2	49.3	640.4	292.4	45.7
2002	430.0	209.6	48.7	966.0	366.8	38.0
2003	410.1	192.2	46.9	736.8	356.8	48.4
2004	430.3	221.8	51.5	894.3	493.5	55.2
2005	443.5	230.3	51.9	563.5	339.3	60.2
2006	445.8	220.1	49.4	480.9	257.7	53.6
2007	253.4	128.0	50.5	433.2	250.7	57.9
2008	304.0	159.5	52.4	456.5	267.2	58.5
2009	304.8	149.4	49.0	504.9	258.1	51.1
	Ford			GM		
	TL/E	STL/E	STL/TL	TL/E	STL/E	STL/TL
2000	1,375.0	649.7	47.3	877.1	451.0	51.4
2001	3,169.6	1,236.2	39.0	1,484.0	603.9	40.7
2002	2,469.8	868.6	35.2	4,748.1	1,779.5	37.5
2003	2,374.4	967.5	40.7	1,653.7	592.2	35.8
2004	1,629.4	760.8	46.7	1,605.4	597.7	37.2
2005	1,814.0	682.5	37.6	2,944.8	1,068.6	36.3
2006	-12,179.5	-4,112.1	33.8	-4,480.0	-1,624.5	36.3
2007	3,861.8	1,241.5	32.1	-519.6	-198.3	38.2
2008	-1,454.7	-478.3	32.9	-206.7	-88.0	42.6
2009	-3,090.8	-893.2	28.9	370.7	181.1	48.8
	Honda			Hyundai		
	TL/E	STL/E	STL/TL	TL/E	STL/E	STL/TL
2000	-	-	-	135.7	87.9	64.7
2001	-	-	-	247.2	155.7	63.0
2002	-	-	-	243.2	155.0	63.7
2003	192.1	118.7	61.8	233.8	155.8	66.6
2004	189.8	116.0	61.1	240.7	156.0	64.8
2005	183.3	114.0	62.2	235.5	153.0	65.0
2006	156.2	96.7	61.9	237.3	147.6	62.2
2007	161.3	93.1	57.7	253.6	156.0	61.5
2008	169.2	99.8	59.0	307.1	189.7	61.8
2009	186.1	102.6	55.1	253.3	149.4	59.0
	Toyota			Volkswagen		
	TL/E	STL/E	STL/TL	TL/E	STL/E	STL/TL
2000	-	-	-	332.1	226.7	68.3
2001	-	-	-	334.2	219.2	65.6
2002	-	-	-	341.0	197.6	58.0
2003	171.0	94.9	55.5	385.6	213.8	55.4
2004	155.5	88.1	56.6	430.0	203.2	47.2
2005	154.8	86.2	55.6	462.8	225.4	48.7
2006	157.7	89.9	57.0	406.7	198.4	48.8
2007	161.3	94.4	58.5	355.1	175.6	49.4
2008	159.1	95.3	59.9	349.1	173.3	49.6
2009	174.2	99.9	57.4	373.4	185.8	49.8

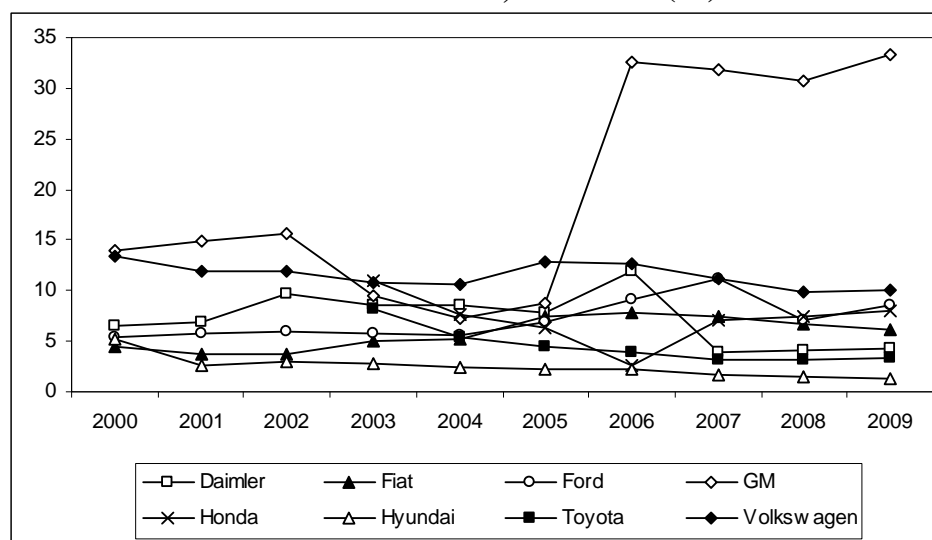
Source: authors' calculations based on corporations' balance sheet data.

Notes: leverage degree = total liabilities (TL) / equity (E); relation between short-term liabilities (STL) and equity (E); indebtedness composition = short-term liabilities (STL) / total liabilities (TL). There were negative indicators in some years for American companies due to their negative equity resulted mainly from their accumulated losses. In 2006, Ford's equity was negative and low, distorting the indices values.

One of the most important components of long-term liabilities was the retirement and pension debts. In some companies, such as GM and Volkswagen, they

represented more than 10% of total indebtedness (Chart 2). For American corporations they were debts above US\$ 10 billion while for other companies just Volkswagen had a debt amount around this value. As previously stated, the end of the merger DaimlerChrysler meant an expressive reduction of the debt stock with such obligations, as observed from 2006 to 2007. They have tended to increase in Ford in relation to the total debt amount since 2004. They almost doubled from 2004 to 2007, registering US\$ 15.3 billion and US\$ 30.4 billion, respectively. In General Motors, these debts surpassed US\$ 62 billion in 2006. The share superior than 30% since 2006 is explained by the increase in such obligations from 2005 to 2006 and, above all, by the reduction of company's total liabilities from US\$ 460 billion in 2005 to US\$ 190 billion in 2006 due to the sale of GMAC.

Chart 2 – Share of long-term retirement and pension debts in total indebtedness by selected carmakers, 2000-2009 (%)



Source: authors' calculations based on corporations' balance sheet data.

Nevertheless, although this liability amount and its cost-related obligations were an additional challenge, especially for American companies, to maintain their competitiveness facing the others, it should be argued that their more fragile situation was not simply a result of production costs disadvantages or of their pension benefits model. As already shown, American corporations presented a distorted capital structure with extremely high indebtedness degree which was also consequence of financial operations conducted within the group by their financial arms not necessarily related to their productive activities or even the vehicles financing. Despite being generally and increasingly adopted among all companies, financial practices were more pronounced in American carmakers as the following sections may suggest.

3. Participation of the financial segment in the corporate activities

The previous asset and capital structures resulted in part from the increasing weight of the financial segment within the corporation. As vehicles were relatively expensive goods, their diffusion and the middle-income population access to them depended on credit supply. Carmakers' financial subsidiaries or captive finance companies²³ were thus initially created as a way to ease the production spreading through sales financing.

The General Motors Acceptance Corporation (GMAC) was founded in 1919 by GM and in 1920 it expanded its operations to the United Kingdom. The consolidation of the financial arm of its historical main competitor and contemporary, Ford, just occurred in 1959 with the establishment of Ford Motor Credit Company. One year before GMAC already registered 40 million financed vehicles. In 1964, Chrysler Credit Corporation was set up and through an acquisition originated the Chrysler Financial Corporation in 1967. Volkswagen's bank appeared some years before, in 1949, as the Volkswagen Finanzierungsgesellschaft mbH. In 1966, the leasing company, Volkswagen Leasing GmbH, was created.

During the 1980s and in parallel to the strengthening of Japanese carmakers in the United States, their financial subsidiaries were established: the American Honda Finance Corporation in 1980 (although it just started car financing in 1986), the Toyota Financial Services in 1983 (including credit and insurance companies) and the Hyundai Motor Finance in 1989²⁴. As a comparative parameter for the degree of financial activities development in the U.S., the case of GMAC may be mentioned. In 1985, it registered for the first time earnings above US\$ 1 billion and more than 100 million financed vehicles, besides the diversification of its operations towards the real estate mortgage segment with the creation of GMAC Mortgage²⁵.

In recent years some patrimonial reorganisations occurred. In 1994, Volkswagen Financial Services AG was created in Volkswagen group to manage the corporate

²³ They are called in this way, because they are subsidiaries of a group from the productive sector whose purpose is to provide credit to consumers for the acquisition of goods produced by the corporation.

²⁴ Information on carmakers' financial arms was extracted from their websites, listed after references at the end of this paper.

²⁵ As GMAC, Ford's financial arm also started its diversification process not necessarily related to vehicles. In 1985, it acquired the First Nationwide Financial Corporation, a savings and loan institution sold in 1994. In 1987, it bought the U.S. Leasing International Inc. and, in 1989, the Associates Corporation of North America (at US\$ 3.35 billion), which would become independent in 1998 and be acquired by Citigroup in 2000. In 1994, the financial arm bought Hertz, a rental car company, which was then sold in 2005 (Bordenave, 2000, pp.250-251; Mercer, 2009, p.187 and pp.199-200).

activities of the financial segment in Europe. In order to coordinate the worldwide operations of all Toyota's financial subsidiaries, the Toyota Financial Services Corporation was established in 2000. Among American corporations, major changes were verified in General Motors and Chrysler. In 2005, GMAC launched a new holding to its mortgage operations, the Residential Capital LLC (ResCap). In the following year, due to the downgrade of GM's and GMAC's bonds (a similar situation was faced by Ford) by rating agencies to a situation of speculative grade (or junk status) and consequent greater refinancing difficulties, the corporation decided to sell 51% of the shares of its profitable financial arm to the Cerberus Capital Management. The attempt was to reduce GMAC's risk perception by investors and let it raise funds under more favourable conditions in order to keep the vehicles financing²⁶.

It is worth mentioning that Cerberus Capital Management has also become the major shareholder of Chrysler Financial since 2007 after the end of the merger DaimlerChrysler originated in 1998 and its acquisition of Chrysler group. During the crisis, in the end of 2008, GMAC obtained a Federal Reserve's (Fed) approval to become a banking holding (Dash & Bajaj, 2008). In the following year, its financing activities were extended to Chrysler's products and the Ally Bank was established, being the corporation called Ally Financial since 2010²⁷. Also in that year GM bought the AmeriCredit, an important company in the segment of subprime loans to vehicle acquisition, at US\$ 3.5 billion (The Economist, 2010b).

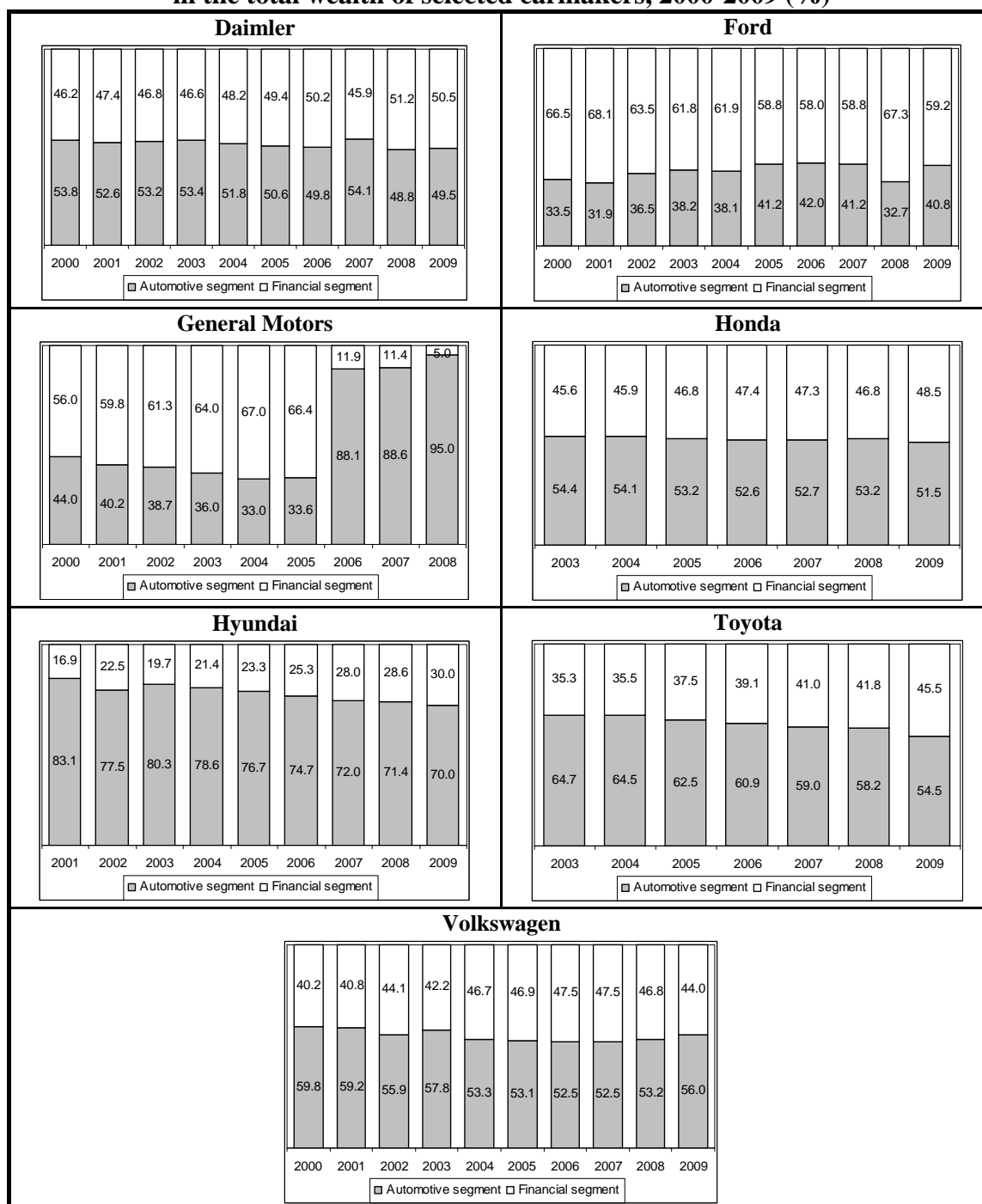
This expansion of financial arms' activities reflects in the corporations' asset composition divided in the automotive and the financial services segments (Figure 2). In spite of the predominance of assets from the productive segment in most companies, except for General Motors and Ford, companies' asset composition indicates an increasing share of financial assets in total wealth during the 2000s, more sharply in Honda, Hyundai and Toyota. For Volkswagen and Daimler, this participation which was already bigger varied near 50%. In GM and Ford, a different pattern was verified, since the presence of assets from financial services was expressive. Most of these assets were related to financial receivables, highlighting the importance of their diversified financial arms within the corporation. The abrupt change in the trajectory of increasing

²⁶ About this discussion, see Senter Jr. & McManus (2009, pp.168-169).

²⁷ Ally Bank has been the main financing agent of Chrysler's dealers (Wernle, 2011). Chrysler Financial was sold to the Canadian bank Toronto Dominion, an important institution of vehicles financing in Canada, at US\$ 6.3 billion in 2010 and still keeps a huge dealers network (Cleto, 2010; The Economist, 2010b).

participation of the financial segment in GM is obviously explained by the sale of GMAC in 2006.

Figure 2 – Participation of assets from the financial and the automotive segments in the total wealth of selected carmakers, 2000-2009 (%)



Source: authors' calculations based on data from corporations' annual financial statements.

Notes: (1) Charts for the companies which presented in their statements the asset division by segment (automotive and financial) – from 2001 onwards for Hyundai and until 2008 for GM, which restructured itself in 2009 (in that year, released data were separated between the previous company, until July 9, 2009, and the new company, from July 10, 2009 onwards, and not by segment anymore). (2) From 2007 onwards data for Daimler refer only to the Daimler Group (with Daimler Financial Services); in the period before, data refer to DaimlerChrysler. (3) Change in GM's assets composition from 2006 onwards due to the sale of its financial arm GMAC.

Although there is a general trend of intensification of assets from the financial segment within corporations, the degree and rhythm of this trend vary among companies. In some extent, lower barriers to capital and goods circulation under the globalisation process and the consequent worldwide expansion of business activities in the search both for producer and consumer markets may have reinforced this logic. However, differences observed among companies point to the fact that corporations' and governments' decisions still matters, i.e. changes under globalisation has not simply resulted in a flat world. Such differences are probably conditioned by the institutional framework of corporations' countries of origin and main markets as they may present particular characteristics that may interact with the company's behaviour. The trend verified for American groups seems to be more restrained and later for the European²⁸ and, especially, the Asian companies.

This marked presence of the financial segment in the corporations' structure may also be viewed under a performance perspective. Chart 3 shows the overall performance by company according to its net profits. Whereas Toyota and Honda registered high net profits in most part of the period and Hyundai and Volkswagen kept at least positive results in the decade, DaimlerChrysler, Ford and General Motors, especially these two, presented substantial losses at many moments. It exemplifies the crisis faced by American carmakers even before the world economic slowdown in 2008.

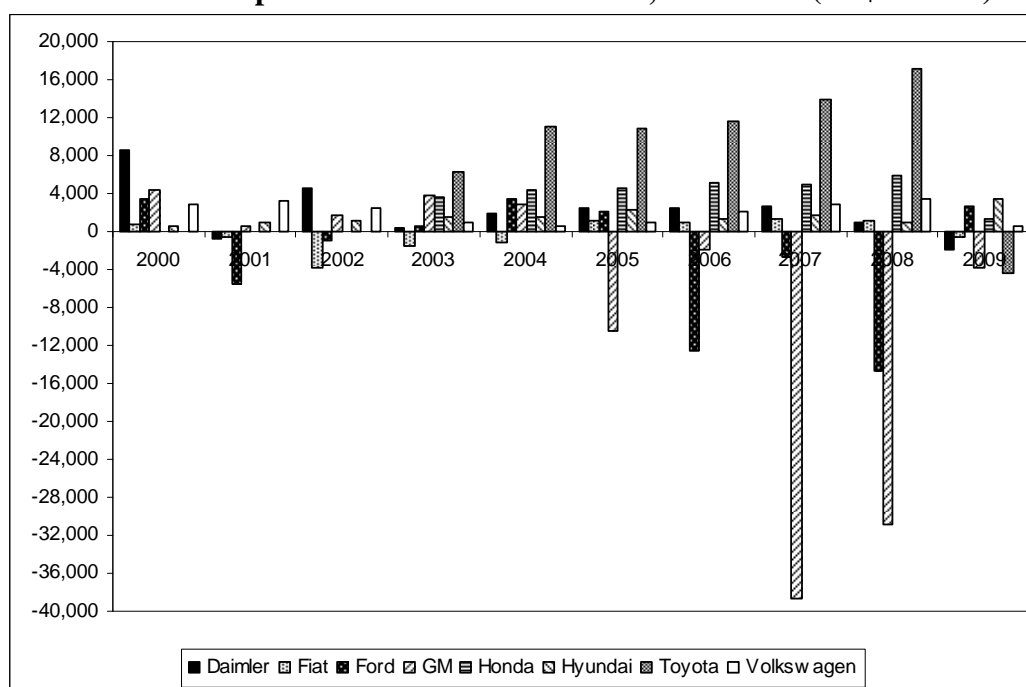
However, the origin of these results may be emphasised. Figure 3 points that GM had a strong dependence upon the financial segment. Contrary to GM, Toyota and Hyundai relied much more on the productive segment. For Daimler (or DaimlerChrysler), despite the predominance of net profits from the automotive operations, the difference between productive and financial profits was not very expressive over many years.

Moreover, the financial services segment rarely registered net losses. Consequently, profits from these activities could contribute to an even higher total profit, when the automotive segment had surpluses (Toyota's case, for example), or to

²⁸ Jürgens (2009, p.238) stresses this feature for Volkswagen: “[...] it is clear that VW has not taken the path that famous role models of the New Economy era had traced. Despite the expansion of financial services, VW has not followed Ford and other companies in officially announcing a strategy of ‘value migration’ away from automobile manufacturing as a low-margin activity towards higher-margin activities downstream the value chain. The official policy is that financial services support VW’s core business activities of auto manufacturing”.

minimise losses obtained from productive operations (as in GM²⁹), denoting the importance of financial activities into corporations. As pointed out by Mercer (2009, p.187, author's emphasis) with respect to Ford – which could be extended to the other American companies –, the corporation “was increasingly dependent, for better or worse, on financial services as a source of income”, characterising a “financialised” pattern, “defined as a growing reliance on profits from services related to car *transactions*, rather than profits derived from car *manufacturing*”. It should also be added that sometimes these profits were even not related to car transactions, but to other financial activities resulted from a massive diversification of their operations.

Chart 3 – Net profits of selected carmakers, 2000-2009 (US\$ million)

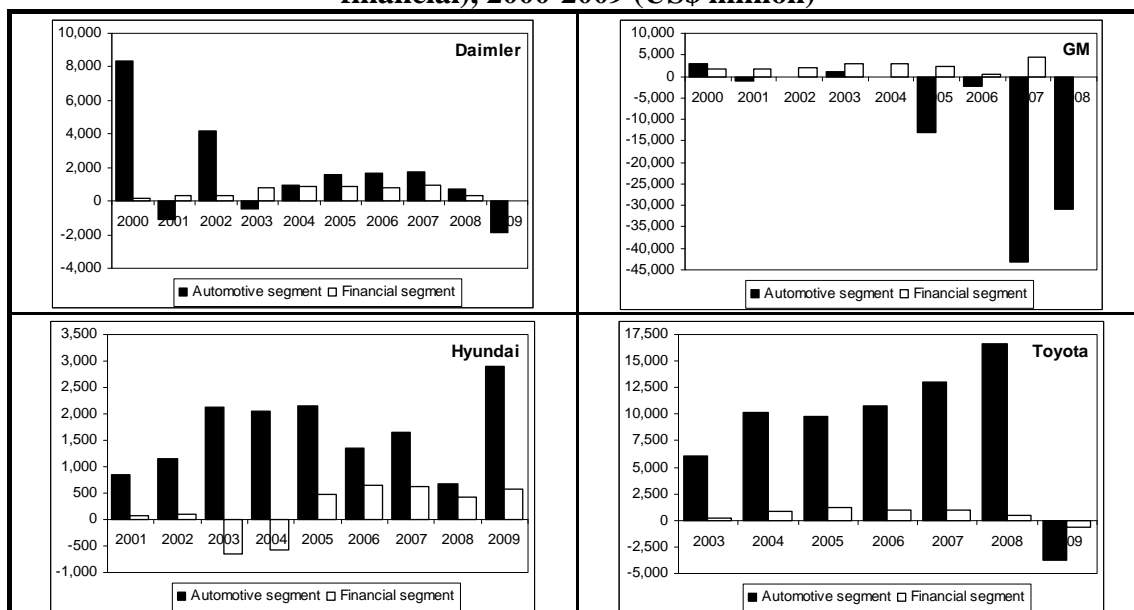


Source: authors' calculations based on data from corporations' annual financial statements.

Notes: (1) From 2007 onwards data for Daimler refer only to the Daimler Group; in the period before, data refer to DaimlerChrysler. (2) In 2009, GM restructured itself; released data were separated between the previous company, until July 9, 2009, and the new company, from July 10, 2009 onwards. It was considered here only net profits of the new company, created after GM's bankruptcy, in order to avoid a distortion in values, since net profits of the previous company were US\$ 109,003 million under effect of reorganisation gains and accounting changes.

²⁹ Such a case was also verified for Ford. As there were not net profits by segment, it was not possible to present a chart for the company. However, similar trend could be observed through the profit before income taxes by segment. In this case, only in 2008 there was a financial loss (US\$ 2.6 billion), contributing to an even higher corporation's loss, since the productive segment registered a US\$ 11.8 billion loss. In all other years within the period 2000-2009, the financial services segment presented a positive profit before income taxes and, except for 2000, higher than the profit from the productive sector which, by its turn, registered losses before income taxes from 2001 to 2008. Thus, the results from the financial services segment contributed in almost the whole period to decrease the corporation's losses and also to turn them positive between 2002 and 2005 (in the case of the profit before income taxes).

Figure 3 – Net profits of selected carmakers by segment (automotive and financial), 2000-2009 (US\$ million)



Source: authors' calculations based on data from corporations' annual financial statements.

Notes: (1) Charts for the companies which presented in their statements net profits by segment (automotive and financial) – from 2001 onwards for Hyundai and until 2008 for GM, which restructured itself in 2009 (in that year, released data were separated between the previous company, until July 9, 2009, and the new company, from July 10, 2009 onwards, and not by segment anymore). (2) From 2007 onwards data for Daimler refer only to the Daimler Group (with Daimler Financial Services); in the period before, data refer to DaimlerChrysler. Although it does not appear, the result of the financial segment in 2009 was US\$ 2 million. (3) From 2006 onwards, after GMAC's sale in November 30, 2006, there was a change in presenting GM's results, being the separation by segment only released for some few accounts. In the case of net profits, the results of continuing and discontinued operations were used as proxies to the automotive and financial segments, respectively. In 2002 and 2004, the result of the automotive segment was negative in US\$ 146 million and US\$ 89 million, respectively. In 2008, the result of the financial segment was zero.

These findings highlight the importance gained by financial activities within corporations. In the automobile industry, as carmakers have financial arms, originally created to ease the acquisition of goods produced by them through the sales financing, certain financial presence is expected to be identified into the companies' dynamics. However, financial practices have been generalised in their behaviour so that they could achieve liquidity and profitability by different portfolio combinations in a short-term horizon. An excessive diversification of their operations, as observed in the American groups, was also a strategy in this direction. These movements are associated with the dominance of the logic of maximising shareholder value that guides corporations in order to fulfil financial markets requirements and keep being well-evaluated through their shares negotiated in the Stock Exchange. Next section deals with some of these features.

4. Financial exposure and fragility of automobile corporations

The previous corporations' financial framework is here complemented by an examination of liquidity and solvency indicators as well as profitability measures and companies' cash flows committed to interest and dividend payments. Results may show, on the one hand, the presence of the logic of financial appreciation within companies and, on the other, differences between the set of corporations by highlighting features of higher financial fragility in the American case.

Liquidity and solvency indicators could be added to the analysis of asset and capital structure. The general liquidity index (TA/TL) shows that Japanese companies, followed by European and American groups, were in a lower risk position. In the latter, a clear insolvency risk could be observed in some years as all short- and long-term applications were inferior to the total liability amount. GM registered an even lower index since the sale of GMAC, reaching 51.6% in 2008, when the international crisis worsened. In 2009, the index however returned to a similar level to other companies with lower financial exposure as a result of the company's restructuring process conducted under the U.S. government intervention (Table 2).

Another indicator for this assessment refers to the current liquidity index (CA/STL). A first approximation would suggest a partially favourable situation for American companies. Nevertheless, it should be noticed that GM and Ford presented a current asset to total asset proportion much higher than the short-term liabilities to total liabilities and equity proportion. This fact resulted in a high current liquidity index that, however, could mean a source of balance sheet mismatches for future periods. Moreover, these companies' current assets were concentrated in financial receivables which, by their uncertain nature from the financial services segment as loans to financing vehicles sales, could not be realised whereas their short-term liabilities, liquid and certain obligations within a year, were mainly composed of short-term notes, bonds and borrowings. Again, there was an uncertain income flow against a certain cost flow to be honoured which in Minsky's terms (1986) could be the origin of balance sheet imbalances and higher financial fragility for the corporation.

In other companies, such as the Japanese once mentioned, the current liquidity index was just slightly above the unit. The amount of current assets was a little higher than the liabilities due within a year. This feature is relevant in explaining their better solvency capacity and the maintenance of a more stable relation with lower balance sheet mismatches. Moreover, the asset and capital structure presented a different

composition. On the one hand, although financial receivables were also important to Honda and Toyota, they only represented between 25% and 35% of the current assets, not even close to the 60% and 70% share in Ford's and GM's cases. On the other hand, short-term liabilities were more concentrated in debts with suppliers and commercial papers. A more atypical case was Hyundai, whose short-term liabilities mainly based on short-term borrowings were greater than its current assets dominated by inventories. Despite not being a very favourable situation to the company, the relation between current assets and liabilities was at least increasing.

The immediate liquidity indicator is also helpful to assess companies' liquidity position. In general, American corporations' performance did not differ so much from the rest. The index increase in some years was more a result of sharp decrease in short-term liabilities than changes in cash and cash equivalents. For all companies the indicator was around 10% to 20% in the 2000s (Table 2). If short-term securities were added to cash and cash equivalents as a signal of corporation's most liquid resources which could be undone (converted into cash) to face due obligations, the index would increase to a level between 20% and 30% with more deviation among companies. It would increase more for American rather than Japanese companies given that the share of short-term securities in total assets is higher in the former than in the latter corporations.

In addition to the liquidity and solvency indicators, the corporations' performance analysis could be understood through the profitability indicators in order to examine under another perspective their fragilities, especially higher in the American case (Table 3). Except for Fiat in the first half of the decade and GM in 2008 which presented negative gross profits, companies registered gross margin (GP/revenues) above 15%. In some cases, however, there was a decline over the period, such as in the American and Japanese companies. The net margin indicator (NP/revenues), which complements the previous considerations on net profits evolution as it considers the income after deducting all costs, showed a more severe situation for American corporations. They registered negative net margins in many years and rarely superior to 2%. Daimler during the merger with Chrysler also did not present high results. Among European companies, the best performance was achieved by Volkswagen and among all companies Japanese results generally above 5% were remarkable.

Table 2 – Liquidity and solvency indicators of selected carmakers (%)

	Daimler			Fiat		
	TA/TL	CA/STL	CCE/STL	TA/TL	CA/STL	CCE/STL
2000	127.5	121.3	8.7	118.9	138.1	5.0
2001	123.5	124.8	13.8	115.6	150.8	5.4
2002	123.3	140.4	12.3	110.4	180.3	11.0
2003	124.4	154.6	16.4	113.6	159.9	12.0
2004	123.2	137.6	10.2	111.2	134.2	11.1
2005	122.6	127.8	9.0	117.7	124.6	20.1
2006	122.4	133.0	9.3	120.8	142.8	29.9
2007	139.5	127.2	31.9	123.1	133.8	23.5
2008	132.9	106.1	13.2	121.9	124.5	12.4
2009	132.8	114.2	20.6	119.8	145.5	42.6
	Ford			GM		
	TA/TL	CA/STL	CCE/STL	TA/TL	CA/STL	CCE/STL
2000	107.3	134.0	3.9	111.4	104.6	7.4
2001	103.2	157.9	6.9	106.7	128.9	15.0
2002	104.0	173.2	12.5	102.1	151.7	15.8
2003	104.2	153.2	18.3	106.0	187.1	21.5
2004	106.1	136.4	18.3	106.2	188.0	21.4
2005	105.5	181.7	32.8	103.4	188.3	18.4
2006	99.2	198.0	30.5	97.8	96.9	34.9
2007	102.6	208.3	40.3	80.8	90.0	35.3
2008	93.1	195.7	28.6	51.6	57.3	18.7
2009	96.8	234.2	36.8	127.0	113.0	43.3
	Honda			Hyundai		
	TA/TL	CA/STL	CCE/STL	TA/TL	CA/STL	CCE/STL
2000	-	-	-	173.7	60.6	3.9
2001	-	-	-	140.5	67.3	12.9
2002	-	-	-	141.1	72.5	13.3
2003	152.1	105.4	17.5	142.8	76.4	18.8
2004	152.7	109.5	21.7	141.5	80.6	11.9
2005	154.6	106.9	20.6	142.5	83.0	14.6
2006	164.0	116.0	18.7	142.1	79.4	12.1
2007	162.0	122.5	22.1	139.4	76.2	11.9
2008	159.1	111.8	22.5	132.6	80.6	12.9
2009	153.7	109.1	16.3	139.5	85.0	20.0
	Toyota			Volkswagen		
	TA/TL	CA/STL	CCE/STL	TA/TL	CA/STL	CCE/STL
2000	-	-	-	130.1	120.4	4.4
2001	-	-	-	129.9	122.9	8.1
2002	-	-	-	129.3	135.0	6.1
2003	158.5	122.2	22.6	125.9	141.5	14.4
2004	164.3	116.5	22.8	123.3	113.8	21.0
2005	164.6	114.7	18.0	121.6	108.5	14.9
2006	163.4	107.0	15.6	124.6	114.5	17.5
2007	162.0	100.1	16.1	128.2	122.2	18.0
2008	162.8	101.2	13.6	128.6	117.5	14.6
2009	157.4	106.7	23.1	126.8	111.9	29.5

Source: authors' calculations based on corporations' balance sheet data.

Notes: general liquidity index = total assets (TA) / total liabilities (TL); current liquidity index = current assets (CA) / short-term liabilities (STL); immediate liquidity index = cash and cash equivalents (CCE) / short-term liabilities (STL).

Table 3 also shows return measures, commonly used in the assessment of companies' profitability. These indicators not only provide information on the corporations' financial condition, but also are considered guides in the financial markets to investors' decisions, so that they directly impact companies' future raising funds possibilities. Once again, the highest returns on assets (ROA) and on equity (ROE) were registered by Japanese corporations and the South Korean Hyundai, followed by European and American carmakers. The average ROA in the period was negative for American companies, positive and low (below 2%) for European companies and positive and high (near or above 3%) for Asian companies. The highest ROE were presented by Honda and Toyota, except for 2009, and by Volkswagen during the years the company registered high net profits. Finally, the different profitability conditions have also been reflected in the profit per share (PPS), which was higher in the Asian companies and in Volkswagen. It has been kept high in GM as well during the first half of the 2000s when the corporation performed with positive net profits.

Additionally, corporations' degree of financial exposure could be exemplified by the proportion of their total revenues committed to interest and dividends payments. The greatest share of revenues spent with interest payments was verified in American corporations, what was expected given their higher indebtedness level. In many years this share surpassed 5% for GM and Ford. The sale of GMAC affected the revenues but especially the financial expenses, thus resulting in a lower share from 2006 to 2007. Among other companies, the relative weight of interest payments was less significant. In some cases, such as in Honda, Hyundai, Daimler and Volkswagen, even net financial incomes were observed (Table 4).

The dividend payments as a proportion of revenues were, in general, inferior to the share of interest expenses and presented just few differences among corporations. The relatively low and even declining dividend expenses among American corporations may have resulted from their conditions of more accentuated financial fragility and lower profitability in the period. Only Daimler (including the DaimlerChrysler period) kept dividend payments higher than 1% of total revenues in many years. A similar trend has recently been observed among the Japanese Honda and Toyota, which have increased dividend expenses more than the rises in their revenues under a strategy of creating value to the shareholder (Table 4).

Table 3 – Profitability indicators of selected carmakers (%)

	Daimler					Fiat				
	GP/Rev.	NP/Rev.	ROA	ROE	PPS	GP/Rev.	NP/Rev.	ROA	ROE	PPS
2000	17.0	4.9	4.0	18.4	8.45	1.4	1.1	0.7	4.4	-
2001	16.0	-0.4	-0.3	-1.7	-0.75	0.5	-0.7	-0.4	-3.3	-
2002	18.8	3.2	2.5	13.3	4.46	-1.3	-6.8	-4.3	-45.5	-
2003	19.4	0.3	0.3	1.3	0.35	-1.0	-3.8	-3.0	-25.4	-
2004	19.4	1.7	1.3	7.2	1.78	0.0	-3.2	-2.8	-27.5	-
2005	17.9	1.9	1.4	7.7	2.37	14.9	3.1	2.3	15.1	1.06
2006	17.1	2.1	1.7	9.3	2.40	15.3	2.2	2.0	11.5	0.60
2007	24.1	4.0	2.9	10.4	2.60	16.4	3.5	3.4	18.2	1.04
2008	22.5	1.5	1.1	4.3	1.01	16.8	2.9	2.8	15.5	0.93
2009	16.9	-3.4	-2.1	-8.3	-1.83	13.7	-1.7	-1.3	-7.6	-0.47
	Ford					GM				
	GP/Rev.	NP/Rev.	ROA	ROE	PPS	GP/Rev.	NP/Rev.	ROA	ROE	PPS
2000	25.8	2.0	1.2	18.0	2.34	21.1	2.4	1.5	14.4	6.80
2001	20.5	-3.4	-2.0	-64.5	-3.02	18.8	0.3	0.2	2.9	1.78
2002	23.4	-0.6	-0.3	-8.7	-0.55	17.9	0.9	0.5	22.7	3.37
2003	20.9	0.3	0.2	4.0	0.27	18.0	2.1	0.9	14.9	7.24
2004	20.9	2.0	1.2	20.6	1.91	17.3	1.4	0.6	10.0	4.97
2005	18.2	1.1	0.8	14.4	1.10	11.2	-5.5	-2.2	-67.6	-18.69
2006	7.0	-7.9	-4.5	547.0	-6.72	20.6	-1.0	-1.1	46.5	-3.50
2007	17.3	-1.6	-1.0	-38.6	-1.38	8.2	-21.4	-26.0	109.2	-68.45
2008	13.1	-10.0	-6.7	91.0	-6.46	-0.2	-20.7	-33.9	36.2	-53.32
2009	15.5	2.3	1.4	-41.7	0.91	1.9	-6.6	-2.8	-13.1	-10.73
	Honda					Hyundai				
	GP/Rev.	NP/Rev.	ROA	ROE	PPS	GP/Rev.	NP/Rev.	ROA	ROE	PPS
2000	-	-	-	-	-	21.9	3.7	3.7	8.8	2.49
2001	-	-	-	-	-	26.5	2.9	2.9	10.0	3.85
2002	-	-	-	-	-	26.3	3.0	3.1	10.7	5.26
2003	32.1	5.4	5.6	16.2	3.66	29.6	3.8	3.3	10.9	6.55
2004	31.3	5.7	5.6	16.2	4.61	25.8	3.2	2.9	9.8	7.09
2005	30.2	5.6	5.2	14.8	4.85	21.9	4.0	3.5	11.8	10.56
2006	29.2	6.0	5.6	14.5	5.52	21.1	2.0	1.8	6.0	6.17
2007	29.1	5.3	4.9	12.9	2.75	20.3	2.3	1.9	6.7	6.20
2008	28.8	5.0	4.8	12.8	3.30	22.5	1.4	1.1	4.3	1.99
2009	25.9	1.4	1.2	3.3	0.77	22.3	4.4	4.0	14.0	9.38
	Toyota					Volkswagen				
	GP/Rev.	NP/Rev.	ROA	ROE	PPS	GP/Rev.	NP/Rev.	ROA	ROE	PPS
2000	-	-	-	-	-	15.9	3.1	2.8	12.2	6.83
2001	-	-	-	-	-	16.1	3.3	2.8	12.1	8.68
2002	-	-	-	-	-	16.1	3.0	2.4	10.5	6.41
2003	22.0	4.8	3.7	10.1	1.76	12.2	1.3	0.9	4.5	2.25
2004	21.0	6.7	5.3	13.5	3.24	11.8	0.8	0.5	2.8	1.28
2005	21.0	6.3	4.8	12.3	3.31	13.5	1.2	0.8	4.7	2.46
2006	20.6	6.5	4.8	12.3	3.59	13.2	2.6	2.0	10.2	5.37
2007	20.7	6.9	5.0	13.2	4.34	15.0	3.8	2.8	12.9	7.09
2008	18.9	6.5	5.3	13.7	5.40	15.1	4.2	2.8	12.7	8.57
2009	11.1	-2.1	-1.5	-4.1	-1.42	12.9	0.9	0.5	2.6	1.65

Source: authors' calculations based on corporations' balance sheet data and on data from corporations' annual financial statements.

Notes: gross margin = gross profits (GP) / revenues; net margin = net profits (NP) / revenues; ROA (return on assets) = net profits (NP) / total assets (TA); ROE (return on equity) = net profits (NP) / equity (E); profit per share (PPS) = net profits (NP) / number of shares.

Table 4 – Net financial incomes (or expenses) as a proportion of total revenues*, by carmaker, 2000-2009 (%)

	Interests (% of total revenues)							
	Daimler	Fiat	Ford	GM	Honda	Hyundai	Toyota	Volkswagen
2000	0.1	-1.0	-5.5	-5.2	-	2.3	-	-0.4
2001	0.1	-1.1	-6.2	-4.8	-	1.4	-	-1.1
2002	1.5	-1.2	-5.4	-4.1	-	0.4	-	-0.9
2003	-2.1	-1.9	-4.7	-5.1	-0.1	0.1	-0.2	-0.3
2004	-0.8	-1.3	-4.1	-6.2	0.0	0.0	-0.1	-0.6
2005	0.1	-1.8	-4.3	-8.2	0.0	-0.2	-0.1	-1.1
2006	0.4	-1.1	-5.5	-8.2	0.2	-0.4	-0.1	-0.2
2007	0.5	-1.0	-6.3	-1.7	0.3	-0.6	-0.2	0.4
2008	0.1	-1.6	-6.6	-1.7	0.3	-0.3	-0.2	0.2
2009	-1.0	-1.5	-5.8	-5.9	0.2	-1.0	-0.2	-0.6

	Dividends (% of total revenues)							
	Daimler	Fiat	Ford	GM	Honda	Hyundai	Toyota	Volkswagen
2000	-1.5	-0.6	-1.6	-0.7	-	-0.8	-	-0.4
2001	-1.5	-0.6	-1.2	-0.7	-	-0.4	-	-0.5
2002	-0.7	-0.4	-0.5	-0.6	-	-0.6	-	-0.6
2003	-1.1	0.0	-0.4	-0.6	-0.4	-0.8	-0.7	-0.6
2004	-1.1	0.0	-0.4	-0.6	-0.4	-0.5	-0.8	-0.5
2005	-1.1	-0.1	-0.4	-0.6	-0.6	-0.7	-0.9	-0.4
2006	-1.0	0.0	-0.3	-0.3	-0.7	-0.6	-1.2	-0.4
2007	-1.6	-0.5	-	-0.3	-1.3	-0.5	-1.4	-0.5
2008	-2.1	-0.9	-	-0.2	-1.4	-0.5	-1.6	-0.6
2009	-0.8	-0.1	-	-0.1	-1.5	-0.3	-2.1	-0.8

Source: authors' calculations based on data from corporations' annual financial statements (including cash flows).

* Net financial incomes (or expenses) are represented by interest incomes or payments and by dividend payments, both as a proportion of corporation's total revenues.

Notes: (1) Results "0.0" refer to negative values with significant algarisms after the second decimal. Inexistent values for certain years are represented by "-". (2) From 2007 onwards data for Daimler refer only to the Daimler Group; in the period before, data refer to DaimlerChrysler. (3) GM's restructuring process in 2009. Both added results of the previous company, until July 9, 2009, and the new company, from July 10, 2009 onwards, were considered.

Related to this discussion, it is noticeable that the net issuance of stocks was negative for many corporations during the 2000s (Table 5). That means there were important buyback movements. Most expressive repurchasing operations were verified in Toyota and, in a lower degree, Honda. This practice, common to American corporations since the 1980s, has recently been adopted quite often by other companies in order to keep their stock prices and returns, such as the ROE and the PPS, high, besides the possibility of increasing dividend payments. For the selected carmakers, it could be stated that, in general, whenever more stocks were repurchased than issued the traded amount tended to be higher and whenever more stocks were issued than repurchased the traded amount tended to be lower. This fact indicates that during this

period stock operations represented much more profitability and volume adjustments to the requirements of financial markets than an important source of investment financing, once again reinforcing the presence of financial logic within corporations which despite the differences among groups is generalised as a dominant feature of their behaviour.

Table 5 – Net sales (or purchases) of stocks, by carmaker, 2000-2009 (US\$ million)

	Daimler	Fiat	Ford	GM	Honda	Hyundai	Toyota	Volkswagen
2000	26	2,764	-1,229	1,179	-	342	-	-1,512
2001	10	-302	-1,385	253	-	114	-	-238
2002	0	1,085	287	-16	-	49	-	31
2003	6	1,458	9	60	-472	198	-3,782	-2
2004	0	15	-151	0	-902	6	-3,382	5
2005	170	0	325	0	-784	6	-2,459	67
2006	235	17	248	-	-656	-	-1,104	258
2007	-1,241	-265	219	-	-226	-	-2,505	143
2008	-2,963	-160	756	-	-307	-	-3,111	-103
2009	1,356	9	2,450	-	1	-	-719	-269

Source: authors' calculations based on data from corporations' annual financial statements (including cash flows).

Notes: (1) Inexistent values for certain years are represented by "-". (2) From 2007 onwards data for Daimler refer only to the Daimler Group; in the period before, data refer to DaimlerChrysler.

5. Concluding remarks

The aim of the approach adopted in this paper was to analyse different financial structure patterns among automobile corporations. In fact, all patterns were characterised by a strong presence of finance within the groups' dynamics, which was accentuated in the context of lower restrictions on capital mobility at global level and reflected in the companies' "financialised" structures. The data suggest that this process of "financialisation" worsened during the 2000s as financial practices commonly and increasingly became part of carmakers' operations. However, data also show that these financial patterns can be distinguished from each other in accordance with the corporate dependence upon activities from the financial segment and the degree of fragility of their financial structures.

It is reasonable to expect that financial operations in support of production, investments and sales increase when a carmaker's global productive expansion takes place. This match between productive and financial dimensions is a requisite for the corporation's growth as observed in the case of Asian companies. They also presented a pattern which was heavily based on the accumulation of internal funds originating, above all, from productive results and on a lower degree of financial exposure.

The American corporations, on the contrary, registered an excessive dependence upon financial activities. A clear mismatch between the financial and productive segments within the corporations could be observed. In spite of continuing executing its role in relation to production, finance acquired its own dynamic, reflected in its autonomy from productive activities, a large importance in the company's performance and a diversification to areas not related to its core business, i.e. sales financing. The American pattern was, moreover, marked by a high indebtedness and consequently a high leverage degree not necessarily associated with the productive needs and by a greater commitment of the group's income to financial expenditures as well, thus denoting more fragile financial structures.

A third and intermediate pattern between the American and the Asian structures was identified in the European carmakers, an endogenously heterogeneous group. Financial activities tended to show a significant weight. They played their complementary and essential role in the corporation's productive dynamics, but without a growing or clear mismatch from their core business, except for specific moments. Although it did not mean a particular strategy in this direction of "finance by itself", it could not be denied that European groups as well as other carmakers were deeply embedded in a broader logic conducted by financial markets.

As the crisis showed, despite all companies being affected by the credit crunch in late 2008, the previous different financial structure patterns resulted in much more severe constraints for American corporations. Their higher financial fragility was immediately translated into insolvency risk. It was not by chance that General Motors and Chrysler received many bail-outs, especially from the U.S. government, in order to maintain their activities, even at a lower level, and promote through state intervention a restructuring process in 2009. Hence, the crisis developments suggest the need to rethink the articulation pattern between finance and production within automobile groups, especially of American carmakers, which means in broader terms to re-establish the role played by the financial dimension in corporate dynamics.

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- Ford: <http://www.ford.com/> & <http://www.fordcredit.com/index.jhtml>;
- General Motors: <http://www.gm.com/> & <http://www.ally.com/>;
- Honda: <http://world.honda.com/> & <https://www.hondafinancialservices.com/index.asp>;
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