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# PROFIT STRATEGIES AND NATIONAL GROWTH MODE IN DEVELOPING COUNTRIES: THE CASE OF MERCOSUR

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In the second half of the nineties, a selected group of developing countries was considered by car manufacturers to be a new frontier for investment opportunities. The expected profitability of investing in the so called "emerging markets" was based, in some cases, on locational advantages that resulted in low cost production to supply large mature markets in developed countries. In other cases, the return on investment depended mostly on locational advantages that allowed them to supply the rapidly expanding demand in the developing country itself. In the first case, successful profit strategies depended mostly on manufacturers' ability to produce at low cost, while in the second case sustained local market expansion was the main determinant. Thus, in the first situation, profit strategies emphasized cost reduction, while in the second case market creation was the most important dimension. Mexico is a good example of the first type of situation, while MERCOSUR is emblematic of the other case. (Humphrey, J., Lecler, Y & M. Salerno, 2001)

The distinction between both types of profit strategies mentioned above obviously involves a high degree of simplification, but we believe it can provide a useful conceptual tool to better understand the alternatives faced by car manufacturers when sudden changes in economic conditions take place in developing countries. Most developing economies are highly dependent on inflows of foreign capital and therefore subject to financial instability. It can be said that high instability is an important feature of the "growth mode" in those economies.

Research findings of the GERPISA Network have shown that sudden changes in economic conditions have had a strong impact on the performance of car manufacturers in developing countries in the past. Recent experience after the 1997 Asian Crisis has once again showed that profit expectations in "emerging countries" can be frustrated by profound changes in the economic context not anticipated by car manufacturers (Lung, 2001).

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High instability in developing countries requires swift response from car manufacturers in the form of flexible profit strategies. In other words, in order to achieve the targeted return on capital, car manufacturers must be able to rapidly adapt their products, organization, employment relationship and relations with other relevant actors (suppliers, dealers and government), to a changing context (Laplane & Sarti, 2000).

The concept of flexibility has been extensively used in the analysis of other dimensions of change in the automobile industry, mostly related to the organization of production. In this paper we adopt a wider view of flexibility, defining it as the ability to redesign essential aspects of the profit strategy that have become inadequate to new conditions.

A certain degree of flexibility is an essential component of profit strategies even in mature and more stable markets, as in developed countries, but in our view unstable conditions in developing countries are useful to achieve a better understanding of the true importance of flexible strategies. In other words, developing economies seem to offer a unique testing ground for assessing the need of compatibility between "profit strategies" and "national growth modes", which is one of the conditions for firms' profitability according to the synthesis of the findings of the GERPISA research program. Instability in developing countries tests to the limit the analytical usefulness of the concept of flexibility, in this way we expect to contribute to the overall research program of the Network.

As mentioned above, car manufacturers invested in MERCOSUR seeking mostly to take advantage of the rapidly growing domestic demand. Accordingly, most profit strategies emphasized "market creation" mechanisms, seeking to foster demand growth. From 1998 onwards, almost at the same time new assembly facilities became operational, demand growth was interrupted by sudden changes in overall economic conditions. As domestic sales fell, car manufacturers asked the Argentinean and the Brazilian governments to implement measures to reactivate demand. Since such initiatives did not achieve the expected results, expected profitability was not achieved and it became evident that profit strategies needed to be reassessed (Laplane & Sarti, 2002).

This paper analyzes changes implemented by car manufacturers in the context of profit strategies failure. Output and trade data from Brazil, that account for a large part of the car manufacturing in MERCOSUR, are used to assess the direction and pace of changes implemented. Overall, the results reveal a relative lack of flexibility by local subsidiaries of leading world car manufacturers to redirect local output towards foreign markets, specially in developed countries. In our view, this lack of flexibility is due to the division of labor that head companies establish among subsidiaries in different regions and countries, more than to institutional or technical barriers.

The Brazilian automobile industry has become modern and competitive in terms of the plants, productive process, number and importance of the active companies[2] and the supplied products (Laplane & Sarti, 1997). The main determinant of the productive and competitive restructuring was the high investments in modernization and expansion achieved throughout the '90s. Moreover, the investments in autoparts and automobile were around US$ 30 billions in the

[2] In Brazil, 27 automotive companies have a total of 53 industrial units, of which 22 were inaugurated in the period of 1996-2002.

period. In the assembly sector, these investments increased to approximately 3,2 millions the annual productive capacity in Brazil[3].

However, this leap of competitiveness was not enough to ensure an active trade and productive insertion, that was significant, sustained and with a strong surplus balance, of the local (regional) branches of the car and auto parts manufacturers in the international scenario .

This paper will try to argue that a bigger trade insertion of the car segment (and also autoparts) in the worldwide market depends much more on the strategic decisions and greater flexibility in the role reserved to the subsidiaries by their head offices than the new increase in the competitiveness level. The biggest participation of the Brazilian subsidiaries in the worldwide market should be based on three vectors: integration, expansion and specialization of the productive basis, but it also depends on the strategy of the head office to its subsidiary in the region.

## INTERNATIONAL TENDENCIES

Global production and demand have remained stagnant in recent years, especially in the bigger and more competitive markets, resulting in a high and undesirable idle capacity that appeared and pulled down the profitability levels of the productive chain as a whole (table 1).

***Table 1. Production, Production Capacity of the Light Vehicle and Idle Capacity 2000***

| | Asia | Europe | North America | South America | Africa | | |
|---|---|---|---|---|---|---|---|
| | | | | | Brazil | Middle East | Total |
| Light vehicles production | 15,8 | 19,7 | 15,5 | 2,1 | 1,7 | 0,8 | 53,9 |
| Production Capacity | 24,6 | 27,0 | 19,6 | 4,1 | 3,2 | 1,4 | 76,7 |
| (%) Idle Capacity | 35,8 | 27,0 | 20,9 | 48,8 | 52,2 | 42,9 | 29,7 |

*Source:* Bozz-Allen. Preparation: NEIT/UNICAMP.

The general profitability, measured by the ratio between the net profit and the global sales, for a representative sample of the big automobile corporations, presented a strong downturn in the most recent period: 3,6% in 1999, 2,6% in 2000 and 0,4% in 2001. Even so, with a capacity of capital accumulation that exceeded the growth capacity of the car manufacturing sector, the tendency is that the process of economic concentration deepens much more, especially through operations of mergers and acquisitions and that they intensify the strategies of diversifying activities and consolidating competitive advantages.

[3] It is estimated that 4 million units is the capacity of Mercosur.

Economies either partially or completely inserted in the productive strategies of the big corporations will suffer from the impacts of the adjustment and chain rationalization at global level. In the long and medium term, their productive structures can be eliminated or reduced, depending on their geographic localization, participation or not in economic blocks, degree of economic importance (technical and economic scale) from their subsidiaries within the corporations and the degree of integration of their productive structures.

It is important to point out the degree of spatial concentration of worldwide production that intensifies the trade flow in the sector, responsible for approximately 10% of worldwide trade. Besides this, these trade flows have a strong regional dimension, conditioned directly by the trade agreements, the economic integration and by the regional division of the work, defined by the corporations.

Moreover, a significant share of the trade flows is made inside the firm. Therefore, the biggest trade insertion of the subsidiaries depends on the strategic decisions and also the greatest flexibility in the role reserved to the subsidiaries by their head offices. The trade flows (export and import of final products and components) remains much more conditioned to the financial decisions, to the restrictions and to the fiscal and taxable opportunities than to the competitive capacities of the several plants of the corporation. Trade and taxable agreements increase the flexibility of the corporation as a whole in the allocation of their production factors and in the production destiny. However, they reduce the degree of autonomy of the subsidiaries in production and marketing decisions.

***Table 2. Profitability Indicators of Selected Automobile Groups***

| Indicators | | | | | Acumulated | Average | Average |
|---|---|---|---|---|---|---|---|
| Period | 1992 | 1999 | 2000 | 2001 | 1996-00 | 1996-00 | 1992-95 |
| Sales in US$ millions | 547.369 | 822.016 | 860.929 | 843.719 | 3.886.619 | 777.324 | 592.924 |
| Gross profit US$ millions | 42.009 | 109.529 | 115.100 | n.d | 505.583 | 101.117 | 56.039 |
| Sales % | 7,7 | 13,3 | 13,4 | n.d | 13,0 | | 9,5 |
| Net profit US$ millions | 1.068 | 29.244 | 22.778 | 3.516 | 138.022 | 27.604 | 10.257 |
| Sales % | 0,2 | 3,6 | 2,6 | 0,4 | 3,6 | | 1,7 |
| Employees | 1.873.317 | n.d | 2.465.194 | n.d | | | |

Source: Companies. Preparation: NEIT/UNICAMP.

Sample composed of the companies: DaimlerChrysler, Fiat, Ford, General Motors, Honda, Peugeot, Renault, Scania, Toyota, Volkswagen, Volvo.

## TRADE INSERTION

The competitive restructuring was not enough to propel a high trade insertion of the local (regional) subsidiaries of the car and autoparts manufacturers in the international scenario. Automobile exports increased in absolute terms, but the export coefficient during 2001 and 2002 is still similar to that observed at the beginning of the decade, when the sector presented high levels of effective protection and competitive lag. Before the process of the trade opening, in the beginning of the '90s, the Brazilian foreign automobile trade[4] showed a large surplus balance and then it became unprofitable as from 1994, remaining thus until 1998, during the period of the Automotive Program; it stabilized again in 1999; and it created a surplus in the period from 2000 to 2002.

***Table 3. Brazil: Foreign Trade of Automobiles (in US$) millions***

| | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Import | 4 | 32 | 196 | 339 | 879 | 1.858 | 3.879 | 2.084 | 3.436 | 3.819 | 1.826 | 1.913 | 1.975 | 1.042 |
| Export | 1.545 | 948 | 887 | 1.660 | 1.476 | 1.479 | 1.122 | 1.286 | 2.582 | 2.940 | 1.974 | 2.678 | 2.844 | 2.800 |
| Balance | 1.541 | 915 | 691 | 1.322 | 597 | -379 | -2.757 | -798 | -855 | -879 | 148 | 765 | 869 | 1.758 |

Source: Secex. Preparation: NEIT/UNICAMP.

The recent downturn in the trade balance was much more a result of the import retraction than the increase in exports. The retraction of the domestic production in 1998-99 and the exchange devaluation, starting from 1999, contributed to this import decrease. The Brazilian participation in the international trade of automobiles (between 0,6% and 0,7%) is lower than the average participation of the country in worldwide trade (1%), which means that the country still does not have comparative advantage in this sector.

In contrast to the automobile sector, in the autoparts segment, Brazil has a strongly negative trade balance. The autoparts imports increased more than US$ 4 billion, due to the new projects, the adoption of new productive processes and due to the launching of new models, whose supply has been attended by worldwide systemists.

The excessive degree of concentration per market is an indicator of the importance of the regional work division of the corporation and the trade and tax opportunities. Even in the Argentinean crisis, Brazil's presence was strongly felt in Mercosur, where half of the exports were destined until 1997. With a lesser degree of importance, the USA emerged and also, some Latin- American and European countries, as a result of the regional division of the markets made by their own corporations. The substitution of the Argentinean market for the North-American and Mexican markets kept the nature of the exports concentrated. Imports are still more concentrated than exports. Argentina is the main automobile supplier of Brazil. It is followed by Japan, South Korea and Germany, which together represent more than 80% of the imports.

[4] The automobile exports correspond to the sectors SICT 781,782 e 783.

***Table 4. Main Markets of Destiny of Brazilian Export of Automobile (in US$ millions)***

| | 2001 | (%) | 2000 | (%) | 1997 | (%) | 1989 | (%) |
|---|---|---|---|---|---|---|---|---|
| Mexico | 612.813 | 23,7 | 590.663 | 22,8 | 45.047 | 3,3 | 12 | 1,3 |
| USA | 592.654 | 22,9 | 304.343 | 11,7 | 13.227 | 9,2 | 385.908 | 30,8 |
| Argentina | 396.250 | 15,3 | 703.885 | 27,2 | 1.117.315 | 40,9 | 19.204 | 2,5 |
| Sub-total | | 61,9 | | 61,7 | | 53,4 | | 34,6 |
| Total | 2.588.246 | 100,0 | 2.590.342 | 100,0 | 2.493.771 | 100,0 | 1.505.637 | 100,0 |

Source: Secex. Preparation: NEIT/UNICAMP.

The flows of the automobile and the autoparts trade are administrated and the domestic markets are strongly protected with tariff and/or administrative barriers. To improve the access to the markets, trade agreements are essential. These reduce the transaction costs and they give a greater degree of flexibility to the trade flows inside the firm. Therefore, the business decisions inside the firm reflect less the competitiveness levels between the subsidiaries from the same corporation than the other factors, such as : transfer prices, fiscal and tax gains, degree of utilization of the productive capacity, conjunctural changes in the demand levels and in the relative prices, among others.

***Table 5. Main Automobile Export Countries to Brazil (in US$ millions)***

| | 2001 | (%) | 2000 | (%) | 1997 | (%) | 1989 | (%) |
|---|---|---|---|---|---|---|---|---|
| Argentina | 1.272.155 | 63,1 | 1.121.132 | 59,2 | 1.974.917 | 57,7 | 39 | 0,9 |
| Japan | 153.921 | 7,6 | 117.270 | 6,2 | 282.630 | 8,3 | 0 | 0,0 |
| South Korea | 108.901 | 5,4 | 146.729 | 7,8 | 246.215 | 7,2 | 0 | 0,0 |
| Germany | 103.015 | 5,1 | 99.933 | 5,3 | 181.971 | 5,3 | 674 | 15,3 |
| Sub-total | | 81,2 | | 78,5 | | 78,5 | | 16,2 |
| Total | 2.014.803 | 100,0 | 1.892.846 | 100,0 | 3.423.677 | 100,0 | 4.398 | 100,0 |

Source: Secex. Preparation: NEIT/UNICAMP.

The degree and the profile of the international insertion vary from subsidiary to subsidiary, depending on the corporate decisions. In the Brazilian case, the subsidiaries with the largest physical coefficient of export, in the period 2001-2002, are GM do Brasil (34,7%), Ford (33,7%), Volkswagen (29,6%) and Fiat (6,2%). From these four subsidiaries, only Ford also has a high import coefficient (22,8%). GM and Volkswagen have a reduced import coefficient. Among the newly installed subsidiaries, Toyota has the highest export coefficient, followed by Renault. Honda and Peugeot-Citröen have a very reduced coefficient.

In the period of 2001-2002, the main automobile export companies were GM do Brasil (market-share of 44,3%), Volkswagen (36,2%), Ford (9,1%) and Fiat (8,5%). Fiat greatly reduced its exports to Italy and Mercosur. The principal markets of destiny were, in order, Nafta, Mercosur, the European Union and the rest of Aladi. To Nafta, mainly Volkswagen and GM exported. To Mercosur, Volkswagen, GM, Renault and Fiat exported in a more significant way. To the European Union, the main export company is Fiat and, to a lesser extent, GM.

It is important to emphasize the low degree of diversification in terms of the car manufacturer markets. Fiat concentrates its exports to the European Union and Mercosur. Renault, basically, sold only to Mercosur. Volkswagen based its exports to Nafta and to Mercosur. The car manufacturers with the biggest degree of diversification, in terms of market, is GM (Mercosur, Aladi, Nafta, European Union).

## CONDITIONING FACTORS OF TRADE INSERTION: INTEGRATION, EXPANSION AND SPECIALIZATION

Former analyses imply that one of the pre-requisites for the survival and active participation of this sector in global and regional terms is its technical and economic scale. In this respect, Brazil's (and MERCOSUR's) participation is still very modest. This can be observed, or is reflected in, the reduced participation of most of the subsidiaries of foreign companies active in Brazil and Argentina, in the financial, economic, trade and production results of their corporations and head offices, with very few exceptions.

***Table 6. Production Indicators of Automotive Companies in Brazil and Worldwide 2000***

| | Vehicles | | | Passenger Vehicles | | |
|---|---|---|---|---|---|---|
| | World (A) | Brazil (B) | (B)/(A) | World (A) | Brazil (B) | (B)/(A) |
| | Units | Units | Percentage | units | units | Percentage |
| GM | 8.133.375 | 441.888 | 5,4 | 5.266.263 | 363.649 | 6,9 |
| Ford | 7.322.951 | 120.842 | 1,7 | 4.038.670 | 80.442 | 2,0 |
| Toyota | 5.954.723 | 18.810 | 0,3 | 4.681.435 | 16.456 | 0,4 |
| VW | 5.106.749 | 499.613 | 9,8 | 4.859.478 | 431.267 | 8,9 |
| Daimler Chrysler | 4.666.640 | 58.623 | 1,3 | 2.043.376 | 15.681 | 0,8 |
| Peugeot-Citroen | 2.879.422 | 14.422 | 0,5 | 2.493.980 | 14.422 | 0,6 |
| Fiat | 2.641.444 | 433.838 | 16,4 | 2.185.897 | 362.477 | 16,6 |
| Renault | 2.514.897 | 57.383 | 2,3 | 2.101.855 | 57.383 | 2,7 |
| Honda | 2.505.256 | 20.568 | 0,8 | 2.286.771 | 20.568 | 0,9 |
| Total | 58.392.376 | 1.671.093 | 2,9 | 40.987.856 | 1.347.923 | 3,3 |

Source: Enterprises, Anfavea, Adefa e AAMA. Prepared by NEIT/UNICAMP.

The strengthening of the sector is associated with the consolidation of the current model of productive specialization, with a higher degree of integration of the production chain, and finally, with the expansion of domestic demand and of production scales. Even though public policies condition these strategies and the companies' competitive capacity, it is the strategic corporate decisions that define the model of productive specialization and the degree of integration in the production chain and, in the final analysis, the model of international insertion.

## Specialization model

The specialization model for production is a key element in the strategy of building competitive advantages, by means of the combination of economies in scale (volume) and scope (variety). Brazilian production is regional and concentrated in small sized (compact) vehicles. In 2002, 70% of all domestic sales were of "popular" vehicles (with engine capacity of less than 1.000 cc). Using the platforms for compact cars, a whole family of vehicles with a greater degree of sophistication and of motorization has been produced and offered for different uses and segments to internal and external markets.

Some arguments in favor of this specialization model can be emphasized. Firstly, this strategy is more adequate for the standard of income and demand profile in Brazil and region. Secondly, these vehicles have greater fuel efficiency and a smaller maintenance cost. In third place, these vehicles have a higher nationalization rate. This stimulates local production of car

parts and reduces the pressure on imports of raw materials and components. In fourth place, specialization insures a more adequate technical scale of production,, that constitutes a fundamental factor for international competitiveness.

The main obstacle to this specialization model is that it confers a smaller profit margin per unit to the car manufacturers, reducing the profitability margin during periods of retraction in total sales. As analyzed before, the sector's drop in profitability is a generalized tendency in world industry. In the specific case of Brazil and of other markets that have recently made investments, this problem is aggravated. Investments made by car manufacturers were partly financed with public resources (BNDES) and partly with their own resources, mostly originating from the head offices. The excess of idle capacity, that results as much from the ripening of previous investment decisions as from the deacceleration of internal demand, has reduced the projected rate and time limit for the return on capital.

With the retraction of profitability and the postponement of time limits for the return of investments, the car manufacturers' strategy has been to stimulate the migration of consumers to the segment of larger and more sophisticated vehicles, with an aim of increasing the unit profit margin. The recent structural change in tax legislation for the vehicles sector, carried out by the Brazilian government, favored this strategy. This demand profile is closer to those of developed countries, which could turn out to be a favorable factor towards the increase in exports to these markets. However, with the exception of the North-American market, Brazil's main export markets have very similar demand profiles and a smaller purchasing power.

This strategy can be a temporary solution to momentarily solve the profitability problem of car manufacturers. But it does not solve the main problem, that is, the promotion of a consistent and sustained increase in the competitiveness of the automotive chain. In this case, the best policy vis-à-vis competitiveness and an increase in profitability is the enlarging of the domestic market, making an elevated production scale specialized in compact vehicles possible and the promoting of a greater trade insertion in a regional perspective and in emerging markets, by means of the reduction of costs and prices as well as of the increase in vehicles' efficiency, quality and safety.

Finally, it is important to point out that the economic outcomes of these companies were strongly affected by the exchange devaluation, when measured in international currency. The concern to improve economic and financial indicators in strong currency and to avoid a great mismatchment of the liabilities (indebtedness) in dollars in relation to the assets (turnover in local currency) makes the increase of exports by subsidiaries a strategic decision within these corporations.

## Integration of the productive chain

Economies that currently and/or potentially have large markets, as is the Brazilian case, cannot be inserted in the worldwide automotive chain only as a consumer market, due to the pressure that vehicle and components imports exert on the trade balance of trade. Auto parts imports remain at a reasonably high standard, even after the strong exchange rate devaluation (US$ 3,98 billion in 2002 against US$ 4,2 billion in 2001). The devaluated exchange rate has an impact on all production costs, hence on the competitiveness of the re-exported vehicles and systems and sub-systems. Apart from that, the balance of trade in the auto parts sector remains in

deficit (US$ 98 million in 2002 against US$ 530 million in 2001), quite the opposite of the segment of passenger and cargo vehicles.

The national capital auto parts companies, the weakest link in the production chain, were the most affected by the growing penetration and competition of imported goods in the wake of the restructuring of the supply chain. The imported content of new vehicles' components and/or of the sub-systems that make up these vehicles is much higher if compared to older models, subsequently provoking the substitution of local suppliers by foreign suppliers. This tendency is more conspicuous in new companies that still have not internalized their supply system. It is worth emphasizing that the idle capacity of the auto parts sector is also high, and close to 30%, leading to a significant pressure on its sales and profitability.

However, the most important point is that a process of competitive import substitution would allow the increase of the competitiveness of the automotive chain as a whole, consequently increasing the sector's total exports. Also because a competitive import substitution policy presupposes the attainment of adequate production scales, that cannot be reached exclusively by supplying the internal market. It becomes necessary to direct a significant part of the auto parts' production to external markets.

In this case, car manufacturers have a decisive role in the insertion of their local suppliers in regional and global corporate networks. Many auto parts companies, mainly those with national capital, have had difficulties in participating as first class suppliers within the car manufacturers' organizational structure. These difficulties are mainly associated with the access to the international market, and not so much to degrees of competitive capacity (price and quality). This access is conditioned to strategic decisions and to the role that head offices attribute to their branches. This affects not only car manufacturers but also those who integrate the systems and sub-systems related to car manufacturers, whose decisions can open up a space for national parts and components.

## FINAL COMMENTS

Associated with a context of extremely favorable relative prices since 1999, the Brazilian automotive chain's recent gains in efficiency and productivity have not been enough to induce a significant increase in exports of automobiles and auto parts. It is a fact that some external conditions –high idle capacity, declining profitability, excessive regulation and stagnant global demand– were also unfavorable towards this increase. However, the main point is that this insertion has been limited by strategic decisions and by the role appointed to the subsidiaries by the main offices. The local subsidiaries' lack of autonomy has made it difficult for them to benefit from their corporation's greater degree of flexibility in decision-making with regard to production and commercialization. The search for a higher profitability and for a reduced time limit for the return of investments made in local transactions has clashed with the necessary specialization and integration strategies. Beyond new increments towards competitiveness, the sector as a whole will only expand its trade and production insertion if greater specialization and production integration directives are followed, conferring a larger space within the corporation to the subsidiaries of local companies.

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# APENDIX

***Table A.1. Brazilian Automotive Industry: Production, Sales and Export***

| | Production | Sales | Domestic Sales | Imported Vehicles | Exports |
|---|---|---|---|---|---|
| | Units | units | Units | Units | Units |
| 1990-92 | 728.115 | 575.921 | 564.389 | 11.531 | 163.552 |
| 1993-97 | 1.356.590 | 1.282.769 | 1.107.986 | 174.784 | 246.271 |
| 1998-00 | 1.241.749 | 1.133.502 | 980.490 | 153.012 | 259.754 |
| 2001-02 | 1.508.527 | 1.262.335 | 1.170.168 | 92.167 | 340.621 |

Source: Anfavea. Prepared by NEIT/UNICAMP.

***Table A.2. Brazilian Automotive Industry: Export and Import Coefficient***

| | Export Coefficient | Import Coefficient (production) | Import Coefficient (sales) | Aparent Consumption |
|---|---|---|---|---|
| | Percentage (%) | Percentage (%) | Percentage (%) | Percentage (%) |
| 1990-92 | 22,5 | 1,6 | 2,0 | 79,1 |
| 1993-97 | 18,2 | 12,9 | 13,6 | 94,7 |
| 1998-00 | 20,9 | 12,3 | 13,5 | 91,4 |
| 2001-02 | 22,6 | 6,1 | 7,3 | 83,5 |

Source: Anfavea. Prepared by NEIT/UNICAMP.

***Table A.3. Brazilian Automotive Companies: Production, Sales and Export***

| FIAT | Prod | Imp. | Exp. | FORD | Prod | Imp. | Exp. |
|---|---|---|---|---|---|---|---|
| | (%) | (%) | (%) | | (%) | (%) | (%) |
| 1990-92 | 27,4 | 16,3 | 51,6 | 1990-92 | 14,4 | 21,0 | 13,6 |
| 1993-97 | 32,3 | 24,7 | 44,3 | 1993-97 | 10,1 | 19,0 | 9,0 |
| 1998-00 | 28,7 | 14,5 | 24,9 | 1998-00 | 7,8 | 17,6 | 8,0 |
| 2001-02 | 24,0 | 14,5 | 8,5 | 2001-02 | 6,6 | 28,2 | 9,1 |
| GM | Prod | Imp. | Exp. | VW | Prod | Imp. | Exp. |
| | (%) | (%) | (%) | | (%) | (%) | (%) |
| 1990-92 | 22,9 | 0,3 | 13,8 | 1990-92 | 35,0 | 10,9 | 21,0 |
| 1993-97 | 22,7 | 3,7 | 14,6 | 1993-97 | 34,9 | 24,7 | 32,2 |
| 1998-00 | 26,6 | 9,0 | 29,0 | 1998-00 | 31,7 | 24,8 | 34,4 |
| 2001-02 | 29,9 | 3,9 | 44,3 | 2001-02 | 30,4 | 9,5 | 36,2 |

Source: Anfavea. Prepared by NEIT/UNICAMP.

***Table A4.. Brazilian Automotive Companies: Export and Import Coefficient***

| FIAT | CX | CM | CA | FORD | CX | CM | CA |
|---|---|---|---|---|---|---|---|
| 1990-92 | 42,3 | 1,6 | 58,7 | 1990-92 | 21,2 | 2,8 | 81,1 |
| 1993-97 | 24,9 | 11,7 | 85,0 | 1993-97 | 16,1 | 22,4 | 108,1 |
| 1998-00 | 18,1 | 7,0 | 88,1 | 1998-00 | 21,3 | 26,2 | 106,5 |
| 2001-02 | 8,0 | 3,9 | 95,7 | 2001-02 | 30,8 | 27,4 | 95,1 |
| GM | CX | CM | CA | VW | CX | CM | CA |
| 1990-92 | 13,6 | 0,0 | 86,4 | 1990-92 | 13,5 | 0,6 | 87,0 |
| 1993-97 | 11,7 | 2,3 | 90,4 | 1993-97 | 16,8 | 9,9 | 92,4 |
| 1998-00 | 22,9 | 5,1 | 81,3 | 1998-00 | 22,7 | 11,1 | 87,0 |
| 2001-02 | 33,4 | 1,2 | 67,4 | 2001-02 | 26,9 | 2,5 | 75,0 |
| HONDA | CX | CM | CA | Toyota | CX | CM | CA |
| 1998-00 | 3,4 | 3,5 | 99,3 | 1998-00 | 13,2 | 10,1 | 96,3 |
| 2001-02 | 1,8 | 1,8 | 99,4 | 2001-02 | 8,1 | 0,5 | 92,4 |
| PEUGEOT-CITROEN | CX | CM | CA | RENAULT | CX | CM | CA |
| 2001-02 | 1,7 | 34,5 | 142,8 | 2001-02 | 6,8 | 10,5 | 104,5 |

Source: Anfavea. CX: Export Coefficient CM: Import Coefficient CA: Aparent Consumption
Prepared by NEIT/UNICAMP.