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**ESCUELA DE GRADUADOS EN ADMINISTRACIÓN Y
DIRECCION DE EMPRESAS
(ITESM-CAMPUS MONTERREY)**

**A dominant firm's strategy and its effect on the
capital structure of non-dominant firms in the self-
service discount stores industry**

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Summary

In an industry characterized by oligopolistic market structures there are generally firms that have enough market power as to influence the pricing and output decisions of all participants, forcing others to follow the strategies followed by the dominant firm(s) with very little opportunity to do otherwise. When a dominant firm is part of a larger corporation, which gives it the financial capacity to support an above-average, long-term investment, as a logical reaction to protect (or minimize the loss of market share), the rest of the participants in the industry are expected to also make an attempt to increase their investments, fundamentally affecting the long-term capital structure strategy. This work's contribution consists on presenting an empirical analysis of the capital structure decisions of the non-dominant firms in the Self-Service Discount Stores Industry (SSDSI) that result from the rapid expansion of Wal-Mart in the Mexican market.

Introduction

Oligopolies offer an interesting object of study to economists, not only because of their generalized presence, but also because they pose many challenging problems to the development of a theory and the inference of principles that may serve as tools to predict the behavior of participating firms under different environmental conditions. In any oligopolistic industry the firm's output and pricing decisions are much more complex than in the case of perfect competition or monopoly. The interdependence and rivalry among firms is intense and is characterized by the fact that "each firm recognizes that its best choice depends upon the choices its rival make" (Scherer and Ross 1990).

In an industry characterized by oligopolistic market structures there are generally firms that have enough market power as to influence the pricing and output decisions of all participants, forcing others to follow the strategies followed by the dominant firm(s) with very little opportunity to do otherwise.

Market dominance of one or a few firms may be due to several possible factors, including lower costs of production (manufacturing, mining, or agriculture), larger scale of operations (economies of scale), or more efficient logistics infrastructure. However, when a participant is, at the same time, a subsidiary of a larger (often multinational) corporation, that relationship may represent an additional strategic advantage. Williamson (1983) proposed the idea that multidivisional companies are able to recreate an internal capital market through decentralizing their decision making processes and making resource allocations according to the rates of return of investments. In such organizations, the more promising markets, in terms of growth potential and/or less intense competition enjoy higher priority in terms of the allocation of investment resources. In the special case of larger multinational corporations, they also enjoy easier access to international debt and capital markets. The relatively easy access and abundance of capital of the multinational corporation may be used to reinforce the market of its subsidiaries in different domestic markets.

We study the special case of a dominant firm that is a subsidiary of a large parent corporation, which has the financial capacity to support an above-average, long-term investment effort, supported with a low leveraged capital structure, using profits retained or internal financing channels of the conglomerate, without significantly affecting its leverage ratios. As a logical

reaction to protect (or minimize the loss of) market share, the rest of the participants in the industry are expected to also make an attempt to increase their investments.

By contrast with the dominant firm, their only alternative, since they lack a similar financial support since they do not belong to a large multinational group is, according to the “pecking order” principle, to stretch their profits reinvestment as much as possible; then increase their use of debt and, only in extreme need, issue additional equity (Myers and Majluf). Considering their smaller size and the absence of a multinational parent, it is to be expected that their access to debt and equity markets will be in less favorable terms than the dominant firm; as such, they will pay higher interest costs and commissions, as well as be subject to more constraining maturities and other conditions. All these more restrictive conditions and relative disadvantages will finally make their capital structure more sensitive to macroeconomic variables and may, in an extreme case of serious cyclical slowdown, or other extraordinary adverse events, push the more leveraged firms into bankruptcy. In the end, the initial movement of the dominant firm will result in an increased concentration of the industry.

Grinblatt and Titman (2002) discuss, among several elements that affect the capital structure decision in the firm, the behavior and actions of its competitors. According to them, capital structure decisions directly affect the firm’s ability to commit to any particular strategy, including the possibility to increase its market share. The same authors also explore the utilization of high leverage ratios by individual members of a less than perfectly competitive industry to send a credible message that they intend to increase their market share to their competitors. When excess installed capacity exists in an industry, the probability that a price war may be detonated increases and may act as dissuasive argument to potential entrants as well as a warning signal to industry incumbents. Under such conditions, more aggressive capital structure firms are vulnerable to predatory pricing from those others with more conservative capital structure.

Equilibrium conditions are frequently fragile in oligopolistic market structures. Dominant firms’ decision to engage in a strategy to increase market share through rapid productive capacity expansion may provoke undesired high costs if any of the other competitors decides to contest the leader and attempt to capture a large portion of the market. The most likely outcome will be a price war that will affect all participants in the industry. Many examples of such outcomes have been documented. For instance, railroads are a typical industry with high fixed costs and an historical propensity toward pricing discipline breakdowns. The duration of railroad price wars

and the level of prices during favorable periods were quite sensitive to the number of firms in the cartel, which varied from three to five during the 1880s (Porter 1983, 1985). During the 1930s, rayon production industry leaders in the United States, American Viscose and du Pont were operating at only 55 percent capacity, and a formal price-fixing agreement was instituted. Nevertheless, financial pressures on individual firms were such that even the largest producers were violating it through off-list selling. The cement industry has also experienced repeated pricing discipline breakdowns when demand declined, so U.S. producers entered into a series of price-fixing arrangement, but these tended to collapse under financial stress (Scherer and Ross 1990). In that sense, price wars may become highly counterproductive for both the market leaders and the rest of the competitors.

In particular, the relation between capital structure and industry dynamics has been documented in many cases. For example, Bolton and Scharfstein (1990) present a theory of predation based on agency problems in financial contracting. They argue that by committing to terminate funding if a firm's performance is poor, investors can mitigate managerial incentive problems. But, constraints result costly in a competitive environment since rival firms then have an incentive to ensure that the firm's performance is indeed poor. Faced with the tradeoff between deterring predation and mitigating incentive problems, they propose to weigh the importance of the incentive problem relative to the predation threat to develop an optimal contract that balances the benefits of deterring predation by relaxing financial constraints against the cost of exacerbating incentive problems. However, they conclude, the optimal contract may or may not deter predation.

Brander and Lewis (1986) argue that the product markets and the financial markets are closely linked. Under oligopolistic conditions where financial and production decisions follow a sequence, they show that due to shareholders' limited liability, as firms take on more debt, they will have an incentive to pursue output strategies that raise returns in good states and lower returns in bad states, since shareholders ignore reductions in returns in bankrupt states and bondholders become the residual claimants. Leveraged firms will adopt a more aggressive posture in production because they have incentives to use their financial structure to influence production conditions in their markets of interest.

Kovenock and Phillips (1995) present empirical evidence on the interaction of capital structure decisions and production behavior. They find that firms are more likely to recapitalize and increase debt financing when they have individual plants of low productivity, when they operate in an

industry that is highly concentrated and when industry capacity utilization is low. Such findings suggest that debt plays a role in highly concentrated industries, where agency costs are not significantly reduced by product market competition.

While more general studies are useful to infer the possible consequences of an aggressive expansion strategy from a dominant firm in an oligopolistic market structure, the literature on this subject also has produced some studies that address the specific case of the supermarkets industry in the United States and, in that sense, provide a more specific insight into the workings of the non-dominant firms' responses. For example, in Chevalier (1995) a detailed study of the supermarket industry included 1) an event study analysis of supermarket LBOs, finding that an LBO announcement increases the market value of the LBO chain's local rivals; and 2) evidence that supermarket chains were more likely to enter and expand in a local market if a large share of the incumbent firms in the local market undertook LBOs. The author also reports that markets in which supermarkets' LBOs have occurred attract entry and expansion. The results of Chevalier's empirical analysis strongly suggest that product-market competition changes when firms radically increase their leverage. Also, Naveen and Tice (2000) study the case of the supermarkets industry in the United States, where Wal-Mart has entered a large number of new markets in a relatively short period¹, and report that when the incumbent firms are larger and more profitable, they respond more aggressively to the arrival of Wal-Mart to their markets. They also document that more leveraged firms respond in a less aggressive fashion. However, firms that undergo LBOs appear to respond more aggressively, suggesting that LBO decisions are different from leverage decisions. In addition to debt, these authors find there are several firm- and market-specific factors likely to impact incumbent investment decisions as a response to Wal-Mart's entry. Firm specific factors include whether the firm is diversified, how dependent a firm is on the specific market under attack, firm profitability, and size; market specific factors likely to be important are market concentration, population changes, and whether the market is urban or rural.

This work's contribution to the literature consists on presenting an empirical analysis of the capital structure decisions that result from the rapid expansion of Wal-Mart in the Mexican market. The supermarkets' industry in Mexico is characterized by evident oligopolistic traits. It is constituted by a small number of firms and highly concentrated. According to information from the Asociación

¹ Notably, that is the central problem studied in this paper for the Mexican market: Wal Mart has increased its market share aggressively and significantly altered the more or less stable equilibrium that existed before its arrival to the country.

Nacional de Tiendas de Autoservicio y Departamentales (National Association of Self-Service and Department Stores), there are 38 member firms in the Self-Service industry. Some of them have a nationwide presence while others only have regional presence. Wal-Mart's entrance and rapid investments expansion has had an impact in terms of the dynamics and composition of the industry. Nafta was expected to be passed until 1993, but Wal-Mart realized there was an interesting potential market to develop South of the border, and it was particularly keen to make a first-move a couple of years earlier, when it negotiated a 50%-50% joint-venture with Cifra, the holding company of Mexico's Aurrera, the largest supermarkets chain at the time and several other lines of business, including cafeterias, typical restaurants, etc.

The financial, logistic and strategic support of its parent company, Wal-Mart U.S., positioned Wal-Mart de México in a privileged situation to develop a very aggressive and successful nationwide market penetration strategy. The other supermarket chains had very few alternatives left: they were forced to respond to the threat with all the resources within their reach. In particular, the need to react to Wal-Mart's market expansion has forced smaller competitors to substantially augment their investment plans, relying more on external financing. In this work we pretend to show that as Wal-Mart's market penetration has proved to be forceful, the rest of the market participants have responded with investment strategies that have represented a modification of their long run capital structure. Such changes, we argue, have not responded to forward looking strategic considerations, but to the more or less urgent need to react in defense of their market position. After some years, the higher and riskier levels of indebtedness have forced some participant to exit the industry and have resulted in greater concentration.

In the following section we present the methodology of the analysis on the Mexican Self-Service Discount Stores Industry that is built on publicly available statistical data and financial statements. In the third section we develop a conceptual model to explain the behavior of non-dominant firms in response to an aggressive expansion strategy of the dominant firm and that supports the hypotheses we propose on the alleged influence of Wal-Mart over the investment and capital structure decisions observed in the non-dominant firms of the industry. The fourth section develops a practical application of the general model developed to the Mexican SSDSI to confirm that the theoretical assumptions find an empirical validation in the recent years' evolution of that market. We conclude by recognizing the small sample size is not appropriate to derive statistically

significant patterns of behavior, but argue that the evidence is very supportive of the analytical interpretation developed for this clinical study.

Methodology

In an oligopolistic market structure, the dominant firm(s) imposes the conditions of competition and force the rest of the participants to follow suit. In order to discern the dynamics of the supermarkets industry in Mexico in recent times we propose an analytical model that presupposes the existence of two types of firms: a) dominant firms that hold a large market share and, for that reason, are in a position to impose price and quantity conditions in the market, as well as to follow strategies that may even be considered anticompetitive to limit the entrance of new participants to the industry; b) the rest of the participants, which hold a more limited market share making them followers of the strategies imposed by the dominant firm(s).

Considering the supermarkets industry is a low level, large volume business, our model considers that the most important motivation that all participants in the industry have is to maintain their market share at any cost and, if possible, increase it. Thus, if the dominant firm (s) doesn't show any obvious intentions to increase its market share, the rest of the firms maintain their original investment strategies unmodified, so as to maintain their own participation or marginally increase it.

The model also assumes that the only way to increase any firm's market share is through additional investments that will result in a larger productive (distribution) capacity. Of course, if a "follower" is faced with sufficient evidence that there is an intention to increase the market share of the dominant firm through aggressive investments, it will respond by emulation increasing its own investments. The assumption that the dominant firm is significantly larger and/or has a corporate relation with a multinational parent that can support its expansion with large amounts of financial resources without significantly affecting its capital structure suggests that it will develop its productive capacity based on long term strategic objectives and, to a certain extent, regardless of short term economic conditions.

By contrast, industry followers will need to make significant efforts to respond to the advances of the dominant firm(s). While the availability of financial resources to support such an emerging expansion strategy may vary depending on the size and financial health of each one of the "followers", it is highly likely that they will need to augment its reliance on external debt funding,

and only under extreme conditions resort to the placement of additional equity shares². If the followers are mainly independent firms, without any corporate linkages that may represent an easy access to financial sources, their access to debt and capital markets may be less straightforward and may also be conditioned by the ongoing macroeconomic conditions.

Under the extreme circumstances posed by a recession, for example, it may happen that while the dominant firm doesn't face the need to slow down its investments program, the rest of the participants will have no choice but to increase the leverage of their capital structure so as to compensate for the economic slowdown and continue investing in defense of their threatened market share.

The investment strategy of the dominant firm

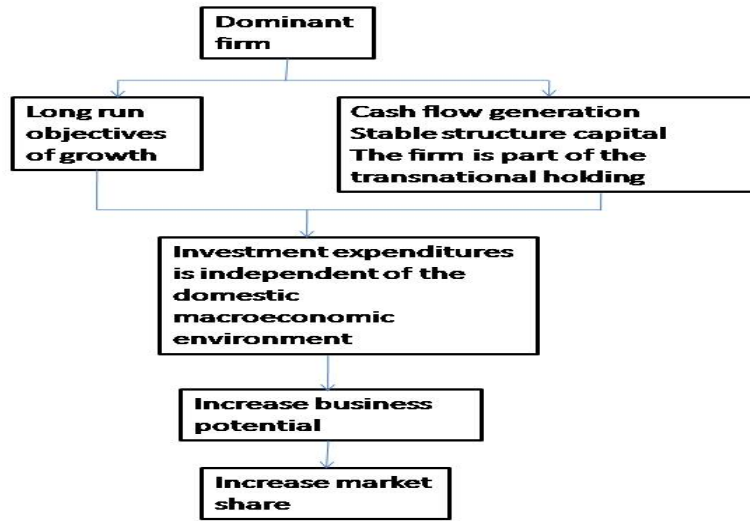
Competition in the discount convenience stores industry is highly dynamic; in the short run, participants compete with pricing strategies, and in the long run they compete by capturing attractive locations (the idea is to capture the most attractive locations by investing in the development of new potentially successful stores). Profitability will come later, when the investment projects mature.

By the same logic, when a dominant firm executes an expansion strategy supported by aggressive investments, there is a build-up of excess capacity in the industry, making the threat of the dominant firm more credible. More so, when it generates large amounts of internal resources and it also has access to low cost financing sources due to its association with a multinational parent, its capital structure will remain within the "targeted" leverage levels and enjoy stability.

Figure 1 presents a behavioral model of the dominant firm:

² Myers and Majluf (1984) discuss the "pecking order" theory within the context of information asymmetry to explain the preference of corporations to finance their expansion with retained earnings in the first place, with debt as a second alternative and with additional equity only if the former two are insufficient to their investment needs.

Behavioral model of dominant firm

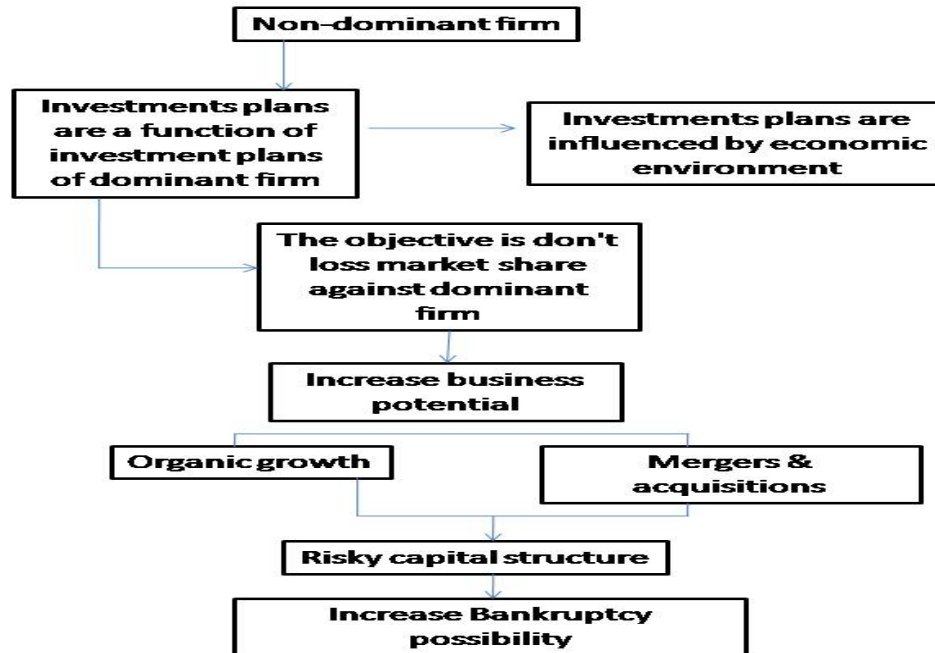


Source: Own elaboration based on several Industrial Organization works and suggested by the observation of the Mexican SSDSI's evolution.

When the dominant firm accelerates its growth through ever increasing investments, the non-dominant firms will be forced to take more debt in their capital structure in order minimize their market share loss, but higher leverage will make them more vulnerable to economic downturns or other unexpected environmental circumstances and increase their bankruptcy risk.

Figure 2 represents a scheme of the behavior of non-dominant firms:

Behavioral model of non-dominant firm

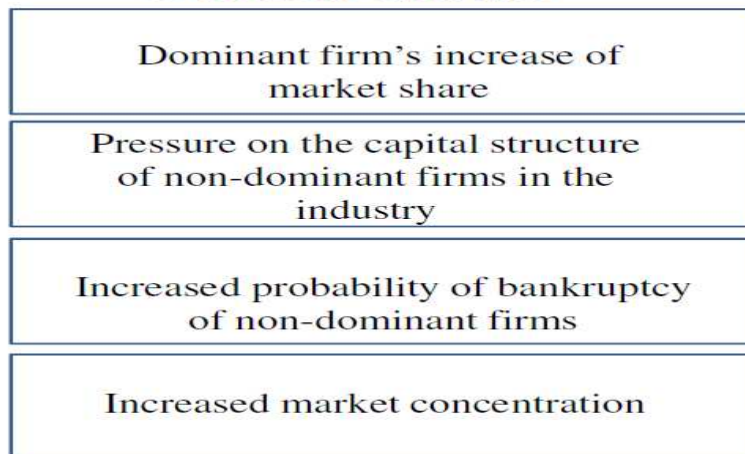


Source: Own elaboration based on several Industrial Organization works and suggested by the observation of the Mexican SSDSI's evolution.

As the dominant firm follows a market-share conquest strategy through increased investments, the likely consequences are: a) the dominant firm will increase its market share; b) the non-dominant firms' capital structure will become more leveraged; c) there is an increase of the bankruptcy risk of the non-dominant firms; and, d) there will be an increased market concentration.

A schematic representation of the General Model on the consequences of the dominant firm's increased investments strategy is presented in Figure 3:

General Model



Source: Own elaboration based on several Industrial Organization works and suggested by the observation of the Mexican SSDSI's evolution.

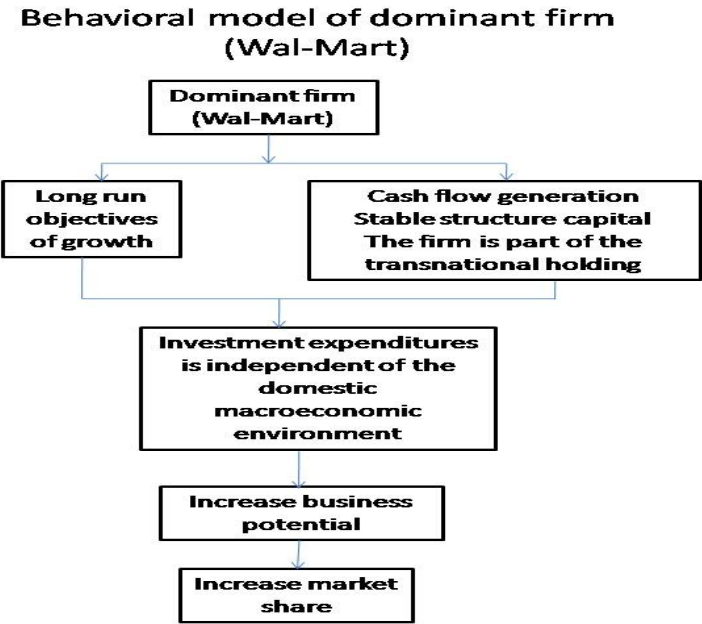
Application of the Model: The Self-Service Discount Stores Industry in Mexico

The self-service discount stores industry in Mexico is characterized by high concentration and the clear dominance of Wal-Mart de México. The recent evolution of the industry shows many traits that closely follow the proposed causality model described above so, and represents a valuable opportunity to validate the theoretical development proposed above. Although a comprehensive database of all industry participants would be ideal, the availability of information is limited and was an influential criterion in the sample choice. We study self-service discount stores firms that have nationwide presence in Mexico and that trade their shares in the Mexican stock market: Wal-Mart, Soriana, Comercial Mexicana and Grupo Gigante (Gigante), that together concentrated 76% of the market in 2005 (Berdegué et al, 2006). The rest of the market is diluted among regional self-service chains. Although one finds marginal differences in the reports of market participation among different analysts, Wal-Mart is the leader of the market controlling 45% of the market, followed by Soriana with a distant 26%, and Comercial Mexicana, with only 11%. While Grupo Chedraui was not included in the sample due to the limited financial information available since it is not a publicly traded firm, it controls as much as 6% of the market (Chavarría 2007).

Wal-Mart's dominance in the discount stores industry is undeniable. According to the ranking of the 500 largest firms by the business magazine *Expansión*, Wal-Mart de México occupied the 5th place. With sales of 224 billion pesos in 2008 the relative economic importance of the firm in the

self-service discount stores industry and in the national economy at large, make of Wal-Mart a clearly dominant firm (Wal-Mart 2009 b). Since it entered the Mexican market in 1990, Wal-Mart has followed a long-term growth strategy, mainly supported with the reinvestment of cash-flows generated by its operations, low cost financing because of its favorable access to international financial markets, thanks to its relationship with Wal-Mart, and the utilization of suppliers credit in a prudent but consistent manner. The result has been that Wal-Mart de México’s investments have followed a very stable and consistent pattern through time. The development of expansion projects has been characterized by their almost total independence of the short-term domestic macroeconomic conditions. Even during periods of economic slowdown, the expansion of its infrastructure has continued, significantly increasing its market share.

Figure 4 represents the role played by Wal-Mart as the dominant firm in the self-service discount stores industry in Mexico:



Source: Own elaboration based on several Industrial Organization works and suggested by the observation of the Mexican SSDSI’s evolution.

The other firms in the sample (Soriana, Comercial Mexicana and Gigante) are considered as non-dominant because of their significantly smaller scale of operations. Most of the time, they behave

in a reactive fashion to Wal-Mart's strategic initiatives with initiatives aimed to preserve their market share. Sometimes, their strategy has centered on achieving organic growth through mergers, like in the case of Soriana and Gigante.

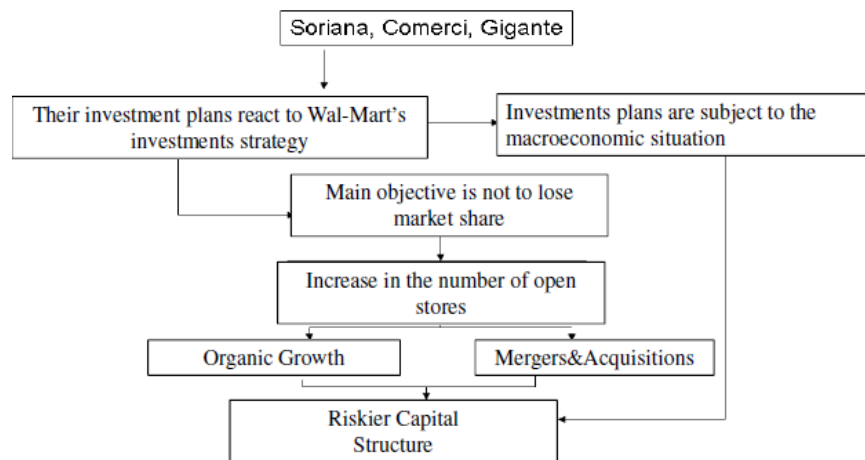
In their attempt to keep pace with the dominant firm's investment strategy, non-dominant firms are likely to obtain a funding mix that will include a large relative component of external resources, mainly in the form of long term debt that will in time increase their financial leverage significantly. However, two caveats are in place. Because, on the one hand, the comparative disadvantage that non-dominant firms have when accessing the financial markets will usually result in a higher cost of funding³, in general they will not be able to compete with the dominant firm under even conditions; and also the fact that, when the domestic economy is not performing satisfactorily, access to new external funds for expansion may not be easy to obtain, making the non-dominant firms' investment plans more sensitive to the economic environment, thus losing its long term consistency. Also, once non-dominant firms have pursued their investment "replicating" strategy for some time, resulting in higher financial leverage than what would otherwise be the case, under adverse environmental conditions resulting from economic cycle fluctuations⁴ (or others), they may be exposed to a sudden aggravation of their financial position and unexpected risk factors may detonate a financial distress condition that can lead them to bankruptcy.

Figure 5 shows the representation of a conceptual model that highlights the environmental conditions, likely decisions and expected consequences faced by non-dominant firms in an oligopolistic market structure, when there is a clearly dominant firm.

³ A possible exception to this logic is the case where a non-dominant firm is, at the same time, a subsidiary of a multinational company that can help reduce the cost of capital of the subsidiary.

⁴ Sometimes, environmental problems may be produced by extraordinary events, e.g., the "subprime mortgages" financial crisis.

The non-dominant firm's general model

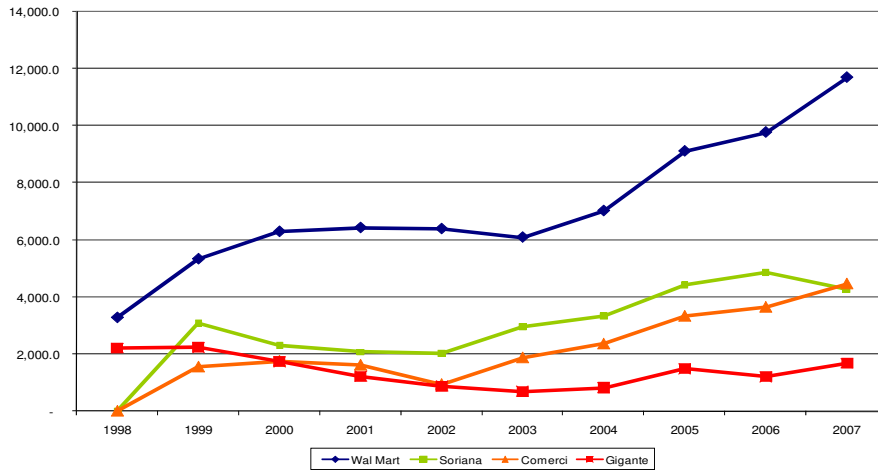


Source: Own elaboration based on several Industrial Organization works and suggested by the observation of the Mexican SSDSI's evolution.

The model proposed to explain the behavior of participants in an oligopolistic industry when there is a dominant firm that determines the rhythm of expansion through a stable investments plan is adequate to analyze the recent evolution of the self-service discount stores industry in Mexico. As described above, Wal-Mart de Mexico fits all the theoretical characteristics of a dominant firm in that market. From 1999 and 2007 Wal-Mart de Mexico's strategy to expand its market penetration justified an investment plan that grew at an average annual rate of 16%; however, since 2004 that growth rate was substantially increased to 18%. During the same period, Wal-Mart de Mexico investments in absolute value were significantly larger than the rest of the firms in our sample, reflecting its long term market share expansion objectives.

The group of non-dominant firms responded to Wal-Mart's aggressive investments plan by increasing their own investment budgets. During the same period, Soriana's investments grew at a rate of 17.8%; Comercial Mexicana's investments budget grew at an astonishing 39.6% and Gigante's at a significant 30.1%. Nevertheless, Wal-Mart's investments in 2007 had reached a level of 11,705 million pesos (expressed in September 2008 pesos' value), much greater than the investments of any of the non-dominant firms, as presented in Graph 1.

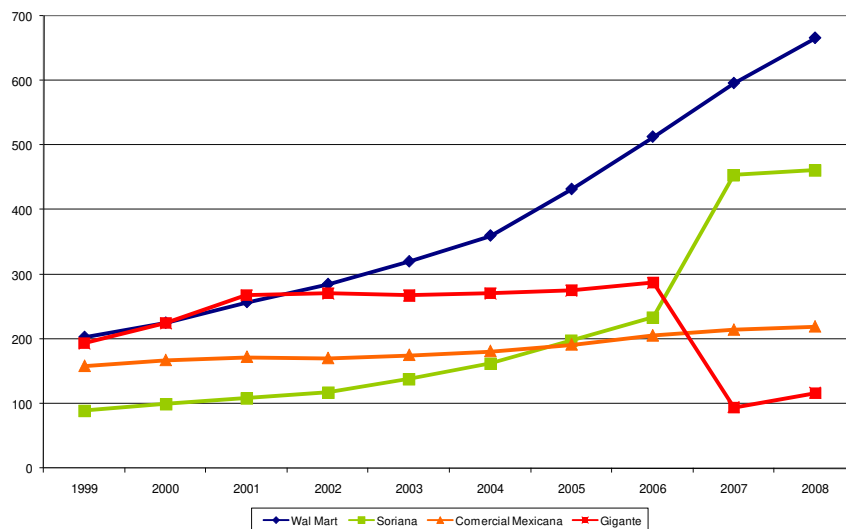
Mexican Supermarket Investment
(Thousands of pesos of Sept 2008)



Source: Elaborated with data from the Asociación Nacional de Tiendas de Autoservicio y Departamentales (National Association of Self-Service and Department Stores).

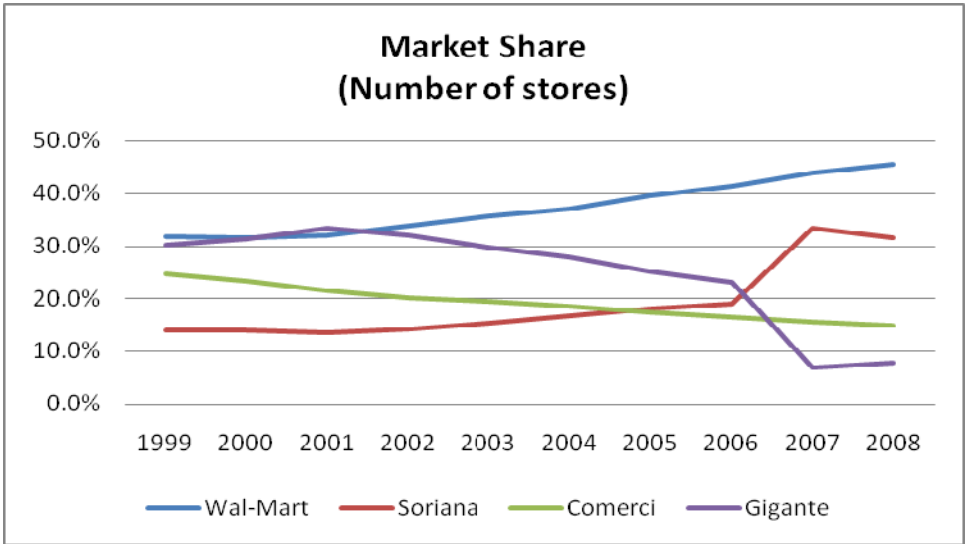
Wal-Mart's investments increased the number of stores it owns from 496 in 2000 to 1,112 in 2008, a 10.4% average annual growth rate. The only other firm in the industry that increased the number of stores it owns was Soriana, passing from 100 in 2000 to 454 in 2007, already considering the stores it acquired when it took control over Gigante's stores. During the same period, Comercial Mexicana's stores passed from 167 to 219, representing a modest average annual growth rate of 3.7%; and Gigante passed from 224 to 287 when it was acquired by Soriana (see Graph 2).

Mexican Supermarket number of stores



Source: Elaborated with data from the Asociación Nacional de Tiendas de Autoservicio y Departamentales (National Association of Self-Service and Department Stores), and the sample companies' Annual Reports.

As a result of its consistent geographic expansion strategy Wal-Mart increased its relative participation in number of stores from 31.4% in 2000 to 45.6% in 2008. Soriana was the only other chain in our sample that recorded an increase of its market share, passing from 14% in 2000 to 18.9% in 2006. In that year, with the acquisition of Gigante, Soriana attained control of 33.4% of the number of stores in the sample by 2008. This being a zero sum game, the other two chains in our sample lost participation and, in the case of Gigante, it sold its business to Soriana in 2008 (See Graph 3).



Source: Elaborated with data from the Asociación Nacional de Tiendas de Autoservicio y Departamentales (National Association of Self-Service and Department Stores), and the sample companies' Annual Reports.

A traditional metric for concentration, the Herfindahl Index⁵, was obtained to quantify the consequences of Wal-Mart's growth and the acquisition of Gigante by Soriana. That measure went from an already concentrated market with a HI of 2,705 in 2000 to a value of 3,356 in 2008,

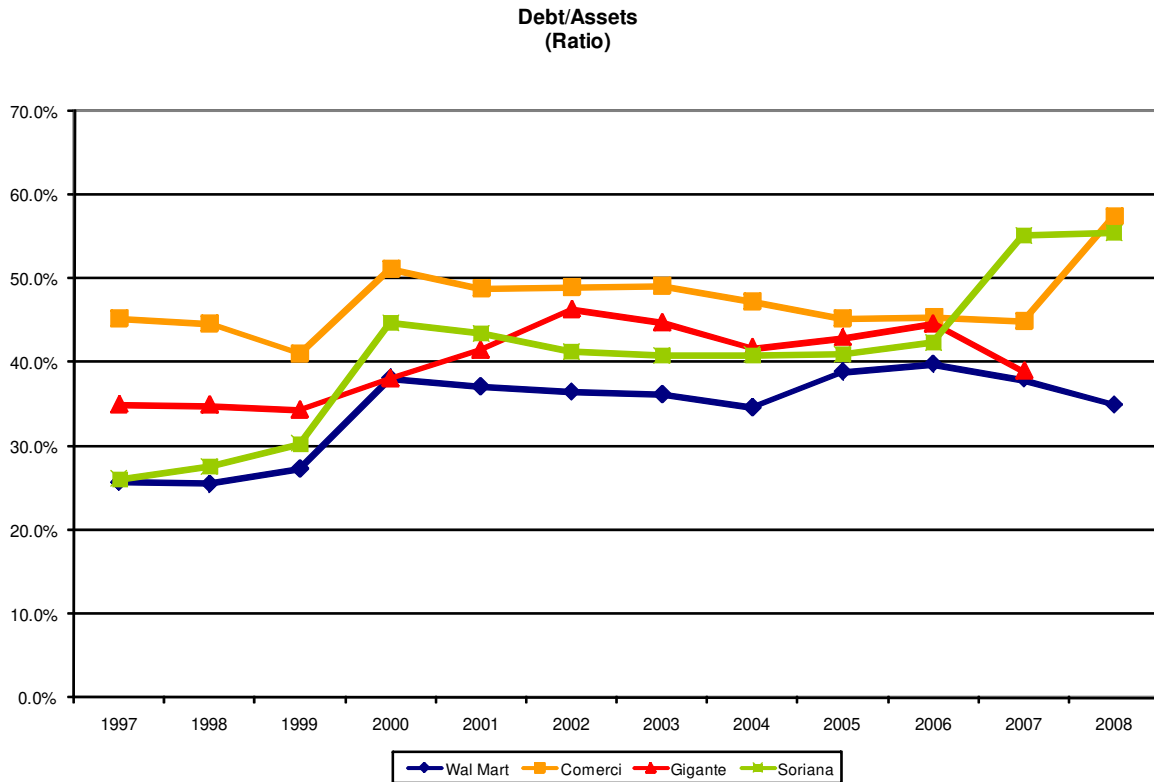
⁵ The Herfindahl index is obtained from the percentage corresponding to each participant. Percentage participations are squared and added. It is equivalent to a weighted average of the size of the agents, expressed in proportion to the market. In the extremes, its value falls in a range from 0 to 10,000 where the latter value represents a monopolistic situation.

reflecting the consequences of the strategies and events that took place in the industry (See Graph 4).



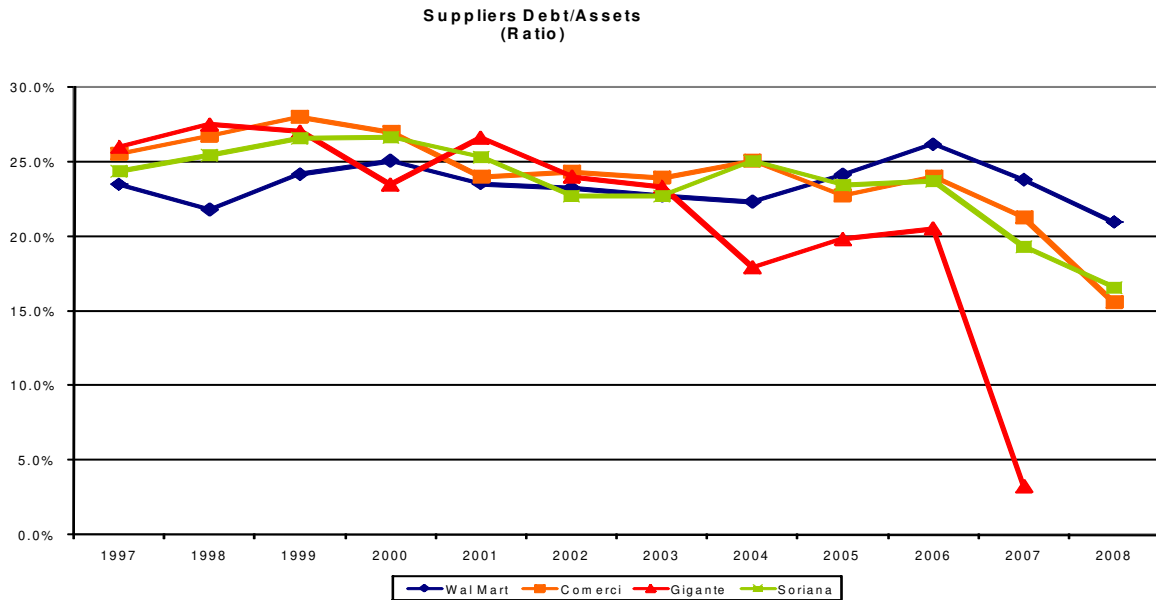
Source: Elaborated with data from the Asociación Nacional de Tiendas de Autoservicio y Departamentales (National Association of Self-Service and Department Stores), and the sample companies' Annual Reports.

According to our conceptual model, the expansion strategy of the dominant firm should present a stable investments growth and be financed in a conservative fashion, i.e., would be expected to show a less leveraged capital structure than the rest of the industry's firms. On a careful analysis of the sample firms' financial statements several things became obvious. During the 2000-2008 period, the debt/assets ratio for Wal-Mart averaged 37%, while the same measure for Comercial Mexicana, Soriana and Gigante was 48.7% , 45% and 42.4%, respectively. During 2007 and 2008 the capital structure of Soriana and Comercial Mexicana showed historically high levels of financial leverage. In Soriana's case that increase may be explained by the debt contracted to finance the acquisition of Gigante's operations; Comercial Mexicana experienced severe losses in its foreign exchange derivatives position due to an unexpected appreciation of the dollar vis à vis the mexican peso. However, during the same period Wal-Mart's leverage decreased marginally (see Graph 5, below).



Source: Financial statements of the sample firms, several years.

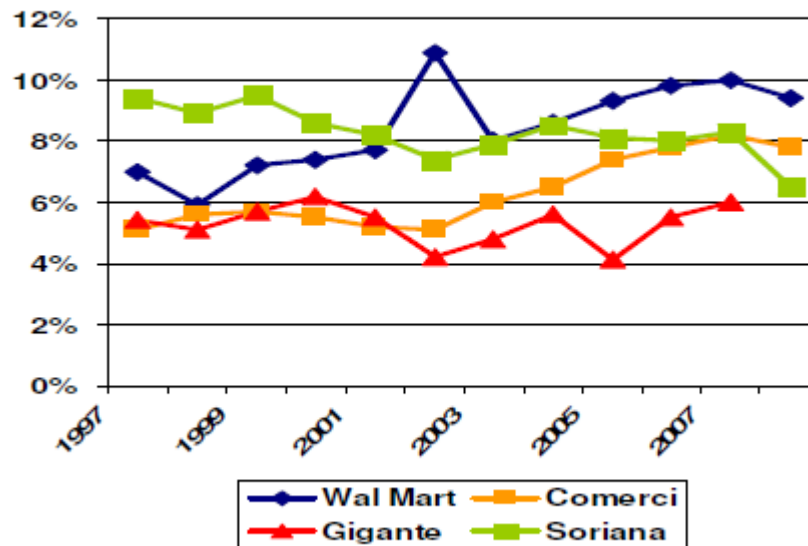
In the SSDSI chains hold a significant bargaining power with respect to their suppliers. The latter understand the benefits of having access to a large number of stores and a geographically diversified market, but are also aware that they compete against many other suppliers that sell very close substitute products. SSDSI chains are in a position to exercise pressure in the purchasing terms they negotiate with their suppliers, so as to obtain longer than average accounts payable periods and obtain a zero-cost short-term financing. But not all SSDSI chains have the same bargaining power: size and financial health are influential factors of the negotiation. During 2006 and 2007 most of Wal-Mart's external funding was obtained from its suppliers, while the rest of the sample firms we studied had a lower supplier credit/total assets ratio. Since the non-dominant firms had a higher leverage ratio than Wal-Mart, and a larger proportion of their external funding had an explicit cost, it follows that they were forced to support a higher financial cost than the dominant firm, once again proving their disadvantaged position with respect to the latter (see Graph 6, below).



Source: Financial statements of the sample firms, several years.

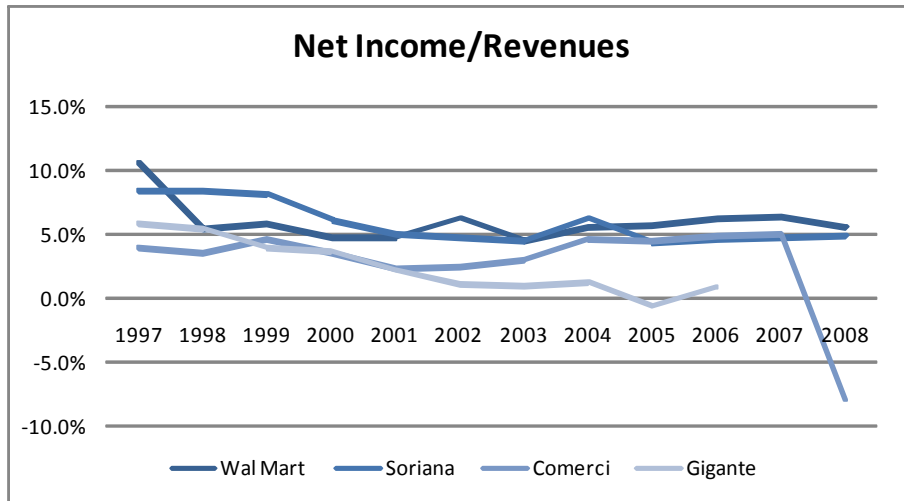
Because of the cost economies derived from bulk logistics and large volume purchase negotiations that are usually obtained in large operations, as well as due to a more conservative (and less expensive) capital structure, Wal-Mart was able to generate a higher EBITDA/sales than the non-dominant firms in the industry, reinforcing its marginal cost advantage, strengthening its leadership position and generating the operating cash flows that supported its investments plan to expand its market share (See Graph 7, below).

EBITDA/Sales



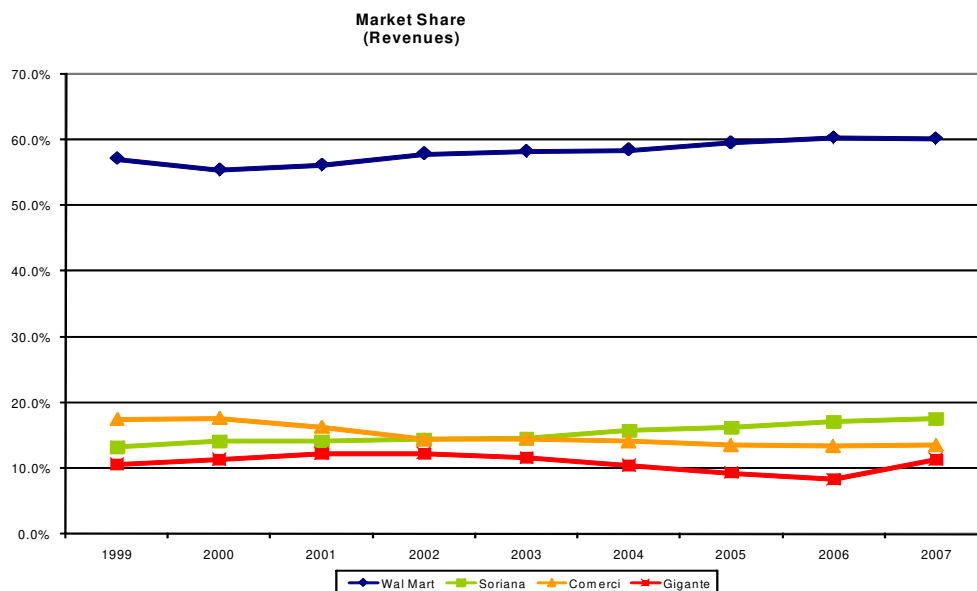
Source: Financial statements of the sample firms, several years.

Profitability is a function of operational as well as financial costs, and investments. As the dominant firm achieves economies of scale, enjoys lower cost of capital and follows a systematic investment plan it creates the conditions to maintain and reinforce its leadership in an industry. Although profit margins on sales in the SSDSI are comparatively lower than in many other economic activities due to intense competition and keen consumer awareness of price differentials, Wal-Mart de Mexico maintained a marginally higher ratio than the non-dominant firms in our sample during the last four years (See Figure 8). Comercial Mexicana, maintained an average profitability during most of the period reported but, during the last quarter of 2008, experienced a very large loss (around USD 200 million) associated to an erroneous directional bet on the direction of the Mexican peso exchange rate with respect to the US dollar (See Graph 8, below).



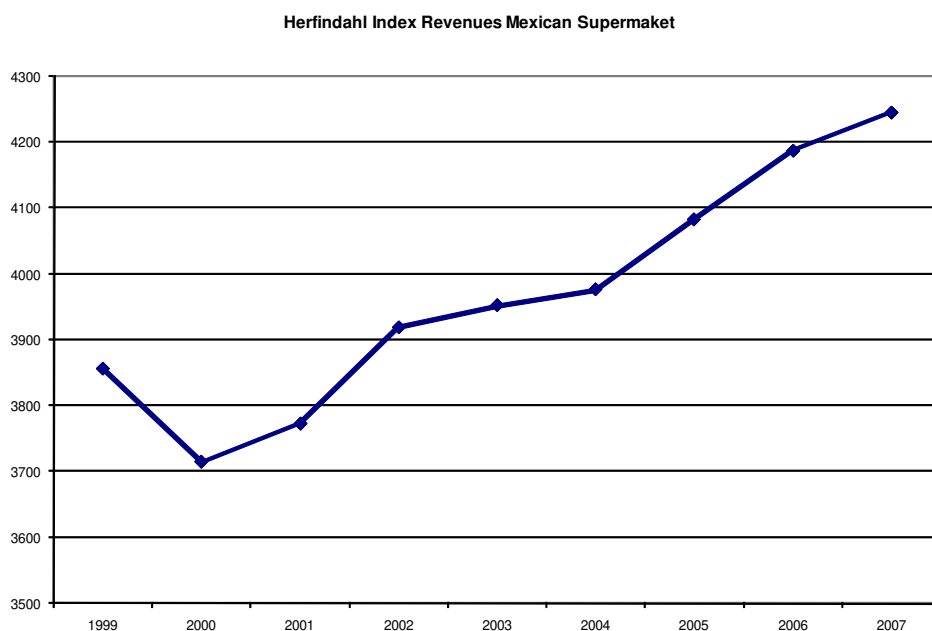
Source: Financial statements of the sample firms, several years.

If market share is measured in terms of income, Wal-Mart was able to satisfactorily maintain and marginally augment its participation. The other market participants found it hard to maintain their market share. In part, that fact may be explained by the additional burden that a high leverage represents in terms of free cash flow available for expansion investment and promotional expenditures. In particular, Gigante started losing its participation in the industry's income even before it transferred its self-service discount stores towards the end of 2007, as may be observed in Graph 9, below.



Source: Financial statements of the sample firms, several years.

If the industry's income concentration is measured with a Herfindahl Index it is easy to observe a growing concentration. With the acquisition of Gigante's stores by Gigante, the concentration levels increase further during the last two years (2007-2008), as predicted by the theoretical model proposed, and reflected in Graph 10, below:



Source: Financial statements of the sample firms, several years.

Conclusion

A dominant firm in a highly concentrated market may substantially increase its productive investment budget so as to augment its market share. The other firms in the industry need to act, accordingly, by also increasing their own investment budgets; otherwise, they face the non-desirable perspective of losing market share to the dominant firm. If the free cash flow generated from the operations is not enough to support the emerging investment strategy, then non-dominant firms will choose to use more debt, and only in extreme circumstances also issue more equity ("pecking order hypothesis"). In our sample, there was one non-dominant participant firm, Comercial Mexicana, decided to follow a risky strategy with derivative contracts, possibly with the intention to increase short-term returns and liquid resources to support its defensive strategy, but was not successful, took big losses in its position, and ended up requesting bankruptcy protection.

Another non-dominant participant, Gigante, which had a comparatively weak capital structure during the period of analysis, chose to exit the market SSDSI and just keep some high-end businesses in which it has some competitive advantages over the dominant firm.

The only non-dominant firm in the sample that improved its market share, due to the absorption of the operation abandoned by Gigante, was Soriana. However, the high financial leverage it required to pay for its acquisition took place at a difficult moment, as the economy entered into a volatile and slow period, thus creating additional difficulties for refinancing its liabilities.

The concentration levels observed in the SSDSI in Mexico increased during the period that goes from 2000-2008, in a good measure as a consequence of the continuous expansion of the dominant firm's infrastructure. The aggressive investments program followed by Wal-Mart forced the rest of the participants in the industry to react making extraordinary efforts to increase their own investment budgets. In the process, the latter's capital structure became more leveraged and exposed them to other risks that eventually affected their long-term viability.

While the extremely small size of the sample data available for the Mexican SSDSI does not allow for any significant statistical analysis, the evidence presented in this work suggests there are direct relations between the strategy of Wal-Mart, the dominant firm, and the other three public firms for which we were able to obtain information. The logical inferences proposed in the conceptual analysis seem supported with the casuistic evidence discussed. The results seem to be sufficiently robust so as to justify the conclusion that the capital structure of the non-dominant firms was, in a good measure, determined by the dominant firm's strategy.

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