

The Impact of Alternative Modes of Expansion on Performance: An Empirical Investigation in Global Retailing

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Abstract:

The size-performance relationship has long been a major research topic both in industrial organization and in strategy. In the late sixties, it has given rise to such famous strategy concepts as the so-called "experience curve", but has since generated only limited interest. More recently, much research has been devoted to examining mergers and acquisitions on the one hand, and inter-firm alliances on the other hand. Both these moves affect a firm's size in one way or another and are thus likely to have an impact on performance. However, the work on M&As or on alliances very rarely compares these different modes of growth to one another, or to organic growth. Our research aims specifically at analyzing the impact of each alternative mode of growth on the size effects resulting from the achieved growth. In this paper we develop conceptual arguments on the relative impact of these modes of growth on performance. We then test the resulting hypotheses on a sample of 54 firms in the global retail sector over the 1984-2001 period. Our initial results suggest that both M&As and alliances negatively affect performance. However, we show that the choice to form alliances or engage in M&As is determined by firm characteristics that also affect performance; when accounting for this endogeneity, we find that neither alliances nor M&As have a significant impact on performance.

Key Words:

Modes of Expansion, Strategic Alliances, Mergers & Acquisitions, Endogeneity.



INTRODUCTION

The size-performance relationship has long been a subject of investigation in economics (Smith, 1776; Ricardo, 1821; Marshall, 1890; Mason, 1939; Bain, 1951; Robinson, 1958; Scherer, 1970; Panzar and Willig, 1981). This relationship has also led to the development of one of the very first concepts used in strategy: the experience curve (Boston Consulting Group, 1970). After having been the subject of much research for a few years (Buzzell, Gale and Sultan, 1975), the link between size and performance has practically stopped generating any real interest among strategic management academics; only very recently has this topic sparked new interest and led to new research (Dobrev and Carroll, 2003; Canals, 2001).

During the last twenty years, however, much strategy research has dealt with mergers and acquisitions on the one hand and with strategic alliances on the other hand. When these moves involve firms from the same industry, they inevitably generate size effects. Most studies on mergers and acquisitions (Seth, 1990; Datta 1991; Capron, 1999; Lubatkin, 1987; Singh and Montgomery, 1987) or on alliances (Porter and Fuller, 1986; Dussauge, Garrette and Mitchell, 2000) recognize that growth and its potential impact on performance are among the main incentives to merge or ally. However, most of the work on mergers or on alliances aims at comparing the performance impact of various types of either mergers and acquisitions, or alliances, rather than to compare these different modes of growth to one another and to organic growth. The only areas in which these three alternative modes of expansion have been extensively investigated and compared are international expansion (Gatignon and Anderson, 1988; Contractor and Lorange, 1988; Kogut and Singh, 1988; Singh and Kogut, 1989; Gomes-Casseres, 1989; Hennart and Reddy, 1997; Anand and Delios, 2002), diversification (Yip, 1982; Simmonds, 1990; Busija, O'Neill and Zeithaml, 1997), and, more recently, resource acquisition (Karim and Mitchell, 2001; Hagedoorn and Duysters, 2002).

Our research, in contrast, aims specifically at analyzing the impact of each alternative mode of growth on the size effects resulting from the achieved growth. In other words, we seek to determine whether mergers and acquisitions on the one hand, and alliances on the other hand, enhance or limit the size effects that are achieved following internal

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developments. In the first section of this paper, we start out by reviewing the relevant literature on the size-performance relationship; the main size-related determinants of performance put forth by the literature include: economies of scale, economies of scope, market power, learning and experience effects. We then link this to existing research on alternative modes of growth and make predictions on the relative impact of the three considered modes of expansion, i.e. organic growth, mergers & acquisitions and alliances, on performance. In a second section, we test our hypotheses on an unbalanced sample of 54 firms from the global retail sector over 18 years. However, recognizing that firms do not randomly choose one mode of expansion over another, we specifically deal with the endogeneity issue thanks to a two-stage model. In a third section, we present results confirming that not accounting for endogeneity would lead to erroneous conclusions. Finally we discuss our results, point out limitations of the study and suggest avenues for further research.

1. BACKGROUND AND PREDICTIONS

a. The size performance relationship

The size-performance relationship has long been a topic of major interest in both the economics and strategy literatures. As early as 1776, Adam Smith suggested the existence and importance of such a link when he analyzed the benefits of the division of labor and task specialization. Shortly afterwards, Ricardo (1821) expanded on these ideas by introducing the notions of increasing and decreasing returns. Later still, Marshall (1890; 1920) argued that decreasing rates of return were primarily found in agricultural activities while most manufacturing and trade activities tended to benefit from "production on a large scale". Marshall also identified three major sources of advantage related to large scale production: economy of skill, economy of machinery and economy of materials. The way in which Smith and Ricardo, and to some extent Marshall, analyzed the size-performance relationship emphasized productivity improvements; these productivity improvements were seen primarily as achieved through spreading fixed costs on larger production volumes and through increased labor specialization. Later authors put forth the notion of "economies of massed reserves" (Robinson, 1958); this notion refers to the fact that the inventory of raw materials and finished goods, as well as excess production capacity needed to adjust to the various

kinds of uncertainty (fluctuations in demand, machine downtime, etc.) do not increase proportionally with output. Finally, an additional cause of the size-performance relationship is given by a physical law called the "cube-square" rule, which stipulates that the cost of production assets increases less than proportionally with production capacity (Scherer, 1970; Besanko, Dranove and Shanley, 2000).

Since the end of the XIXth century, industrial organization economists have argued that a major factor in the size-performance relationship is market power. Increasing firm size, associated with greater concentration, make it possible for large competitors to expand the spread between production costs and prices charged to customers by distorting market mechanisms (Marshall, 1890, 1920; Chamberlain, 1933; Mason, 1939; Bain, 1951). Large firms would thus be able to improve their profits by altering the way in which rents are shared in their favor; this has lead Scherer (1970) to qualify these gains "pecuniary economies".

Other economists have re-considered the size-performance relationship by introducing the notions of "economies of scope" (Panzar and Willig, 1981) or of "economies of size" (Penrose, 1959). These notions are based on the observation that increased efficiency need not necessarily result from greater output of a particular final good, but may be produced instead by increasing the output of several different goods, provided these goods incorporate some common components or are produced using the same physical assets or intangible resources. The economies of scope concept thus challenges the idea according to which increased efficiency necessarily results from greater division of labor and specialization.

All these notions have been recycled into one of the first major strategy concepts: the experience curve (Boston Consulting Group 1970). The experience curve establishes a very deterministic and dynamic relationship between a firm's size and its performance or, more precisely, between its cumulated production volume and its average unit cost. The experience curve incorporates most of the above mentioned size effects: economies of scale, market power, and learning which Adam Smith had implicitly associated to the division of labor and specialization. Wright (1936) further observed and analyzed the impact of learning on costs in a more dynamic perspective. Observing the production of airplanes, Wright found that,

holding constant the organization of labor, i.e. the level of specialization, labor productivity increased over time with the cumulated volume of aircraft produced.

The Boston Consulting Group summarized the experience curve effect in the following way: total average unit cost "declines by some characteristic amount each time accumulated experience is doubled... The characteristic decline is consistently 20% to 30% each time accumulated production is doubled. The decline goes on in time without limit (in constant dollars)... The rate of decline is surprisingly consistent even from industry to industry" (Boston Consulting Group, 1970: p.12). The Boston Consulting Group went on to argue that, because of the learning component it incorporates, the experience curve effect is not automatic –contrary to economies of scale which necessarily result from the spreading of fixed costs- but is produced through deliberate and constant efforts of the firm. In addition, the Boston Consulting Group viewed learning not only as individual, but also as organizational; in other words, firms with more experience, i.e. greater output, learn how to better organize production and are able to better innovate, which are both sources of increased efficiency.

The Boston Consulting Group used the experience curve in a prescriptive way to suggest that the best strategy was always to gain market share and eventually become the market leader. From the late sixties to the early eighties, the experience curve, and the business portfolio model that was derived from it, were the main concepts used in strategy by practitioners and academics alike. Numerous studies were conducted at the time to confirm, precise and sometimes criticize these concepts (Buzzell, Gale et Sultan, 1975; Jacobson et Aaker, 1985; Hall et Howell, 1985; Ross, 1986; Baden-Fuller, 1983).

Since the early eighties, many of the implications of the experience curve have been challenged for their simplistic nature. Porter, for example (1980), argued early on that volume based strategies are only one of several options open to firms and that a favorable cost position need not necessarily result from large size and production volume. Other authors even go so far as to suggest that any good strategy should optimize the trade-off between low cost and differentiation based on specific features of the business such as: price elasticity, substitutability, etc. (Karnani, 1984). Since the mid-eighties, the strategy community has



widely embraced the resource based view of the firm (Wernerfelt, 1984; Barney, 1986; Conner and Prahalad, 1996) which has further reduced the interest for size as a source of competitive advantage and a determinant of performance; indeed, size can be "acquired" via aggressive pricing, increased advertising, or through the acquisition of competitors and can therefore not be considered as a strategic resource as defined by the proponents of the resource-based view. As a consequence, the study of the size performance relationship has not been the topic of much research during the last fifteen to twenty years. Nonetheless, in most industries, firms continue to aggressively seek rapid growth, often on the implicit premise that increased size will lead to enhanced profitability (Canals, 2001).

b. Alternative Modes of Growth

As the size-performance relationship was generating little interest among strategy researchers, mergers and acquisitions on the one hand and alliances on the other hand were becoming very popular research topics. Interestingly enough, the literatures on mergers and acquisitions as well as on alliances both acknowledge that size and the expected subsequent improvement in performance are major objectives pursued by firms engaging in such moves. In the literature on mergers and acquisitions, horizontal acquisitions, which increase firm size in a given business, have been argued to create the greatest potential for economies of scale (Singh & Montgomery 1987; Seth 1990; Healy Palepu & Ruback 1992; Capron 1999) and market power (Stigler 1950; Barton & Sherman 1984). Other types of acquisitions concentric vertical, conglomeral, etc.-, despite the fact they also increase overall firm size have been presented as creating primarily other kinds of benefits, that are less directly sizerelated (synergies, risk reduction, transaction costs...). In a similar way, the literature on alliances has distinguished between scale and link alliances (Hennart, 1988). Scale alliances are said to be formed to take advantage of size related benefits, despite the fact they do not literally result in increased size for the participating firms; in this respect, they can be seen as leading to a "virtual" size increase. Link or complementary alliances, in contrast have been described as primarily pursuing synergy related advantages.

Thus, while it is widely acknowledged that size related benefits are an objective of many alliances and M&As, most studies on mergers and acquisitions or on alliances have focused on one or the other of these strategic moves and very rarely compare these moves to one



another, or to alternative modes of expansion such as organic growth. Overall, existing research usually views a choice on mode of expansion as a strategy decision while we consider such choice as a means through which to pursue a given strategy. In other words, we aim at very clearly disentangling direction of expansion and mode of expansion, and limit our arguments to expansion within the same business domain, focusing on how mode choice impacts the size effects associated with such expansion.

Most research which has examined the size effects created by mergers and acquisitions ends up comparing those M&As that primarily aim at increasing size to other types of M&As, notably those that seek the control of upstream or downstream activities or those that aim at combining complementary activities or resources, etc. (Seth, 1990; Capron, Dussauge and Mitchell, 1998; Capron, 1999). Similarly, research on alliances often compares scale alliances to other types, notably complementary alliances (Hennart, 1988; Nohria and Garcia-Pont, 1991; Dussauge, Garrette and Mitchell, 2000). The only issues in strategy that have lead to a comparison of the respective advantages and disadvantages of mergers and acquisitions, alliances and organic growth are international expansion (Gatignon and Anderson, 1988; Contractor and Lorange, 1988; Kogut and Singh, 1988; Singh and Kogut, 1989; Gomes-Casseres, 1989, 1990; Hennart and Reddy, 1997; Anand and Delios, 2002), to a lesser extent diversification (Yip, 1982; Simmonds, 1990; Busija, O'Neill and Zeithaml, 1997) and, more recently, the acquisition of new resources and capabilities (Karim and Mitchell, 2001; Hagedoorn and Duysters, 2002). However, most studies on these topics focus on the factors determining the choice of one mode over another rather than on the performance implications of such a choice.

Our own research aims at exploring the influence of the mode of growth on the sizeperformance relationship.

c. Hypotheses

More precisely, the objective of our research is to determine whether the way in which a firm chooses to grow impacts the benefits it derives from achieving a given size. Thus we will focus on mergers and acquisitions that result in increasing the size of the focal firm in its industry, i.e. horizontal mergers and acquisitions. Similarly, we will only examine scale alliances formed by firms operating in the same industry. The empirical setting for our study,

the global retail industry, was chosen because of the unambiguous size impact of most mergers and acquisitions or alliances between incumbent firms.

Before we consider the specific impact of alternative modes of expansion, we examine the effect of size on overall performance. Based on our previous literature review, we expect size to positively impact performance and can thus formulate the following hypothesis:

H1: Overall firm performance is positively related to size

We now turn to the specific impact of the alternative modes of expansion. Each of the three modes of expansion we examine –mergers and acquisitions, alliances, organic growth – is likely to produce specific benefits but also raise particular problems. Because of their particular attributes, these alternative modes of development can be expected to have contrasted influences on the various factors that drive the size - performance relationship: economies of scale, learning, and market power. We have chosen to distinguish those size effects that enhance economic efficiency – that we will term "economies of scale" from now on – from those size effects that translate into increased rent for the firm, through a more favorable sharing of economic value, but with no improvement in overall economic efficiency – and which we will term "market power" from now on -. We can note that learning, which may also be a consequence of size, can impact both economies of scale and market power. Economies of scale on the one hand, and market power on the other hand, are impacted differently by the various modes of growth a firm may choose to pursue.

Concerning mergers and acquisitions, there is a wide consensus in the literature on the fact that post-merger integration is a difficult and costly process that requires the implementation of specific policies in order to reap the benefits of the greater size achieved (Young, 1981; Porter, 1987; Walsh, 1988; Caves, 1989; Seth, 1990, Capron, 1999). Economies of scale are a direct consequence of size in a particular line of business. Because they often associate firms with somewhat heterogeneous product lines, M&As will only produce economies of scale commensurate with the total size of the post merger firm once a process of rationalization has been implemented; it is unlikely this ex-post rationalization process can result in a greater level of consistency than what would result from internal growth which takes place incrementally in line with the growth in volume output, and allows

for ongoing and subtle adjustments aimed at optimizing total production costs (Scherer, 1970; Simmonds, 1990). M&As are also likely to result in sub-optimal asset juxtaposition as well as in redundancies that internal growth can more easily avoid by deliberately and progressively planning for expansion. Achieving potential economies of scale following M&As will therefore require asset divestiture and reorganization, which implies additional costs at the inception (Seth, 1990; Dranove and Shanley 1995). In addition, mergers and acquisitions usually result in the acquisition of undesired assets (Hennart, 1988), which makes it all the more difficult to achieve the potential economies of scale. Overall, we expect that economies of scale resulting from M&As will, at best, equal those of a company which has achieved the same size via internal development.

Concerning market power, our previous arguments on economies of scale resulting from mergers and acquisitions may continue to hold: the potential advantages resulting from combining purchases will only accrue once purchasing processes and procurements have been fully integrated, i.e. once at least some product line and supplier portfolio rationalization has taken place, allowing for the full impact of size to be leveraged with the remaining suppliers. This process will inevitably take time and may in fact never be carried out as far as is the case with internal growth.

A contrary argument focuses on post-merger learning: the new combined entity should benefit from the best purchasing –or selling- conditions available from each merging firm for each procured input –or marketed good- (Karim and Mitchell 2000). In the case of organic growth such "internal benchmarking" is impossible. However, while some information asymmetry on supplier prices or conditions offered to customers may exist, it is doubtful it can last very long and, especially in a fairly concentrated industry, the benefits of such "internal benchmarking" are likely to be small and will not offset the disadvantages of product and supplier rationalization. Another contrary argument states that mergers and acquisitions –unlike organic growth- lead to greater industry concentration by mechanically reducing the number of independent competitors, thus resulting in greater market power for those that remain (Penrose, 1959; Lubatkin, Schulze, Mainkar and Cotterill, 2001). However, this increased market power accrues at the industry, rather than firm, level. Enhanced firm performance can thus be associated with overall M&A activity but not with the firm's individual choice to favor one particular mode of growth over another. Overall, most recent research suggests that there is little empirical support for the notion according to which horizontal mergers and acquisitions enhance market power (Anand and Singh, 1997; Pautler, 2003).

Therefore, we predict that, in the best of cases and accounting for size, post M&A performance will progressively and tangentially approach the performance achieved through internal growth but is very unlikely to exceed it. On this basis, we can formulate the following hypothesis:

H2: Accounting for size, mergers and acquisitions have a negative impact on performance.

In the particular case of a mature or declining industry, with some overcapacity, it has been argued that mergers and acquisitions may be preferable to organic growth because they avoid the creation of further overcapacity in the market (Scherer 1970). This might work against our above stated prediction. To avoid this problem, we have limited our argument to expanding sectors and have chosen to empirically test our hypotheses in a rapidly growing industry.

Scale alliances are formed to allow firms to combine similar assets and activities in order to reduce the investments made by each partner and thus benefit from economies of scale that each partner would be unable to achieve on its own. In scale alliances, however, activities are very rarely fully combined (Garrette and Dussauge, 2000). Indeed, alliances usually cover only part of a firm's entire business or product portfolio and deal with only certain functions or tasks (Khanna, Gulati and Nohria, 1998). In addition, because alliances are meant to be reversible and should allow the partners to pull out if they so wish, asset integration and the elimination of redundancies tend to be limited. As each partner firm in the alliance pursues its own individual objectives, the use of assets and resources can only be optimized at the firm level – rather than at the collective, alliance level - which further limits the extent of the economies of scale that can be expected from scale alliances. This suggests that alliances cannot produce the same economies of scale as internal growth or even as mergers and acquisitions, if the combined size of the collaborating firms is considered. However, relative



to its own size, each partner firm should benefit from some additional economies of scale resulting from collaboration.

Similarly, coordinating purchases or pricing within the scope of an alliance should create a potential for additional market power for both partners. Unlike internal growth, but similarly to M&As, alliances may offer opportunities for benchmarking and better selecting best practices. However, scale alliances are unlikely to result in the same degree of integration of purchasing as do mergers and acquisitions, and even more so, internal growth. Purchasing procedures will tend to remain somewhat separate, while product lines will not be rationalized as extensively, making it difficult to fully take advantage of the potential market power associated with the combined size of procurements of the allied firms. While alliances provide an adequate context in which to coordinate pricing, this may be limited by product line and market positioning inconsistencies, not to mention legal constraints. In addition, alliances rarely cover firms' entire business thus limiting the scope of the purchased inputs or commercialized products for which market power is enhanced by the alliance. However, relative to its own size, each partner firm should leverage the alliance to enhance its market power.

Overall, we expect allying firms to be able to benefit from some of the size advantages resulting from the combination of their businesses by pooling at least some of their purchasing and coordinating their operations to some extent. Therefore, while we do not expect alliances to produce a size effect corresponding to the size of the combined allied firms, we anticipate they will, through what we might call a "virtual size" effect, enhance performance beyond the level corresponding to the size of each allied firm. We can thus formulate the following hypothesis:

H3: Accounting for firm size, scale alliances have a positive impact on performance

2. METHODOLOGY

The empirical setting in which we tested our hypotheses is the global retailing industry. We selected this industry because several of its structural features make it particularly suitable for our research. First of all, the pursuit of growth has been a major strategic objective for

most players in the industry, as reported by both academics (Akehurst, 1983; Higgins and Kerin, 1983; Pellegrini, 1994; Filser, 1998) and practitioners (D. Bernard, CEO of Carrefour for example stated in 1999 that "size is what drives our performance"). During the last 20 to 30 years, the industry has undergone a dramatic concentration process, thus suggesting that size and its related benefits, i.e. economies of scale and market power, are critical success factors (Tucker, 1972; Porter 1974; Akehurst, 1983; Grant, 1987; Shaw, Nisbet and Dawson, 1989; Pellegrini, 1994). Thus, retailing is a particularly relevant industry in which to examine the performance impact of alternative modes of growth because all three major modes have been used extensively. In addition, most mergers and acquisitions as well as alliances in the retail sector have involved competitors and were unquestionably motivated by the pursuit of greater size.

Mergers and acquisitions have long been an established mode of growth in retailing (Kerin and Varaiya, 1985; Kumar, Kerin and Pereira, 1991; Burt and Limmack, 2001) and have been the subject of extensive investigation, focused in particular on comparing their performance to that of organic growth (Akehurst, 1983; Burt and Sparks, 1994). Alliances on the other hand have been used in this sector for many years (Robinson and Clarke-Hill, 1995; Reijinders and Verhallen, 1996). As early as 1910, Marshall mentioned cooperation among small retailers as a means for such retailers to benefit from some of the advantages of their larger rivals. More recently, numerous alliances have been formed by retailing groups. In France for example, many retailers reacted to the 1999 Carrefour-Promodes merger by announcing the formation of alliances (Casino and Cora, Leclerc and System U, Auchan and Casino....). Few academic studies, however, have looked at alliances and their performance implications in the retail sector (Robinson and Clarke-Hill, 1995).

Finally, retailing –as we have chosen to define it in this study- is a sector in which the impact of size on performance is primarily attributable to cost differences. Indeed, performance is not significantly affected by different choices in terms of positioning, quality, differentiation, etc. Mass retailers distribute very similar, often identical, goods, and therefore compete mainly on price. Innovations in retailing format or in terms of merchandising are very easy to imitate and cannot form the basis of any sustainable differentiation strategy (Pellegrini, 1994; Filser 1998). Differences in performance thus reflect cost differences and



can be used to compare the effects of various modes of expansion on the size-performance relationship.

The main data sources we used for this study are the Osiris data base for all the information on the size and performance of the firms included in our sample, covering the 1984-2001 period, and the Thomson Mergers data base for the identification of all mergers and acquisitions as well as alliances having taken place in the industry. We complemented these two main sources with information collected from EBSCO, Lexis-Nexis and Data Monitor as well as from firm annual reports and public websites. Our sample was selected from a list of the world's top retail firms compiled by Deloitte & Touche. Of the 200 firms listed by Deloitte, 115 fall into what we consider to be mass retailing. Indeed, firms such as Home Depot, Walgreen's or Sears correspond to somewhat specialized retailing formats and were therefore excluded. More specifically, we chose to consider those retail firms that fell into one of the following categories as reported by Deloitte: "hypermarket", "supermarket", "discount", "warehouse". Finally, of these 115 firms, we were only able to consider the 54 publicly traded companies for which Osiris reports the detailed financial information we needed to carry out our study. The period of study, 1984 to 2001, is that for which information is made available in the Osiris data base; for some companies, information was not available over the full time range, constraining us to use an unbalanced sample. Period of study is also well-suited to our purpose as, during that period, the industry has undergone rapid growth and significant concentration, with extensive implementation of the three modes of growth we are considering. Our resulting unbalanced sample consists of 752 companyyear observations, with sales ranging from 119 million US dollars to 23 billion US dollars. Some of the companies in the sample are purely local such as Target or Albertson's, while other are present in more than 20 countries around the world such as Carrefour, Ahold or Metro.

The main determinants of performance we are examining are firm size and mode of expansion. The main indicators of size used in previous studies on the retail industry are: total revenue, number of stores or total selling surface. We have chosen to use total revenue as our indicator of size, both for availability and comparability reasons. Most studies on industry concentration in retailing have used a similar measure (Akehurst, 1983). We deliberately use

the size and mode of growth variables separately, without testing for possible interaction effects. Indeed, our research purpose is to analyze the performance impact of arriving at a given size through one mode versus another. We are not trying to determine to what extent one mode is more appropriate for firms of a given size than for others, which is what an interaction term would explore.

As far as performance is concerned, we have chosen to use accounting, rather than market-based, measures because we focus on the real economic impact of size and mode of growth rather than on investor anticipations of such effects. Therefore, in line with previous research pursuing similar objectives in a broad range of industries (Lamont and Anderson, 1985; Simmonds, 1990; D'Aveni and Ravenscraft 1994) or, more specifically, in the retail industry (Akehurst, 1983; Reijnders and Verhallen 1996), we have decided to measure performance using net profit margin.

Regarding modes of growth, we identified for each firm and each year in our time series, whether a major merger or acquisition had been carried out or whether a scale alliance had been formed. We considered as "major", those mergers and acquisitions in which the smaller of the two firms' sales accounted for at least 5% of the sales of the other. Similarly, we only considered those scale alliances for which the sales of the smaller of the two partners accounted for at least 5% of the other. Most of the observed alliances are intercompany buying groups. In this case, we considered the mode of growth as having a potential impact on performance for as long as the alliance was active. This resulted in two dummy variables that were coded "1" if a firm had carried out a merger or acquisition during the considered year or had participated in an active alliance during the considered year.

In our previously described sample, we observe 68 mergers or acquisitions and 75 individual alliances; as each alliance appears for as many years as it is active – two to three years on average -, the total number of company-year observations coded "1" for the alliance variable is 217. Concerning organic growth, a given firm is considered to grow internally during a given year if its sales are increasing relative to the previous year and if it is not part of an alliance nor has engaged in M&As over the past 5 years. Indeed, based on analyses of post-merger integration processes (Haspeslagh and Jemison, 1991), we have considered a

merger or acquisition as having a potential impact on performance - independently from its direct impact on size - during the five years following the event.

We have also included a number of controls in our study. First of all, we introduced the treasury bonds rate for each year and each home country of the firms in our sample. Indeed, we expect interest rates to affect investor expectations, cost of capital and therefore earning requirements. In other words, Profit Margin is likely to fluctuate in line with interest rates. Recognizing that overall economic climate, idiosyncratic firm features as well as country specific factors may also influence firm performance, we control for year, firm and geographic region in which the company is headquartered.

We then test our hypotheses using both OLS regressions and two-stage least square models. As a first step, we tested the impact of size and mode of expansion on performance by running a linear regression using Profit Margin as the dependent variables and size as well as mode of growth as independent variables, along with the other previously mentioned controls. Then, in line with recent research in strategy (Shaver 1998, Hamilton & Nickerson 2003), we considered it necessary to control for possible endogeneity of mode choice. Indeed, it seems plausible that mode choice is not random but rather determined by firm and environment characteristics, which may also influence performance. Therefore, a simple regression methodology is likely to lead to biased results. A two-stage model can account for initial firm differences and better capture the specific impact of expansion mode on firm performance.

In the two-stage least square regression we used Profit Margin as the dependant variable, the mode of growth dummies as the endogenous variables, sales and other previously mentioned controls as independent variables, and an economic index and bandwagon variable as instruments. These instruments were selected because of their assumed influence on mode choice and their lack of direct impact on performance. Concerning the bandwagon variable, institutional theories suggest that the choice of one mode of expansion over another may not only be economically driven but may also be influenced by the behavior of competitors. In this view, firm managers, rather than fully evaluating the performance impact of their own business decisions, may decide to act by imitating direct competitors (Abrahamson &

Rosenkopf 1990, 1993; Palmer, Jennings & Zhou 1993), implicitly assuming these competitors act rationally. Therefore, the likelihood of growing through M&As –respectively alliances- will increase with the number of M&As –respectively alliances- recently carried out by direct competitors (Haunschild 1993; Pangarkar 2000). Therefore, we built a bandwagon variable which accounts for the number of M&As or alliances formed during the two years preceding the observation by other firms in the sample and which originate from the same geographic region.

Our other instrument is an index of economic freedom (developed by the Fraser Institute), which we use as a proxy for government policy; Hamilton & Nickerson (2003) have argued that government policy is often a relevant instrument variable to use in models that account for endogeneity. In studies of international expansion, the regulatory context has been widely examined as a determinant of market entry mode choice (Simmonds 1990, Singh & Montgomery 1987, Hennart & Reddy 1997). Similar arguments could easily be extended to other types of expansion. For instance, horizontal M&A and alliance formation might be limited by stringent anti-trust laws while internal growth is, in some counties, hindered by regulations passed to protect small retailers. In France, for example, the Royer (1973) and Raffarin laws (1996) strictly control for new store openings or expansion.

3. RESULTS

As expected (H1), size has a direct impact on performance (model 1). This confirms the widely held view according to which size is a major driver of performance in the retail industry. If we do not account for endogeneity, mergers and acquisitions appear to reduce the positive impact of size on overall performance, as anticipated in hypothesis H2 (model 2). However, contrary to our expectations (H3), alliances are negatively associated with performance (model 2), though this result is not quite within the usually accepted statistical significance levels (0.1).

When we account for endogeneity, our results reveal that neither M&As nor alliances have a significant impact on performance (model 5). In other words, when accounting for endogeneity, the previously observed results on the impact of M&As and alliances on performance do not hold. This confirms that it is relevant to use a two-stage model in our

research. While we cannot definitely conclude on the impact of M&As and alliances on performance because of the lack of statistical significance of our results, it is interesting to note that M&As still have a negative coefficient while the coefficient for alliances becomes positive.

In addition, our two-stage model provides interesting results concerning the determinants of mode choice (models 3 & 4). First, as expected, the economic freedom and bandwagon variables have a significant impact on mode choice. More precisely, M&A and alliance formation is strongly influenced by comparable moves carried out by competitors. However, only alliance choice seems to be impacted by regulatory contexts. Sales and year significantly influence the choice of carrying out both M&As and alliances. This further confirms the need to account for endogeneity, because sales thus appear as a strong driver of both mode choice and performance. In addition, the choice to form alliances is significantly influenced by interest rate, region of origin and firm.

Our results also show that several of the control variables we included in the models have a significant impact on performance.

4. DISCUSSION, LIMITATIONS, AND CONCLUSIONS

One of the main contributions of our study is that it demonstrates the need to account for endogeneity when evaluating the impact of expansion mode on performance. We thus extend prior results put forth by Shaver (1998) on the specific issue of new market entry strategies to a broader context. Our results confirm that firm size is indeed a significant driver of overall performance in the retail industry, but is also a significant factor influencing the mode a given firm chooses in order to achieve expansion. Failing to account for endogeneity would lead to conclude that mergers and acquisitions reduce overall size benefits. However, once we account for those factors that lead firms to opt for M&As over other modes, the negative impact of M&As on performance ceases to be significant. This suggests that at least some of the negative effect of M&As on performance is the product of other pre-existing firm and environment characteristics. In other words, firms choosing to engage in M&As underperform those that choose to grow organically, but that choice in itself is not a strong determinant of performance. This result, which goes against our expectations, suggests that the economies of

scale-related disadvantages of M&As are somewhat offset by benefits that we tended to underestimate in our argument: post-merger learning and benchmarking may result in greater benefits than expected.

Concerning alliances, our results also provide some interesting insights. Again, failing to account for endogeneity would erroneously lead to the conclusion that engaging in alliances deteriorates performance. However, once endogeneity is accounted for, alliances seem, on the contrary, to influence performance positively though not in a statistically significant way. This result, if it were confirmed in future research, would support our argument on the effect of alliances and would suggest that forming alliances may indeed enhance performance because of the benefits associated with the "virtual" size of the firm achieved through its partners. Lack of significance in this result might, however, be due to higher than expected costs of collaborating which partly compensate for the benefits achieved through joint action. The results achieved in the two-stage model show that alliances are primarily formed by firms that underperform the industry. This suggests that alliance formation is a competitive reaction from weaker companies, which is consistent with prior research results (Oxley & Sampson 2004).

Both alliance formation and M&A activity seem to be widely influenced by the moves of competitors. This result confirms that imitation is a common behavior when firms are deciding their mode of expansion (Haunschild 1993; Pangarkar 2000). The regulatory context, at least as it is captured by the Fraser Economic Freedom index, appears to have no significant impact on M&As but significantly influences the formation of alliances. More precisely, firms seem more likely to engage in alliances when the government implements policies that strongly constrain firm behavior. One possible explanation is that firms turn to alliances when stringent controls exist on both organic growth and M&As.

One of the limitations of our work, which we hope to be able to overcome in the future, is that some of the influences we are trying to analyze, occur at the country level rather than at a global level, while the information we are using is accounting data, consolidated internationally. A vast majority of a retailing firm's purchases occur in those countries where the sales take place; therefore, market power will be exercised primarily on a country-bycountry basis. Similarly, most tangible (stores, warehouses, equipment, etc.) and significant intangible (brand image, in particular) investments are specific to each country and thus economies of scale are also likely to accrue on a country-by-country basis (Dupuis and Prime, 1996). Those effects that can be captured at the overall firm level are likely to be weakened. This issue may account for some of the insignificant results that we report.

Finally, some problems may be associated with the differences in the accounting norms of the different countries of origin of the firms in our sample. The database we used adjusts accounting figures to accommodate at least some of these international differences. However, some issues remain unresolved, in particular the likely co-existence in our sample of two methods to valuate post merger firms: in some counties (US and UK) both purchase and pooling accounting procedures (e.g. the option of integrating the goodwill in the valuation of the post-merger corporation) were possible during the period of study.

Despite its limitations, we believe that our study makes a useful contribution. First of all, it contributes to a deeper understanding of the various modes of expansion and of their impact on firm performance, in areas other than those previously studied, namely internationalization and diversification. In addition, our research aims at evaluating the ex-post performance effect of each chosen mode of growth rather than at analyzing the determinants of a firm's choice in favor of one or the other mode of growth. More importantly it contributes to the analysis of the specific impact of expansion mode on performance by analyzing the endogeneity of mode choice and therefore isolating the specific impact of each mode from those factors that influence mode choice and also have a direct impact on performance. Finally, this study aims at contributing to an area of research which has often been emphasized as interesting and important – i.e. empirically investigating the advantages and disadvantages of alliances vs. mergers and acquisitions vs. internal developments - but which has rarely been addressed except in a few specific and isolated studies (Balakrishnan and Koza, 1993).



Model	1	2	3	4	5
Dependant variable	Profit Margin	Profit Margin	Alliance	M&A	Profit Margin
Method	OLS	OLS	2-stage LS, 1 st stage	2-stage LS, 1 st stage	2-stage LS, 2 nd stage
Constant	83.22*	16.45	-66.75***	24.83*	317.5
Year	-0.04*	-0.01	0.03***	-0.01*	-0.16
Company	-0.02***	-0.02**	-2.5×10^{-2} *	6.3×10^{-4}	-0.01
North Am.	-0.06	0.66	-0.19**	-0.11+	1.3*
Europe ex UK	-1.33***	-0.57	0.18*	-0.03	-1.75
Japan	-1.27**	-1.19*	-0.10	-0.05	-1.22*
UK	2.38***	2.99***	0.01	-0.10	2.83***
Interest rate	0.10***	0.15***	0.01**	2.4 x10 ⁻⁴	0.06
Sales	1.93x10 ⁻⁸ ***	2.15 x10 ⁻⁸ **	2.14 x10 ⁻⁹ *	5.59 x10 ⁻⁹ ***	$2.25 \text{ x} 10^{-8_+}$
M&A		-0.96**			-2.61
Alliance		-0.55+			3.46
Bandwagon effect			0.01*	0.02***	
Fraser index			-0.09*	0.04	
N	680	394	394	394	394
R2	0.27	0.33	0.41	0.15	0.05
Adjusted R2	0.26	0.31	0.40	0.13	0.02
Model signif	***	***	***	***	***

Table 1: Statistical results

 $p \le 0.15$ * p ≤ 0.1 ** p ≤ 0.01 *** p ≤ 0.001

Table 2: Variation Inflation factors

Variable	VIF		1/VIF		
	-+				
uscanad		4.13	0.242005		
eurssuk	1	3.37	0.297050		
uk	1	2.60	0.384043		
japon	1	2.32	0.431462		
tx_int		1.81	0.553866		
alliance	1	1.68	0.596256		
year	1	1.62	0.616684		
salesnp1	1	1.25	0.799839		
acqu5pc	1	1.13	0.883982		
cycode	1	1.13	0.885546		
	-+				



Mean VIF | 2.10

Table 3: Correlations

year us					_	esnp1	
+							
year	1.0000						
uscanad	-0.0436	1.0000					
eurssuk	-0.0621	-0.4482	1.0000				
japon	0.2139	-0.2548	-0.2235	1.0000			
uk	-0.0721	-0.3395	-0.2384	-0.1693	1.0000		
tx_int	-0.3932	-0.1887	0.0629	-0.3742	0.1669	1.0000	
salesnp1	0.2211	0.2280	-0.0421	-0.1093	-0.0658	-0.1454	1.0000
cycode	-0.0117	0.0862	-0.1785	0.0215	0.1437	-0.1178	0.1589
alliance	0.3228	-0.3723	0.4109	-0.0329	-0.0190	0.0992	0.0441
acqu5pc	0.0261	-0.0377	0.1857	-0.1300	-0.0378	0.0208	0.1936
fras_fre	0.3508	0.5523	-0.4560	-0.2425	0.0816	-0.3778	0.2600
bandnbfusal	0.4484	-0.1858	0.5754	-0.1631	-0.1214	-0.1426	0.1917
	cycode	alliance	acqu5pc	fras fre	bandnb~l		
+							
cycode	1.0000						
alliance	-0.2027	1.0000					
acqu5pc	-0.0064	0.0517	1.0000				
fras fre	0.1809	-0.2185	0.0176	1.0000			
_ bandnbfusal	-0.0848	0.4574	0.2475	0.0084	1.0000		



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