UNIVERSITY OF LEEDS

This is a repository copy of *Revisiting the firm, industry, and country effects on profitability under recessionary and expansion periods: A multilevel analysis*.

White Rose Research Online URL for this paper:
https://eprints.whiterose.ac.uk/88362/

Version: Accepted Version

eprints@whiterose.ac.uk
https://eprints.whiterose.ac.uk/

Revisiting the Firm, Industry and Country Effects on Profitability under Recessionary and Expansion Periods: A Multi-level Analysis

Vassiliki Bamiatzi, University of Leeds

Konstantinos Bozos, University of Leeds

Abstract

Despite voluminous research over the past several decades, we have yet to clearly establish the relevance of firm, industry and country effects in accounting for variations in firm profitability, particularly in adverse contexts. Based on a synthesis of the resource-based view, industrial organization economics and institutional theory, we consider the role of the 2008 global economic crisis and its impact on the firm, industry, country effects – performance relationship. Using a 3-Level random coefficient model, we examine 15,008 firms within 10 emerging and 10 developed countries, accounting for variations among countries of different economic development. We find that firm effects become stronger under adverse economic conditions; industry effects become weaker during recessions, as well as country main and interaction effects, particularly among the emerging markets.

Keywords: Firm effects, Country effects, Financial Crisis, Markets and Institutions, Emerging Countries, Hierarchical Linear Modelling

Revisiting the Firm, Industry and Country Effects on Profitability under Recessionary and Expansion Periods: A Multi-level Analysis

INTRODUCTION

One of the most celebrated debates in strategic management research has been the relative importance of firm versus industry and country effects on firm profitability. The debate sprung in mid 1980s among the scholars of Industrial Organization (IO) economics and those of the Resource Based View (RBV). The IO scholars, based on the structure-conduct-performance paradigm (Bain, 1951), argued that industry structure is the key to firm performance (Porter, 1980). Hence, any difference in profitability among firms in the same industry is a matter of the firms' positioning against their counterparts within (Porter, 1980, Schmalensee, 1985). RBV scholars, on the other hand, argued that performance depends on firms' individual resources and capabilities, which contribute to the heterogeneity among firms in the same industry (Barney, 1991, Rumelt, 1991).

A majority of the relevant studies since the early 1990s clearly established the predominance of firm-level effects over all others (e.g. Hawawini *et al.*, 2003, McGahan & Porter, 2002, Short *et al.*, 2007). In most cases, industry effects followed, along with year effects (please see table 1 for more details). In the last decade, another subset of the literature has concentrated on the role of the country and its impact on firm profitability (Makino *et al.*, 2004, McGahan & Victer, 2010). These studies clearly showed that country-specific factors, such as the size of the country, the institutional framework, legal, government and political differences, and the utilization of the production factors and technology, can seriously affect firm strategy and consequently firm profitability (Makino *et al.*, 2004, Tong *et al.*, 2008).

Nonetheless, several decades later, and despite the voluminous research in this area, we have yet to clearly establish the relevance of firm, industry, and country in accounting for variations in firm performance during different economic conditions. There is in fact no empirical work within the strategic management literature to provide reasonable expectations about the effect of a global recession on the impact of the firm, industry and country effects on firm performance. In the present study, we bridge this gap in the literature by sharing the results of a comprehensive investigation that examines the relationship between firm, industry, country effects and firm profitability immediately before and after the global 2008 financial crisis. Acknowledging the unprecedented impact of the 2008 recession on the global economy, it is of great importance to investigate these underlying relationships in line to the new economic conditions. After all, "Economic shocks are valuable contexts for research, serving as natural experiments for testing the boundary conditions of various associations"

hence "[u]nderstanding the micro-economic impact of these shocks, especially across different institutional environments, will improve our understanding of the effects of macro-economic change, and of how firms react to such change" (Chakrabarti, *et al.,* 2007: 118).

Recessions and their impact on firm performance have been the focal point of discussion in several scholarly papers in the past. Some of their key features such as the prolonged drop in GDP and consumer demand, shortage of resources, unemployment, wage cuts, reduced efficiency and moral hazard problems have been particularly and directly linked to poor firm performance (Greenwald & Stiglitz, 1988, Pearce II & Michael, 2006, Richardson *et al.*, 1998). However, nowadays plethora of evidence suggest that the 2008 crisis has had considerable direct and indirect influences not only on firm performance but also on the formal institutions of several countries, even creating certain path dependencies for further institutional changes (Schwarzer, 2012). Using neo-institutional economics as our main theoretical pillar, we hence posit that a global economic shock, such as the 2008 recession, can bring about seismic effects to the institutional environment and markedly change both the formal and informal 'rules of the game' (Butter, 2012, Chakrabarti *et al.*, 2007, Schwarzer, 2012), and consequently the role of the firm, industry and country effects on performance.

Overall, the present study advances our knowledge in four distinct ways. First, the examination of the firm, industry and country effects during a period of economic munificence (2005-2007) and during a remarkable period of global economic recession (2008-2011), offers new insights on the power of economic cycles in shifting long established paradigms. Drawing from three well-established theoretical pillars in strategic management literature, namely the resource-based view, the industrial organisation economics and the institutional theory, we develop and test three hypotheses on how the impact of the firm, industry and country effects on firm profitability is altered during these two contrasting periods. Secondly, in addition to examining main effects of firm, industry and country, we also investigate country-industry interaction effects, and further enhance our understanding of the role of the country and the industries operating within.

Third, we are able to carry out this investigation in a comprehensive research framework that incorporates ten leading developed economies and ten emerging markets, while accounting for industry variations. Acknowledging that in emerging economies, characterized by "insufficient market and institutional development" (Chakrabarti *et al.,* 2007: 103), the firm, industry and country effects relationship to profitability may display deviations associated to the lower institutional context, our inclusive study sample offers unique insights for the overall impact of this global phenomenon. Such a design allows for higher generalizability and validity of the study findings.

Finally, in assessing the variance accounting for each effect (firm, industry, country and country-industry interaction) we employ a novel technique -- the multi-level random coefficient modelling. The technique has gained recognition due to its specific advantages over more traditional

approaches (ANOVA or VCA). In addition to providing "estimation of multilevel influences without direct measurement of variables associated with each level," the random coefficient modelling allows for interdependencies among the variables in each subsequent level (firms within industries) without affecting the precision of the main effect estimates (Short *et al.*, 2007: 11).

The remainder of this article is organized as follows. First, the theoretical background and hypotheses development is explored. Next, the database and methodology are described, followed by the main empirical results and a series of robustness tests in several sub-populations of the sample (year, stage of development, per-country analysis). We then offer a discussion of key results and contributions to theory. Concluding remarks, discussion of special cases, managerial and theoretical implications for future development are provided in the final section.

------------------- Insert Table 1 here ------------------

THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

Economic rents generation has always been at the forefront of strategic management research. How firms achieve competitive advantage and thus superior performance is an ongoing question that even after decades of research has yet to be answered. Different perspectives provide their own points of view and justifications, some converging to a common rationalization, whereas others diverging miles apart, particularly when the role of an adverse context (such as a recessionary period) is blended into the discourse.

The Resource Based View and Firm Performance

From a resource-based view, the consensus has always been that a firm's ability to achieve competitive advantage and thus persistent above normal rents is dependable upon two pillars:

(a) The firm's ability to accumulate idiosyncratic, valuable and difficult-to-copy resources, providing the firm with a distinctive advantage against the general market competition (Barney, 1991, Conner, 1991, Wernerfelt, 1984)

(b) The firm's "resource conversion activities", which allow the blending of the idiosyncratic, valuable and difficult-to-copy resources into unique firm-specific capabilities and competencies (Rumelt, 1974: 561).

From one point of view, firm heterogeneity relates to the managerial decisions, during the process of evaluating the resources that are likely to have the necessary idiosyncratic, valuable and difficult-to-copy properties. These decisions are typically based on rational managerial choices, prompted by

economic rationality, efficiency and effectiveness drivers, as well as by external influences (Oliver, 1997). Yet, since competitive advantages can only be retained for as long as the uniqueness of these resources is sustained in the market, the managerial ability in identifying and obtaining promptly the next bundle of unique resources has been key to sustainable rents generation. The ability to early identify unique resources allows firms to achieve first-mover advantages and enjoy, as a result, higher demand and profits.

However, since first mover advantages tend to have an expiry propensity, long-term firm heterogeneity and sustainable rents have further been attributed to a firm's ability to uniquely blend the acquired resources into firm-specific capabilities. As Conner (1991: 136) noted the greater the resource's specificity to a firm, the greater is its potential for rents generation. The firm-specific capabilities have been associated to the treatment of the intangible or invisible assets of a firm, in the development of a firm's "core competencies", which involve the "collective learning in the organization, especially how to coordinate diverse production skills and integrate multiple streams of technology" (Prahalad & Hamel, 1990: 82). Associated with historical conditions, organizational culture and norms, a firm's core competencies generate a casual ambiguity and social complexity within the organization, too difficult to be duplicated in a different setting and, as such, be exploited by the competition (Wright *et al.*, 1994).

Whilst the resource-based view has been instrumental in deciphering the firm heterogeneity conundrum, it has largely overlooked the formal and informal institutional context and its influences on strategic choice (Oliver, 1997, Peng *et al.*, 2008). Within the premise of the resource-based view the institutional environment has always been in the "background", implicitly assumed to be relatively stable, unchanged and irrelevant to firm heterogeneity (Peng *et al.*, 2008: 920). If the institutional environment can be safely assumed to be constant, and thus 'taken for granted', then mainstream theories, which ignore the relationship of the organization with it's environment, can be applied without issues. Indeed as McMillan (2007) points out, under smooth market conditions in developed economies, the role of the institutions is almost invisible. However, the same cannot be argued for poorly performing institutions, where adjustments to mainstream management theories are often deemed necessary to account for the "context" of the organization (Peng *et al.,* 2008). Since the resource-based view cannot in itself predict firm behavior in shifting institutional paradigms, we turn to the domain of institutional economics, which offers a complementary viewpoint.

Neo-Institutionalism and Firm Performance

Institutional theory concentrates on how firms operate within a certain social system. Every social system is built on a set of specific assumptions, rules and norms, binding its members to certain socially accepted and expected actions. Hence, institutions comprise all the formal (constitutions, legislation, treaties, court rulings, standards) and informal (shared norms, trust, customs and traditions,

codes of conduct and social conventions) 'rules of the game', which structure economic, political and social interactions within a system (North, 1990). By reducing transaction and information costs, institutions aim at mitigating uncertainty, reducing information asymmetry, adverse selection and moral hazard problems, whilst developing structures and conditions, which are encouraging for economic interactions (Hoskisson *et al.*, 2000). In the meantime, and along with the regular constraints of economics (North, 1991), institutions by and large shape the strategic choices and decision-making processes of organizations. Hence, an institution-based view of strategy posits that strategic choices result from a three-way interaction of firm-specific resources, industry conditions and the formal and informal constraints of the institutional environment (Peng, 2003, Peng *et al.*, 2008).

Obviously, firm performance might be rather constrained by these rules, as well as the technological, informational and income limits of the context (Oliver, 1997). Yet, firms that conform to the social norms and the "acceptable firm conduct" can easily gain the necessary legitimacy, and thus the resources and capabilities required for their survival and sustainable development. Homogeneity (*isomorphism*) is the key for sustainable growth and performance. In this respect, firm behavior is not dependent upon rational and economically justifiable managerial decisions, but upon compliance, habitual and socially defined choices (Scott, 1987). The more acceptable a firm presents within its environment, the more successful it will be, by gaining the necessary support and legitimacy from its peers.

The Impact of the 2008-2010 Crisis on the Institutional Environment

It is clear that the rise of new institutionalism and the development of the institution-based view of strategy place particular focus on institutional transitions, principally within emerging economies, and especially appreciate the importance of the changing 'rules of the game'. And while it could be argued that the institutional environments, even in developed countries, are constantly in transition (i.e. the post 9/11 or the post-SOX environment in the US, the post 2002 monetary union in the EU, etc.) emerging markets are generally seen as the exclusive domain of "more fundamental and comprehensive" institutional shifts, which may affect firms (Peng, 2003: 275).

However, the above may not be true in the case of the 2008 global financial crisis, which caused a systemic contagion, affecting most countries globally (US, Europe and the emerging economies of the East), while it left firms, industries and countries vulnerable to a host of adverse events and risks. In general, financial crises have been argued to impede the efficient channeling of funds to those agents with profitable investment opportunities (Mishkin, 1997). As Greenwald and Stiglitz (1988) and Bemanke and Gertler (1989) have emphasized, financial crises, coupled with sharp stock market declines, increase adverse selection and moral hazard problems, as they damage the market values of the firms. In the absence of safe collaterals, lenders become particularly unwilling to provide funds. In addition, the heightened risks of a prolonged recession, political instability, market crash and (one or

more) major corporate failures make it impossible for the providers of capital to tackle the adverse selection problem, thus they opt for cutting down on financing altogether.

During the crisis of 2008-2010, as Butter (2012: 127) points out, the general environment of mutual trust (as in the US, prior to the housing crisis and the EU prior to the sovereign debt crisis) quickly transformed to one of mutual distrust, leading to severe credit deficits and illiquidity. The result was a sharp increase in transaction costs with a contemporaneous decline in firm resources (Latham & Braun, 2008, Pearce II & Michael, 1997). Such shortage of resources quickly lead to declines in productivity and competitiveness, job and wage cuts, reduced efficiency, lower profit margins and in several cases default (Richardson *et al.*, 1998). The above are all evidence that a global crisis, such as the 2008-2010 financial recession can have severe effects on multiple informal assumptions of the institutional environment.

In addition to the above, the 2008 crisis has had considerable direct and indirect influences on the formal institutions of several countries. For example, the US responded to the crisis initially with the 'Operation Twist' (purchase of short-term and the sale of long-term bonds), followed by a series of rather unconventional Quantitative Easing programs. Similar reactions were realized by the UK and Japan. In the EU the pressure of sovereign debt crisis brought about implicit as well as explicit institutional changes during the period 2009 to 2011, mainly in the form of crisis management and ad hoc policy-making. Examples were: the strengthening of the role of the European Council and the permanent President, the transfer of more (centralized) power to the European Parliament and the European Central Bank, the toughening of the sanctions for Member States and the newly institutionalized market mechanisms such as the European Financial Stability Fund (EFSF). As Schwarzer (2012) points out, such crisis management decisions were not only examples of incremental institutional evolution, but also created path dependencies for further institutional changes. In any case, such interventions can be argued to considerably alter the 'rules of the game' and were hence received by criticism from both within and outside these markets.

It becomes therefore clear that even in developed countries, a global economic shock, such as the 2008 recession, can bring about seismic effects to the institutional environment and markedly change both the formal and informal rules of the game for market participants.

Reconciling the Resource-Based View with Institutional Theory

Under conditions of shifting institutional arrangements, there are strong economic and normative motives for firms to review their strategic choices, restructure their assets and re-align their resources. Oliver (1997) suggests that although social conformity is necessary for legitimacy and social approval, it can be negatively detrimental to the performance of firms, since it can lead to rigidness, impassiveness, resistance to change, and cognitive sunk costs. However, she posits "firms will be

willing to defy tradition when declining performance, economic crises or increasing outdated processes or practices make the need for change more obvious or urgent" (Oliver, 1997: 703). One could also argue that in turbulent economic periods, where the 'rules of the game' are changing, strategic factor markets are also more likely to be imperfect; the shifting institutional environment and the increased uncertainty will generate differing expectations about the true value of strategic factors (Barney, 1986). Under these conditions, resources may become unevenly distributed across competitors, thus leading to differing rents potential and heterogeneity. As firms can more easily obtain unique strategic assets to maintain their heterogeneity among the markets, firm-specific effects would count even more for performance variations.

A notable example can be drawn from the market for corporate acquisitions: Nicholson and Salaber (2014) observe that while global M&A activity declined during the crisis, as most firms were compelled to refocus their resources instead of diverging away from their main business, many M&A deals still took place. They support that as resources become scarce, crisis-driven M&A's are a way for firms to reconfigure their resources and capabilities and adjust to the new business environment. As a matter of fact, transaction economics also predict that this new environment should be particularly encouraging for such deals, since the time spent on negotiations is shorter and the preceding share price corrections moderate overpayment by the acquirer, thus reducing transaction costs. Such strategies should account for higher heterogeneity across firms in times of economic adversity.

Little empirical insights have been provided so far to the above. Even within the firm versus industry effects debate, many studies incorporated 'year effects,' to control for the influence of potential systematic shifts in the economy; yet again, none of these studies made an explicit distinction between economic expansions and recessions. Hence, there is no empirical work within the strategic management literature to provide reasonable expectations about the effect of the 2008 recession on the impact of firm effects on firm performance. Taking the two theoretical approaches together (the resource based view and the institutional theory), we therefore propose that:

Hypothesis 1: Firm effects will be stronger in recessionary economic periods compared to expansion

The Industry Based View and Firm Performance

In the opposite stance of the resource-based view rests the industrial organization economics or else called the 'industry-based view' of the firm. Resonating in Chamberlin's work as outlined in the *Theory of Monopolistic Competition* (1948), and validated through the structure-conduct-performance paradigm as introduced by Bain in the 1950s (Bain, 1951, 1954), the industry based view of the firm

emphasized on the importance of the market structure in shaping firm profitability. In fact, a linear relationship was early proposed between market structure and firm behavior (firm conduct), with a direct effect on overall firm performance.

According to the industry-based view of the firm, firms are seen as integral parts of industries; industries with "distinctly different market structures, (and) with market conduct and performance tending to differ significantly with differences in structure" (Bain, 1951: 29). The market/industry structure is obviously exogenous derived, influenced by the competitive forces within, such as the number and size of competitors (market concentration), the competitive rivalry, the degree of differentiation of the products within the market, the conditions of entry and exit, market information accessibility and of course set-up costs of the already established firms within (Bain, 1950, 1951, 1954). Hence, any difference in profitability among firms in the same industry is a matter of the firms' positioning against their counterparts within (Porter, 1980, Schmalensee, 1985).

Major emphasis has been naturally placed on examining the association between industry structure and performance. Industry structural elements, such as market concentration, barriers to entry, and size of the firms within, have received particular attention in the literature, as well as non-structural elements like the industry growth rate. In line to conventional price theory, high market concentration and high barriers to entry (economies of scale and scope, bargaining power, alliances of advertising and R&D spending, etc.) have been positively associated to market returns (Bain, 1951, 1954, Mann, 1966). By deterring new entrants, a market is left with a few dominant firms (oligopoly) able to enforce the prices that will allow them maximum profitability for a given demand.

Firm size has also been positively associated with profitability (Gale, 1972, Shepherd, 1972). Large firms, being more capable in raising barriers sustaining the current market structure quo (Hall & Weiss, 1967, Mann, 1966), tend to enjoy higher market shares, which for a given market demand can only account for higher economic rents generation (Shepherd, 1972). Overall, large firms have both the power to control large parts of the industry output, but also a greater incentive to engage in practices that enable them to retain control over the market (Sutton in Armstrong & Porter, 2007, Mann, 1966).

However, only a moderate rate of growth has been positively associated to high profitability. Such an environment nurtures long term stability and a healthy competitive rivalry, which deters price wars that can hamper overall industry profitability (Gale, 1972, Shepherd, 1972). Contrarily, in declining or high growth industries, the pressures of maintaining or capturing respectively a viable market share in the short-term forces the incumbents into more aggressive tactics (i.e. price wars) with the expected negative effects on profitability.

Despite, however, the rich theoretical discourse, the empirical evidence directly linking industry-effects to firm profitability has been rather inconclusive, "revealing at best a weakly positive

association" (Conner, 1991: 124). Misspecifications in the regression models due to the plethora of explanatory variables incorporated -variables that had to be applicable in all markets- led to contradictory results that impeded generalization and theory validation (Sutton in Armstrong & Porter, 2007: 2308, Schmalensee, 1985). It was only after the attention was shifted to the analysis of variance frameworks that allowed researchers "to focus directly on the existence and importance of firm, market and market-share effects without having to deal simultaneously with specific hypotheses and measurement issues related to their determinants" (Schmalensee, 1985: 343), and hence develop a clearer picture of the relative importance of industry effects.

Indeed, this new stream of research distinctly revealed that industry effects, although not predominantly, are important in shaping firm profitability, and account for as much as 23.5 percent of the total variance in firm performance (Short *et al.*, 2009). Direct associations were further revealed between elements of market structure (i.e. industry maturity, entry barriers and competitive power) and performance (Powell, 1996), as well as between market structure and core strategic choices, such as R&D and advertising strategies (Mauri & Michaels, 1998)[1]. Furthermore, the importance of industry-effects was particularly heightened when smaller firms were included in the analysis; in these cases, industry effects were not only much higher (accounting for up to 54.2 percent of the total variance) but overpowered even the firm-effects (Chang & Singh, 2000), corroborating the importance of firm size in the relationship.

Reconciling the Industry-Based View with Institutional Theory

Similarly to the resource-based view, the industry-based view has also received criticism for taking institutions for granted. In fact, and despite Bain noting early on the linkages of the view to the "institutional studies of markets" (Bain, 1951: 28), there has been limited attention to the role of the environment and how it may affect the industry structure – performance relationship.

To this end, a noteworthy exception is provided by the literature on business cycles and their impact on industry and firm performance. Since the early 1980s, studies have raised our awareness on the changes observed during the industry life cycles, and how firms can batter their effects. During growth, an industry is characterized by rapid structural changes, a constant increase of the competitive field with new entrants, and severe demand fluctuations. To compete successfully within, firms have to distinguish themselves and rise above the competition, typically through strategies of new product development, product design and marketing (Miles *et al.*, 1993). High firm heterogeneity and high product variation is hence to be expected at this stage. Therefore, the importance of firm-effects on firm performance is inevitably stronger at the expense of industry-effects (Karniouchina *et al.*, 2013).

---

[1] Mauri & Michaels, 1998 revealed that market structure had a direct impact on core strategic choices, such as R&D and advertising strategies, accounting for 55.4 percent and 68.2 percent respectively of the sample variance in either strategy.

Nevertheless, as the industry evolves towards maturity, the focus naturally starts shifting towards more 'routinized practices' that can facilitate efficiency levels increases throughout the entire supply chain of the firm (production, distribution, marketing etc.) (Garcia-Sanchez *et al.*, 2013). After all, in this stage, the competitive field is settled; the ineffective players are discarded, change is reduced, and industry output gets stabilized. Due to this stability, performance depends on production efficiency and market share, normally achieved through economies of scale and scope, leading occasionally even to price wars among the incumbents (Garcia-Sanchez *et al.*, 2013, Karniouchina *et al.*, 2013). Naturally, these forces are further intensified in the decline stage, as the demand is constantly shrinking along with the market share for the few survivors within.

It is therefore clear that moving from growth to maturity and decline, both industry variety and firm-heterogeneity are reduced significantly (Miles *et al.*, 1993). Indeed, Karniouchina *et al.*, (2013) clearly showed that as we move from growth to decline, industry effects explain more variance in firm performance, picking up the ground lost by the firm-effects reduction. Yet, and although the industry life cycle literature provides valuable insights on how firm and industry effects behave during the different cycles, we cannot generalize these findings to economic cycles, simply because they are not synonymous, neither are their effects on firm or industry performance analogous. In fact, the differences between industrial and economic cycles are multifaceted:

First, the industrial cycles are 'endogenous uncertainties', cyclical by nature, and to some extend predictable (Garcia-Sanchez *et al.*, 2013). Yet, economic recessions, being 'exogenous uncertainties', are sudden and more violent in nature, "whose periodicity and amplitude may not be predictable, controllable, uniform, or unique" (Mascarenhas & Aaker, 1989: 199). In this case, it comes down to how well prepared a firm is to withstand the effects of such unpredictable events. It is therefore not surprising that firm size has been positively related to overall performance in declining environments (Miller & Toulouse, 1986, Mintzberg, 2003). Larger firms can better withstand external shocks and shield themselves against prolonged declines in sales or price wars due to their strategic advantages (economies of scale, access to capital, broader investment options, increased bargaining power etc.).

Second, and although some of the characteristics of a market in recession resemble a declining industrial environment, i.e. reduced resources, limited capital availability, stale demand, lower profit margins and so on, these are – as noted above – exogenously imposed and do not reflect endogenous problems within the industries. A decline of the industrial cycle typically suggests the death of an industry, instigated by such factors as technological obsolescence, sociological or demographical changes, or even severe shifts in tastes and fashion (Harrigan, 1980a). However in a recession, the above postulation may not be valid. The declining demand is simply a symptom of temporary contraction, and thus unrelated to the industry structure. Therefore, industry-effects are not to be

blamed for the performance of the firms within, but rather the strategic choices the latter make to overcome this temporary contraction.

Prescriptions provided by scholars in response to these two different domains -declining business cycles versus recessionary periods- are not uniform. Pundits argue that different strategic choices may be required for a firm to survive and grow during recessions than in declining industries. Whereas divestment and retrenchment, a move to a relevant industry in a different life cycle or even exit are among the strategies proposed to offset declining industries (Chakrabarti *et al.*, 2007, Harrigan, 1980b), the most successful strategies for countering the recessionary periods are the aggressive ones. These include innovation, continuous investment on new product development and focus on quality (DeDee & Vorhies, 1998, Geroski & Gregg, 1997). In addition, and since recessions tend to affect most industries, diversification into others sectors is not guaranteed to overcome the decline (Chakrabarti *et al.*, 2007).

Finally, whereas recessions might have a more prolonged impact on the economy and influence many industries simultaneously, not all industries will be in decline. In fact, during the 2008 economic downturn, some industries remained almost impervious to the negative jolts of the economy (i.e. health care, pharmaceuticals, consumer staples); others have steadily benefited, although in a lesser extent (i.e. discount retailers like Wal-Mart), whereas - even more interestingly - some others emerged and grew mainly due to the economic situation (i.e. pawnbrokers) (Jiang *et al.*, 2009).

In a nutshell, we argue that it is not appropriate to use the findings from the declining industry lifecycle literature as a proxy to an economic downturn; not only their effects on performance differ significantly, they may also be unrepresentative to the entire economy. In fact, contrary to the lifecycle literature, we expect industry-effects to be weakened during recessionary periods. We recognize that strong economic shocks alter formal and informal institutions, and disrupt the status quo in industries, bringing about anew structural dynamics, affecting both the competitive forces and the demand within. Such disruptive environmental conditions compel individual industry participants to deviate from uniform strategic responses, and employ diverging strategic choices, weakening the impact of industry effects. Hence we expect and propose that:

Hypothesis 2: Industry effects will be weaker in recessionary economic periods compared to expansion ones.

Country Effects and Firm Performance

Despite the general contention that country effects should diminish, due to globalization and harmonization of tastes, technologies, and institutions (Levitt, 1983, Yip, 1992), recent studies in international business, international economics and finance increasingly provide evidence against this notion. In fact, studies demonstrated that despite the globalization phenomenon, integration among

markets is not fully achieved due to exchange rate risks and tariffs, cultural barriers, and personal biases of the home country investors (Hawawini *et al.*, 2004). Indeed, country-specific factors, such as the size of the country, the institutional framework, legal, government and political differences, and the utilization of the production factors and technology, can seriously affect firm strategy and consequently firm profitability (Makino *et al.*, 2004, Tong *et al.*, 2008).

Country differences become even more magnified when contrasting countries at different stages of economic development, such as emerging markets versus advanced economies (Peng, 2008). Indeed, emerging markets could not be more divergent from their advanced counterparts. Whereas, advanced economies have largely transformed from manufacturing into service-based economies, the emerging markets are only now industrializing. Rapid privatization, market liberalization, and modernization of the economic infrastructure are just some of the underlying changes transforming these economies creating a plethora of opportunities for investors in developed countries. Emerging markets possess unique characteristics facilitating their rapid growth and modernization. Low-cost but highly skilled labor, unique natural resources and invaluable reserves of raw materials[2], low-cost capital and government support via initiatives promoting each country's industrial revolution, are only some of the factors attracting foreign direct investment. Coupled with the rise of the middle class and the consequent stepped-up demand, some of these markets have already been placed among the most dynamic economies around the globe (Cavusgil & Kardes, 2013, Cavusgil *et al.*, 2012).

Nonetheless, these rapidly transforming economies also pose a wide range of risks and challenges for foreign companies. Specifically, emerging markets are characterized by market imperfections, such as asymmetric dissemination of production factors across all actors (Ghemawat & Khanna, 1998); limited access to external finance or lack of financial intermediaries (Khanna & Palepu, 2000); and insufficient market supporting mechanisms and other policy distortions (e.g. high levels of corruption) (Khanna & Rivkin, 2001). These imperfections, combined with the existence of powerful family conglomerates[3] that dominate the trade within[4], make these institutional environments rather unique (Tong *et al.*, 2008: 391).

Without a doubt, the differences between emerging and developed markets are so profound that can only result in differing growth opportunities for the firms operating within (Peng, 2003, Tong *et al.*, 2008). Indeed, Diaz-Hermelo and Vassolo (2010) proposed that persistent superior economic performance is more difficult for firms in emerging markets. The highly unstable environment erodes the value of any successful strategy, preventing firms from retaining their competitive advantages for long. Indeed, they proved that "as the institutional context develops, competitive dynamics increase

---

[2] For example, 90% of the world's proven oil reserves are to be found in emerging markets (Source: BP World Statistical Review of World Energy, 2009)

[3] Some examples are: the *chaebols* in S. Korea, the *business houses* in India, the *grupos* in Latin America, the *holding companies* in Turkey.

[4] In Turkey, for example, the Koc Group accounts for about 20% of trading on the Istanbul Stock Exchange.

and firms migrate from institutional-based to resource-based strategies" (2010: 1470), suggesting an increase of the impact of firm-specific effects on firm performance on the expense of the institutional (country) effects. In addition, Chakrabarti, *et al*. (2011) showed in less developed markets, institutional constraints hinder firm growth by not allowing them to make the necessary re-configuration strategies negated by the limitations of the environment. In other words, the impact of the institutional conditions (country-effects) on firm performance will be much higher in developing than in developed markets.

The above results are indeed consistent with empirical findings on the role of the country-specific effects on firm performance. Makino, *et al*. (2004) supported that country effects are more important in less advanced countries, counting for up to 7.7 of total variance in profitability, but they diminish significantly (3.6 percent) in the developed ones. Similarly, McGahan and Victer (2010) showed that country effects explain up to 4.6 percent in countries with lower income and decrease to a mere 1.7 percent in those with the highest income (for details see Table 1). It is therefore apparent that country effects in Emerging Markets will be much stronger compared to Developed Markets, accounting for higher variance in the overall profitability of firms.

Exploring the Country Effect During Recession and Expansions

Nevertheless, and although there is no doubt that country effects are important particularly for emerging markets, it is still unclear how the economic conditions are affecting the emerging markets, and consequently how they overall impact on the country effect – performance relationship. In the empirical literature, the effect of the general economic environment has been only measured as an interaction term, the country-year effect, which has been linked to the transient effects related to specific economic factors that are captured by the year effect in each country (Hawawini, *et al.,* 2004). Yet, these effects have provided negligible –if not insignificant results-, leading to claims that year effects or country-year effects do not really matter on firm performance.

A noteworthy exception is the study by Chakrabarti, *et al.* (2007) who examined the strategy-firm performance relationship in emerging markets, and how it is influenced by an economy-wide shock. They noted that in emerging economies, characterized by "insufficient market and institutional development" (2007: 103), internal markets are often created to bypass the weaknesses of the institutional environment. In these economies, firms may choose strategies, such as diversification and business group affiliations, which capitalize on such opportunities. The benefits associated with such strategies, e.g. access into privileged assets and know-how, internal transfer of financial and information resources, etc. can surpass the costs associated with them, and overall allow firms to achieve high performance rates.

However, in periods of economic contraction, the efficiency of the above strategies and their associated benefits tend to diminish. Wide-economic shocks will affect not only external markets, by

reducing access to capital, liquidity in the market and increasing uncertainty, transaction and information costs, but they will also influence the efficacy of those internal markets. The same inefficiencies that help firms in periods of stability, now become obstacles and inhibitors of profitability. Therefore, firms will now seek to exploit more firm-idiosyncratic capabilities and resources, thus moving from institutional-based to resource-based strategies; ultimately the influence of the country-level effects on strategy formulation will tend to weaken. In other words, we posit that country-specific factors will have asymmetric effects on firm performance between expansion and recession. We specifically predict that:

Hypothesis 3: **Country effects in Emerging Markets will be weaker during recessionary economic periods compared to expansion.**

Exploring the Country-Industry Effect During Recession and Expansions

In the attempt to decipher the role of the country effects on firm performance, the country-industry interaction has also received a lot of attention. Acknowledging that specific country advantages are directly associated to capabilities, attributes and/or expertise a country shares in certain industries (e.g. IT expertise in India, automobile industry expertise in Japan etc.) (Dunning, 1993, Porter, 1980, Tong *et al.*, 2008), the country-industry interaction term has been particularly useful in clarifying this important facet of country effects. In fact, Makino, et al. (2004) suggested that industry is context-dependent and hence any "variation(s) in the performance of foreign affiliates can be explained more fruitfully by differences in industry attributes or by differences in host-country attributes" (2004: 1030). They argued that there are significant cross-country variations among similar industries due to differences in the factors of production (land, labor and capital), and the level of their utilization (theory of comparative advantage). As such, not only prices vary among the same factors, but also relative production costs differ across countries. As Porter (1990) long contended, countries not only differ in terms of their resources but also have "different capabilities to create, upgrade, and sustain the innovation and technology that enhance the competitive advantage of indigenous firms in an industry" (Makino *et al.*, 2004: 1031). In essence, heterogeneity among firms across countries can be attributed to the way firms align their resources to develop unique dynamic capabilities in their respective industries.

The empirical evidence from the inclusion of the country-industry interaction term has indeed been rather intriguing. Most studies, specifically measuring for the country-industry interaction effects, have showed that the interaction effects account for higher variance than the main country or industry effects (Goldszmidt *et al.*, 2011, McGahan & Victer, 2010, Tong *et al.*, 2008). The interaction effects also vary considerably among industries (e.g. from 11.7 percent in construction to 45 percent in

transport), whereas in some cases they have been reported to even cannibalize the firm-specific effects, shifting altogether the performance paradigm (McGahan & Victer, 2010).

The question however remains on how the country-industry effects will behave in different economic conditions, specifically during recessionary and expansion periods. Having hypothesized that both industry and country specific effects will diminish during recessionary periods, we expect that the combined country-industry effect will be further weakened during the same period.

During periods of economic stability, it is likely that certain industries within a country may be seen as instrumental or of high priority by the respective governments. Hence, the institutional context will be particularly munificent and encouraging, supportive of these country-specific industries, and thus intensifying the country-industry effect. However, in times of sudden economic shocks, such as recessions, it is natural that the level of institutional support even for these country-specific industries may be reduced in light of increased uncertainty, illiquidity and capital deficits. In addition, the general adverse conditions and the shifts in demand during a recession may constrain the industry advantages across specific countries. For example, once global demand for cars drops, the advantages of the automobile industry in Japan will be diluted. Generally, such a shift will further increase the competitive conditions within, forcing firms to adopt resource-based strategies to achieve heterogeneity, thus reducing the country-industry effect on firm performance.

Hypothesis 4: **The Country-Industry effects will be weaker during recessionary economic periods compared to expansion.**

DATA AND METHOD

Data Sample

The dataset for this study is derived from Thomson ONE Banker, which includes over 60,000 active publicly listed companies during the period under examination (2005-2011). We retrieved data for all companies listed in the main exchanges for 10 emerging and 10 developed countries[5]. The emerging countries in our sample include Brazil (BRA), China (CHN), Indonesia (IDN), India (IND), South

---

[5]   For the selection of the ten developed countries we used the Human Development Index (HDI) 2011, a statistical measure that represents the level of development of a country in both economic and social terms (http://hdr.undp.org/en/statistics/hdi/). According to the HDI, among the ten most developed countries, Ireland and Liechtenstein are also included; however due to the financial problems the former is facing and the very small size of the latter, we excluded these two cases and added instead the next two countries in line, Switzerland and Japan. For the emerging countries, our primary goal was to select those with the strongest capital markets so as to be able to draw reliable financial information (ROA). Hence we used the Dow Jones Index (DJI), which classifies the markets with respect to three criteria: a) market and regulatory structure, b) trading environment, and c) operational efficiency. 21 countries are defined by DJI as emerging in four regions (America, Asia/Pacific, Europe, Africa). We selected a sample of all regions.

Korea (KOR), Mexico (MEX), Philippines (PHL), Poland (POL), Turkey (TUR) and South Africa (ZAF). Accordingly the developed countries sample includes Australia (AUS), Canada (CAN), Switzerland (CHE) Germany (DEU), United Kingdom (GBR), Japan (JPN), Netherlands (NDL), Norway (NOR) Sweden (SWE) and the United States (USA).

The final dataset, described in Table 2, comprises data on 15,008 firms, for the period 2005-2011, resulting in 105,056 firm-year observations. The firms in our sample are from 779 SIC4 and 60 SIC2 industries, and fall under the following eight main industry sectors: SIC2 10-14: *Mining*, SIC2 15-17: *Construction*, SIC2 20-39: *Manufacturing*, SIC2 40-49: *Transportation & Public Utilities*, SIC2 50-51:*Wholesale Trade*, SIC2 52-59: *Retail Trade*, SIC2 60-67: *Finance, Insurance, Real Estate* and SIC2 70-89: *Services*.

------------------- Insert Table 2 here ------------------

Model Estimation

The multilevel framework of firm, industry and country effects is tested using hierarchical linear multilevel (HLM) modelling (Raudenbush *et al.*, 2004, Stewart *et al.*, 1998). HLM and structural variance decomposition studies have been used in a variety of strategic management studies (Bou and Satorra 2007, 2010; Short *et al.*, 2007). The technique is particularly appropriate for this study because of the hierarchical nature of the data (i.e., firms nested in industries, industries nested in countries). It provides for simultaneous partitioning of the variance-covariance components, while "explicitly accounting for the independence of errors assumptions that may be violated when using other techniques such as OLS regression" (Short *et al.*, 2009). In addition, HLM is more flexible with data since it does not require balance dataset to generate results, allowing for estimates of both random and fixed effects.

We use a three-level model to test the effects of firms (level-1) nested within the effects of industries (level-2) nested within the effects of countries (level-3) among developed and emerging markets as well as in the overall sample for three different time periods. Most past studies in the debate have measured firm performance in terms of economic attainment using principally Return-on-Asset (ROA) ratios. For comparability purposes we also employ the ROA, averaged for each examined period. Thus for the overall model, Mean-ROA for the entire period (2005-2011) is used, whereas for the expansion period we use Mean-ROA for the years 2005-2007, and for the recession we use Mean-ROA for the years 2008-2011.

The level-1 model corresponds to the performance of each firm as a function of an industry mean and random error. Thus:

$$Performance_{ijk} = \pi_{0j} + e_{ij},$$

where *Performance*$_{ijk}$ is the average ROA of firm i in industry j in country k. The coefficient π_{0j} is the level-1 (firm) intercept, and e_{ij} is a random firm effect (the deviation of firm ij's score from the industry mean). The effects are assumed to be normally distributed with a zero mean and variance σ^2. The subscripts i, j and k designate firms, industries and countries with $i = 1, 2, \ldots, n_i$ firms within industry j; $j = 1, 2, \ldots, n_j$ industries, within countries k; $k = 1, 2, \ldots, n_k$ countries.

The level-2 (industry) model corresponds to the variability among industries with the industry mean (π_{0j}) varying randomly around a grand mean. In this level, the level-1 regression coefficient (π_{0j}) is used as outcome variable related to each of the level-2 predictors. Thus:

$$\pi_{0j} = \beta_{00j} + r_{0j},$$

where β_{00j} is the grand mean, and r_{0j} is the random industry effect (the deviation of industry j's mean from the grand mean). Again, these effects are assumed to follow a normal distribution and have a zero mean and variance τ_π.

The level-3 (country) model corresponds to the variability among countries, with the country mean (γ_{000}) varying randomly around a grand mean:

$$\beta_{00j} = \gamma_{000} + u_{00k},$$

where γ_{000} is the grand mean and u_{00k} is the random country effect (the deviation of country's k's mean from the grand mean). Again, these effects are assumed to follow a normal distribution and have a zero mean and variance τ_β.

In this study, the objective of the three-level model is to partition the variability in *performance*$_{ijk}$ (ROA) into its components: among firms within industries, σ^2 (level-1), among industries, τ_π (level-2) and among countries τ_β (level-3). Thus the overall model becomes:

$$Performance_{ijk} = \gamma_{000} + r_{0j} + u_{00k} + e_{ij}$$

The calculation of the Variance Partition Coefficient (VPC) allows the estimation of the variance that can be attributed to firms within industries $[\sigma^2 / (\sigma^2 + \tau_\pi + \tau_\beta)]$, among industries $[\tau_\pi / (\sigma^2 + \tau_\pi + \tau_\beta)]$ and among countries $[\tau_\beta / (\sigma^2 + \tau_\pi + \tau_\beta)]$.

Furthermore, to test some of the study hypotheses, we need to estimate the interaction effects between Industry and Country. As this interaction is another way of nesting one factor within another, we can treat our model as a 3-level model with crossed terms. First, we create a set of indicator explanatory variables, one for each Country at level-3, with random intercepts uncorrelated and with variances constrained to be equal. Then we generate the interaction groups, by combining the industry with the country of each company in the sample, resulting in 760 different groups. Finally, we use an additional

nesting level to estimate the variance component for the interaction term Country × Industry.

ANALYSIS AND RESULTS

Preliminary Findings

According to data from the World Bank, the global GDP growth rate, which was around five percent during 2005-2007, declined to three percent in 2008 and turned negative in 2009 (Figure 1a). The above pattern is consistent across our sample of developed and emerging economies, although naturally the latter project higher overall GDP growth rates (Figure 1b). Furthermore, during the year 2008 alone approximately $17.6 trillion in market capitalization was lost (-43 percent) in the examined developed capital markets and another $6.3 trillion (-58 percent) in the emerging ones (Figure 1c). Therefore, it becomes clear that the 2008 recession had a severe impact across the global economy, slowing down global GDP, and costing over $24 trillion in market capitalization across the biggest emerging and developed countries.

-------------------Insert Figure 1 here--------------------

The above patterns are similar when examining firm profitability. In Panel A of Table 3, we present mean Return on Assets (ROA percent) per year, for the entire sample and for each of the two subsamples of emerging and developed countries. The grand mean ROA for all years across all countries is 1.35 percent. Companies in emerging countries exhibit higher mean ROA than their developed counterparts (3.42 percent vs. 0.43 percent respectively). However, both subsamples experienced similar patterns of decline in the years following the 2008 recession. The average post-recession Mean-ROA was lower by 1.28 and 2.39 for firms in emerging and developed countries accordingly. Individual country differences in mean ROA performance are also very interesting (see Panel B – Table 3). Across all developed countries, mean ROA presented significant declines. Meanwhile, the mean ROA in emerging countries dropped significantly in 7 out the 10 examined markets (in three cases the change was insignificant). The above preliminary results confirm that the impact of the 2008 recession was certainly comparable across countries at different stage of economic development.

------------------- Insert Table 3 here--------------------

Empirical Results

Firm and Industry effects in recessionary economic periods compared to expansion ones (Hypotheses 1 and 2)

In Table 4 we present the results for the main and interaction effects from all HLM estimations. In Panel A, three different models were estimate, namely one main effects model for all years, one for the expansionary period (2005-2007) and one for the recessionary period (2008-2011). Revisiting the case of firm and industry effects on profitability, we clearly see the predominance of firm effects across all main effects models, as has been strongly supported by most past studies. Indeed, firm effects account for the majority of the ROA variance under all three models, with VPC coefficients ranging from 87.31 percent to 90.38 percent. This is an important finding. When looking at differences between the two contrasting periods, we observe that firm effects in recessionary periods are higher than those in expansionary periods, offering strong support to the first hypothesis (H1). The difference in the VPC is 3.07 percent.

With respect to the industry effects, our results give also support to *Hypothesis 2* (H2). In particular, while the industry effects account for 9.47 percent of the total variance during the period of expansion, their explanatory power is reduced considerably to 6.13 percent during the recession. The difference in the VPC is 3.35 percent. Finally, the model χ^2 is highly significant at 0.001 across all three models.

Country effects in emerging markets in recessionary economic periods compared to expansion ones (Hypothesis 3)

In Panel B, we present the results from three further models of emerging market firms only. In particular, we estimate one main effects model for all years, one for the expansionary period (2005-2007) and one for the recessionary period (2008-2011), with the aim to examine the behaviour of country effects in emerging countries across the two periods. Our evidence verifies the assertion of the past literature that country effects are typically stronger in emerging markets. Indeed, once we exclude developed markets in our analysis (Panel B vs. Panel A), the country effects rise from 3.45 percent to 4.42 percent of the total variance in ROA. More importantly however, our analysis confirms *Hypothesis 3* (H3): country effects in emerging markets dropped from 6.38 percent during expansion to 2.75 percent during the recession, showing a decline of 3.63 percent in explaining total ROA variance.

Country-industry effects in recession compared to expansion (Hypothesis 4)

In Panel C, we present the results from three further models of the entire sample. In particular, we estimate three extended 'Country x Industry' interaction effects models: one for all years, one for the expansionary period (2005-2007) and one for the recessionary period (2008-2011).

The inclusion of the country-industry interaction term yields some intriguing results. In particular, we can see that -as expected- the country-industry effects drop during recession. In fact, while in the expansionary periods country-industry effects account for 6.62 percent of the variance in ROA, in the recessionary periods they drop to 4.17 percent, fully supporting *Hypothesis 4*. The difference in the VPC is 2.45 percent and the model χ^2 is highly significant at 0.001 across all three models.

Interestingly, a closer look across the two Panels A and C provides some unexpected insights. We observe that the country - industry interaction effects overtake the main industry effects in all three models. In fact, when the interaction term is introduced in Panel C, the industry effects drop to 2.63 percent (from 7.83 percent in Panel A) in the all years model. The results are similar for expansionary and recessionary periods. Although the direction of the relationship in all the above cases remains the same, clearly supporting *Hypothesis 2*, the reduction of the main industry effects suggests that it is not the industry effects that singularly matter for firm performance, but rather the combined country-industry effect.

-------------------Insert Tables 4 --------------------

Sensitivity Analysis and Robustness of the Results

The above results clearly support that the state of the global economy influences the role of firm, industry and country effects on firm profitability. To test our hypotheses, we employed data for two distinct periods, namely the expansion (2005-2007) and the recession (2008-2011). We used a sample of 'all countries' to test *Hypotheses 1, 2 and 4*, and data from 'emerging countries' only to test *Hypothesis 3*. However, for our conclusions to be robust, we need to ascertain that the empirical results are not driven by the predominance of developed market firms in the sample (10,422 vs. 4,586 firms). After all, since the institutional environments are generally known to differ markedly between developed and emerging markets (Peng *et al.,* 2008), one might expect the influence of a recession on firm, industry and country effects to differ across developed and emerging markets.

To validate the above findings under a more stringent setting, we produce a set of further model estimations, where the initial sample is split into emerging and developed and all hypotheses are re-tested. In specific, we estimate four new main-effects models: two for developed countries -during expansion and recession- and another two for emerging countries. We present the results in Panel A of Table 5. We clearly see that the original hypotheses are confirmed as proposed. In specific, with respect to *Hypothesis 1*, firm effects are always higher in the recession compared to expansion, among both the developed and the emerging countries. In addition, with respect to *Hypothesis 2*, industry effects are lower during the recession, across both developed and emerging countries.

In panel B of Table 5, we present the results of four new country-industry interaction effects HLM models. The results for *Hypotheses 1 and 2* are robust to the inclusion of the interaction term, although the decline is less pronounced in emerging countries. With regards to *Hypothesis 4*, country-industry effects remain indeed lower during the recession, irrespective of the country stage of development. However, the decline is more pronounced among the developed countries, where country-industry effects drop by 2.05 percent, compared to 0.43 percent across emerging countries. As in the main results in Panel B of Table 4, the addition of the country-industry interaction term causes the explanatory power of the industry main effect to drop significantly, without however altering the hypothesised direction.

Evidently, the study results are robust to the breakdown of the sample into developed and emerging country firms, with firm, industry and country-industry effects being similarly influenced by the global post-2008 recession.

Further Country-Specific Analysis

While it is traditional to examine the behavior of firms by placing them into developed vs. emerging country categories, this may be seen as arbitrary in practice. Such a broad categorization may mask the significant variations within each category. Due to the unique characteristics of each country's institutional environment, one could reasonably expect that the global recession may have had idiosyncratic influences on the firm – industry effects relationship across different countries. Hence, to validate the study findings under an even more stringent setting, we further estimate a 2- level model (Firm- Industry) for each of the 20 countries separately, and for each of the two periods (expansion and recession). This analysis resulted in 40 firm-industry combinations, as shown in the Appendix (Table I).

One quick conclusion is that the original findings, with regards to the study hypotheses, are pretty robust to this kind of scrutiny. Overall, firm effects are higher during recession in most countries whereas industry effects are reduced respectively. However, largest shifts in favor of firm-level explanations are found in specific countries like Norway, Mexico, Turkey, Austria, and India. This finding confirms the value of disaggregated analysis, which validates finer differences among countries artificially categorized as either developed or emerging. Exceptions to the rule, presenting a decrease in firm effects during recession, are: Indonesia (-15.43%), Korea (-0.29%), Japan (-0.66%) and Switzerland (-1.77%). However, the model χ^2 for Indonesia and Switzerland is not significant, while the changes in Korea and Japan are rather negligible. In general, the study's two key hypotheses, H1 and H2, are confirmed even at this most stringent country level of analysis, for the 16 out of 20 countries in our sample.

-------------------Insert Table 5 here--------------------

DISCUSSION

Research Implications

The current study is driven by a central theoretical issue in strategic management: "the extent to which a firm's fate is self-determined" (Short *et al.,* 2007: 161). By reconciling institutional theory with main streams of strategic management literature, namely resource based view and industrial organization economics, we demonstrate that the context of the general economic environment is most critical in determining the role of firm, industry, and country effects on firm profitability. To this end we examine the firm, industry, and country effects in two contrasting periods, the periods immediately preceding and following the global financial crisis of 2008. The investigation reveals novel findings and intriguing results.

First, we confirm that, irrespective of the economic environment, firm profitability is predominantly influenced by firm-specific effects (McGahan & Porter, 2002, Short *et al.*, 2007). However more importantly, our empirical findings reveal that firm specific effects are particularly amplified during recessionary periods. This result gives support to Oliver's (1997) contention that firm heterogeneity should become more pronounced during economic crises, where the 'rules of the game' are changing and strategic factor markets are more likely to be imperfect (Barney, 1986). In other words, the study results confirm our initial expectations *(Hypothesis 1)* that under periods of economic distress, strategic choices and capabilities will become more important in shaping firm profitability. It is noteworthy that this argument is further confirmed under a most stringent empirical setting, and for the vast majority of individually examined developed and emerging countries. Therefore, and although institutional environments of developed and emerging markets are markedly different (Peng *et al.,* 2008), we reveal that effect of a global recession on the firm's strategic choices will be alike.

Second, our findings confirm the importance of industry-specific effects on determining firm profitability. As suggested by the proponents of industrial organization economics, the industry characteristics (i.e. structure, intensity of competition and market concentration) will – to some extent – affect the firm's strategic direction and ability to generate rents (Bain, 1951; Mann, 1966). Indeed, we reveal that the industry effects account in general for approximately 8 percent of the total of variance in firm ROA. However, we find that during the post-2008 recession, arguably a period of significant exogenous uncertainties, the impact of industry effects on firm profitability weakens (confirming *Hypothesis 2*). This supports our expectation that sudden shifts in formal and informal institutions will compel industry participants to employ differing strategic responses, deviating from *isomorphic* industry norms (Scott, 1987). Importantly, this pattern persists at both an emerging vs. developed countries contrast, and across individual country-level analyses.

With respect to country level effects, in line with past studies (Makino *et al*., 2004; McGahan and Victer, 2010), we postulate and confirm that these are more pronounced in emerging markets rather than in developed ones. This phenomenon has -among others- been attributed to the presence of internal market structures, developed to bypass the institutional inefficiencies (Peng *et al.,* 2008; Chakrabarti *et al.,* 2011). More importantly however, we examine the impact of the recession on the country effects on the emerging markets alone, and find them to drop significantly by more than 60 percent (from 6.38 to 2.75 percent of total variance in firm ROA). This finding, original in our study, suggests that sudden economic shocks affect both the external and those ever-important internal markets in emerging countries, thereby reducing country effects. Effectively, in periods of recession, emerging market firms will have to rely less on country-specific inefficiencies and structures, and more on their own resources and capabilities.

Finally, as regards the country-industry interaction effects our results both confirm and advance the extant empirical literature. On one hand, we confirm the importance of the interaction effects on firm ROA. This finding, consistent with previous work on foreign MNEs affiliates (Hawawini *et al.*, 2004, McGahan & Victer, 2010, Tong *et al.*, 2008), suggests that the way each country utilizes its resources to develop unique industrial competencies is paramount for firm performance. On the other hand, our findings inform the literature on the behaviour of this important facet of country effects in recession. We specifically reveal that the country-industry interaction effects are reduced during recession (from 6.62 to 4.17 percent), in line to our expectations (*Hypothesis 4*). This finding suggests that during recessions, the advantages associated with specific industries within countries are moderated, reducing as such the overall impact of the country-industry effects on firm performance.

In a nutshell, during the recession a firm's fate becomes indeed more self-determined, with firms reverting to their own resource-based strategies, at the expense of industry and institutional-based ones.

Country-Specific Implications

Large vs. Small Economies: Effects during Expansion and Recession
The size of the economy may contribute to the stability of firm – industry effects, leading to relatively smaller changes between the two periods. Indeed, in the per-country analysis (Table I in Appendix), we find that changes in the respective magnitude of firm-industry effects are smaller in the case of large economies such as China, Japan, U.S.A., U.K. and Canada. In contrast, we find that most noticeable shifts in the magnitude of changes in respective effects – in favour of firm-level effects – are exhibited in the case of smaller economies, such as Norway, Sweden, Mexico and Turkey. Why would the size of an economy matter? One explanation could be that in a smaller economy, shifts in demand will result in relatively higher competition within the domestic market, compelling firms to

react more urgently and in pronounced ways against adversity. In such cases, firm strategic choices may become even more important in explaining performance.

The Behaviour of Brazil, India and China

The behavior of the three BRIC countries deserves special examination (Russia was excluded from the analysis due to unreliable data). With respect to China, we find a remarkable stability in the respective roles of industry vs. firm-level variation between the expansion and recession. Although firm effects in China did become stronger as expected (H1 supported), and industry effects did become weaker accordingly (H2 supported), the overall firm-industry relationship did not change dramatically. One explanation is that a great majority of the Chinese GDP is still accounted by state-owned enterprises that are run by bureaucrats who are more responsive to centralised political directives rather than global economic forces. Another explanation is that, through massive deliberate investment prior and immediately after the global recession, China did manage to insulate itself from adverse effects in the worldwide economy. Indeed, despite Chinese GDP growth rate experiencing one of the highest declines across the emerging markets (from 12.72 to 9.65 percent between the two periods), Chinese growth remained remarkable.

Acting similarly, Brazil also did not exhibit a major shift in the distribution of firm vs. industry level effects (although both *H1* and *H2* were confirmed). Firm level variance registered only a modest gain following the recession (1.44%). Explanations could be based on the relatively stable growth during the years of the Lula presidency, the robust growth in its primary industries (oil, agriculture, mining), and/or relatively large role of the state ownership in the country's GDP.

Of the three BRIC countries, only in India firm-effects marked a significant over 5 percent increase at the expense of the industry-level effects. This result may be due, in part, to the dynamic nature of the Indian economy following the economic reforms, which begun in earnest in the early 1990s. Following these remarkable market liberalization efforts, Indian firms achieved much flexibility and freedom in responding to global economic trends. Respectable rates of economic growth followed, bringing about a rising middle class, equipped with substantial disposable income (Cavusgil *et al.*, 2013). Hence, domestic economic dynamics in India may have tempered adverse global economy trends, thus facilitating Indian firms, market performance.

Managerial Implications

The "take-home message" for practitioners is that the firm's own fate is, to a great extent, self-determined, a reality that is even more pronounced during periods of extreme economic hardship. In periods of generalised economic adversity, the role of the industry and the country are reduced and the firm's own resources and capabilities become even more important for firm performance. Under such

conditions, managers will need to make the best use of the limited resources available, in order to over-perform the market and survive, or risk facing extreme departures from the country-industry trend and experience severe underperformance.

Further Research Implications

Potency of Firm Effects on Multiple Contexts: The findings that reveal substantial impact of firm effects on performance – consistently across both expansionary periods and times of great economic turbulence – implies the prevalent and durable nature of firm strategy. We note that the lowest variance partition coefficient (VPC) for firm effects was 87 percent. Future research should explore the consistency of this effect in other contexts. One such context is the ownership type. Will the firm effect continue to be so dominant across (a) publicly owned, (b) privately owned, and (c) state owned companies? One may speculate that managers of privately owned firms may have greater discretion with respect to strategic choices and, therefore, be in a better position to combat environmental turbulence. Another context for exploring the behaviour of firm effects would be organisational culture, i.e. autocratic versus democratic leadership styles. Similarly, scholars can explore the relevance of such national cultural variables such as tolerance for ambiguity. In summary, it would be worthwhile to examine the consistency of firm effects, in comparison to industry and country effects, across diverse organizational contexts in order to strengthen the generalizability of the results.

Types of Resources Deployed: While our research offers unambiguous evidence that firm effects prevail during both expansionary and recessionary periods, we do not know exactly what types of strategic choices or managerial actions tend to promote superior performance. Expressed differently, this question refers to the versatility of firm resources. We learn that managers are able to deploy a variety of organizational capabilities and strategic assets when it comes to managing environmental turbulence. However, our knowledge of suitability of specific firm resources that are most appropriate under such circumstances is inadequate. One relevant dimension to consider is organizational slack. Slack resources are often thought to give impetus to enhance performance (Cheng & Kesner, 1997, Latham & Braun, 2008, Tan & Peng, 2003). Capabilities and assets that may lay dormant in the firm could be mobilized at times of necessity. If so, firm processes for discovering and deploying slack resources during adversity are of utmost concern. Scholars may also investigate the types of slack resources that are most productive in overcoming prolonged economic turbulence.

Alternative Performance Measures: In our study, we employed ROA as the proxy for firm performance. Future research should utilize alternative measures of firm performance, including Sales, Profitability and Growth, Tobin's Q etc.

REFERENCES

Arend R. 2008. Industry effects and firm effects: No effect is an island. Journal of Business Research 62(6): 9.

Armstrong M., Porter R. H. 2007. Handbook of industrial organization. Elsevier.

Bain J. S. 1950. Workable Competition in Oligopoly: Theoretical Considerations and some Empirical Evidence. American Economic Review 40(2): 35.

Bain J. S. 1951. Relation of Profit Rate to Industry Concentration: American Manufacturing, 1936-1940. The Quarterly Journal of Economics 65(3): 293-324.

Bain J. S. 1954. Economies of Scale, Concentration, and the Condition of Entry in twenty Manufacturing Industries American Economic Review 44(1): 15.

Barney J. B. 1991. Firm Resources and Sustained Competitive Advantage. Journal of Management 17(1): 99-120.

Bou, J. C. and A. Satorra (2010), Variation of firm profitability across EU countries: a multi-group structural equation approach, Organizational Research Methods, 13(4): 738-766.

Bou, J.C. and A. Satorra (2007), The Persistence of Abnormal Returns at Industry and Firm Levels: Evidence from Spain, Strategic Management Journal, 28(7): 707-722.

Bemanke B. S., Gertler M. 1989. Agency Costs, Collateral, and Business Fluctuations. American Economic Review 79: 14-31.

Brush T. H., Bromiley P., Hendrickx M. 1999. The relative influence of industry and corporation on business segment performance: An alternative estimate. Strategic Management Journal 20(6): 519-547.

Butter F. A. D. 2012. Managing Transaction Costs in the Era of Globalization. Edward Elgar Publishing: Chelthenham, UK.

Cavusgil S. T., Kardes I. 2013. Brazil: rapid development, internationalization, and middle class formation. InternexT-Revista Eletrônica de Negócios Internacionais da ESPM 8(1): 1-16.

Cavusgil S. T., Knight G. A., Riesenberger J. R. 2012. International business : the new realities (2nd ed., International ed. ed.). Pearson: Boston, [Mass.] ; London.

Cavusgil S. T., Knight G. A., Riesenberger J. R. 2013. A framework for international business. Pearson: Boston, Mass. ; London.

Chakrabarti A., Singh K., Mahmood I. 2007. Diversification and performance: evidence from East Asian firms. Strategic Management Journal 28(2): 101-120.

Chakrabarti A., Vidal E., Mitchell W. 2011. Business transformation in heterogeneous environments: The impact of market development and firm strength on retrenchment and growth reconfiguration. Global Strategy Journal 1(1-2): 6-26.

Chang S.-J., Singh H. 2000. Corporate and Industry Effects on Business Unit Competitive Position. Strategic Management Journal 21(7): 739-752.

Chen Y.-M. 2010. The continuing debate on firm performance: A multilevel approach to the IT sectors of Taiwan and South Korea. Journal of Business Research 63(5): 471-478.

Cheng J. L., Kesner I. F. 1997. Organizational slack and response to environmental shifts: the impact of resource allocation patterns. Journal of management 23(1): 1-18.

Conner K. R. 1991. A historical comparison of resource-based theory and five schools of thought within industrial organization economics: do we have a new theory of the firm? Journal of management 17(1): 121-154.

DeDee J. K., Vorhies D. W. 1998. Retrenchment activities of small firms during economic downturn: An empirical investigation. Journal of Small Business Management 36(3): 46-61.

Diaz-Hermelo F., Vassolo R. 2010. Institutional development and hypercompetition in emerging economies. Strategic Management Journal 31(13): 1457-1473.

Dunning J., H. 1993. Multinational enterprises and the global economy. Addison-Wesley: Reading, MA.

Gale B. T. 1972. Market Share and Rate of Return. The Review of Economics and Statistics 54(4): 412-423.

Garcia-Sanchez J., Mesquita L. F., Vassolo R. S. 2013. What doesn't kill you makes you stronger: The evolution of competition and entry-order advantages in economically turbulent contexts. Strategic Management Journal.

Geroski P., A., Gregg P. 1997. Coping with Recession: UK Company performance in adversity. Cambridge University Press.

Ghemawat P., Khanna T. 1998. The Nature of Diversified Business Groups: A Research Design and Two Case Studies. Journal of Industrial Economics 46(1): 35-61.

Goldszmidt R. G. B., Brito L. A. L., de Vasconcelos F. v. C. 2011. Country effect on firm performance: A multilevel approach. Journal of Business Research 64(3): 273-279.

Greenwald B., Stiglitz J. E. Year. Information, finance constraints, and business fluctuations. In Proceedings of the Proceedings of Taipei) Symposium on Monetary Theory, Institute of Economics, Academia Sinica.

Hall M., Weiss L. 1967. Firm Size and Profitability. The Review of Economics and Statistics 49(3): 319-331.

Harrigan K. R. 1980a. Strategies for declining industries. Journal of Business Strategy 1(2): 20-34.

Harrigan K. R. 1980b. Strategy Formulation in Declining Industries. Academy of Management Review 5(4): 599-604.

Hawawini G., Subramanian V., Verdin P. 2003. Is performance driven by industry- or firm-specific factors? A new look at the evidence. Strategic Management Journal 24(1): 1-16.

Hawawini G., Subramanian V., Verdin P. 2004. The home country in the age of globalization: How much does it matter for firm performance? Journal of World Business 39(2): 121-135.

Hoskisson R. E., Eden L., Lau C. M., Wright M. 2000. Strategy in emerging economies. Academy of management journal 43(3): 249-267.

Jiang B., Koller T. M., Williams Z. D. 2009. Mapping decline and recovery across sectors.

Karniouchina E. V., Carson S. J., Short J. C., Ketchen D. J. 2013. Extending the firm vs. industry debate: Does industry life cycle stage matter? Strategic management journal 34(8): 1010-1018.

Khanna T., Palepu K. 2000. Is Group Affiliation Profitable in Emerging Markets? An Analysis of Diversified Indian Business Groups. The Journal of Finance 55(2): 867-891.

Khanna T., Rivkin J. W. 2001. Estimating the Performance Effects of Business Groups in Emerging Markets. Strategic Management Journal 22(1): 45-74.

Latham S., F., Braun M., R. 2008. The Performance Implications of Financial Slack during Economic Recession and Recovery: Observations from the Software Industry (2001-2003). Journal of Managerial Issues XX(1): 30-50.

Levitt T. 1983. The globalization of markets. Harvard Business Review 61(3): 92.

Makino S., Isobe T., Chan C. M. 2004. Does Country Matter? Strategic Management Journal 25(10): 1027-1043.

Mann H. M. 1966. Seller Concentration, Barriers to Entry, and Rates of Return in Thirty Industries, 1950-1960. The Review of Economics and Statistics 48(3): 296-307.

Mascarenhas B., Aaker D. A. 1989. Strategy over the business cycle. Strategic Management Journal 10(3): 199-210.

Mauri A. J., Michaels M. P. 1998. Firm and industry effects within strategic management: An empirical examination. Strategic Management Journal 19(3): 211-219.

McGahan A., M., Victer R. 2010. How much does home country matter to corporate profitability? Journal of International Business Studies 41(1): 142-165.

McGahan A. M., Porter M. E. 1997. How much does industry matter, really? Strategic Management Journal 18(S1): 15-30.

McGahan A. M., Porter M. E. 2002. What do we know about variance in accounting profitability? Management Science 48(7): 834-851.

McMillan J. 2007. Market institutions. The new Palgrave dictionary of economics: 24-38.

McNamara G., Aime F., Vaaler P. 2005. Is Performance Driven by Industry or Firm-Specific factors? A response to Hawawini, Subramanian and Verdin. Strategic Management Journal 26: 1075-1081.

Miles G., Snow C. C., Sharfman M. P. 1993. Industry variety and performance. Strategic Management Journal 14(3): 163-177.

Miller D., Toulouse J.-M. 1986. Chief executive personality and corporate strategy and structure in small firms. Management Science 32(11): 1389-1409.

Mintzberg H. 2003. The strategy process: concepts, contexts, cases. Pearson Education.

Misangyi V., Elms H., Greckhamer T., Lepine J. 2006. A new perspective on a fundamental debate: a multilevel approach to industry, corporate, and business unit effects. Strategic Management Journal 27(6): 571-590.

Mishkin F. S. 1997. Understanding financial crises: a developing country perspective, National Bureau of Economic Research.

Nicholson R. R., Salaber J. 2014. The Impact of the Financial Crisis on the Performance of European Acquisitions. International Business and Institutions After the Financial Crisis: 73.

North D., C. 1991. Institutions. Journal of Economic Perspectives 5(1): 97-112.

North D. C. 1990. Institutions, institutional change and economic performance. Cambridge university press.

Oliver C. 1997. Sustainable competitive advantage: Combining institutional and resource-based views. Strategic management journal 18(9): 697-713.

Pearce II J. A., Michael S. C. 1997. Marketing strategies that make entrepreneurial firms recession-resistant. Journal of Business Venturing 12(4): 301-314.

Pearce II J. A., Michael S. C. 2006. Strategies to Prevent Economic Recessions from Causing Business Failure. Business Horizons 49(3): 201-209.

Peng M. W. 2003. Institutional transitions and strategic choices. Academy of Management Review 28(2): 275-296.

Peng M. W., Wang D. Y., Jiang Y. 2008. An institution-based view of international business strategy: A focus on emerging economies. Journal of International Business Studies 39(5): 920-936.

Porter M. 1980. Competitive Strategy: Techniques for Analysing Industries and Competitors: New York.

Powell T. C. 1996. Research Notes and Communications. How Much does Industry Matter? An Alternative Empirical Test. Strategic Management Journal 17(4): 323-334.

Prahalad C., Hamel G. 1990. The core competence of the corporation. Boston (MA): 235-256.

Raudenbush S., Anthony Bryk, Yuk Fai Cheong, Congdon R. 2004. HLM 6: Hierarchical Linear & Nonlinear Modeling: Lincolnwood, IL: SSI Scientific Software International.

Richardson F. M., Kane G. D., Lobingier P. 1998. The Impact of Recession on the Prediction of Corporate Failure. Journal of Business Finance & Accounting 25(1-2): 167-186.

Roquebert J. A., Phillips R. L., Westfall P. A. 1996. Markets vs management: What 'drives' profitability? Strategic Management Journal 17(8): 653-664.

Ruefli T., W. , Wiggins R., R. . 2003. Industry, corporate, and segment effects and business performance: A non-parametric approach. Strategic Management Journal 24(9): 861.

Rumelt R. P. 1974. Strategy, structure, and economic performance.

Rumelt R. P. 1991. How much does industry matter? Strategic Management Journal 12(3): 167-185.

Schmalensee R. 1985. Do Markets Differ Much? American Economic Review 75(3): 341-351.

Schwarzer D. 2012. The Euro Area Crises, Shifting Power Relations and Institutional Change in the European Union1. Global Policy 3(s1): 28-41.

Scott W. R. 1987. The adolescence of institutional theory. Administrative science quarterly: 493-511.

Shepherd W. G. 1972. The Elements of Market Structure. The Review of Economics and Statistics 54(1): 25-37.

Short J., C., McKelvie A., Ketchen JR D., J., Chandler G. N. 2009. Firm and Industry Effects on Firm Performance: A Generalization and Extension for New Ventures. Strategic Entrepreneurship Journal 3(1): 47-65.

Short J. C., Ketchen D. J., Palmer T. B., Hult G. T. M. 2007. Firm, Strategic Group and Industry Influences on Performance. Strategic Management Journal 28(2): 147-167.

Stewart J. W. H., Watson E., Warren, Carland C., Joann, Carland W. J. 1998. A Proclinity for Entrepreneurship: A Comparison of Entrepreneurs, Small Business Owners, and Corporate Managers. Journal of Business Venturing 14: 189-214.

Tan J., Peng M. W. 2003. Organizational slack and firm performance during economic transitions: Two studies from an emerging economy. Strategic Management Journal 24(13): 1249-1263.

Tarzijan J., Ramirez C. 2011. Firm, industry and corporation effects revisited: a mixed multilevel analysis for Chilean companies. Applied Economics Letters 18(1): 95-100.

Tong T. W., Alessandri T. M., Reuer J. J., Chintakananda A. 2008. How much does country matter? An analysis of firms' growth options. Journal of International Business Studies 39(3): 387-405.

Wernerfelt B. 1984. A resource-based view of the firm. Strategic management journal 5(2): 171-180.

Wernerfelt B., Montgomery C. A. 1988. Tobin's q and the Importance of Focus in Firm Performance. American Economic Review 78(1): 246.

Wright P. M., McMahan G. C., McWilliams A. 1994. Human resources and sustained competitive advantage: a resource-based perspective. International journal of human resource management 5(2): 301-326.

Yip G., S. 1992. Total global strategy: Managing for worldwide competitive advantage. Prentice-Hall: Englewood Cliffs, NJ.

Table 1. Comparative table among past studies on the debate

Author	Method	Industry Effect	Firm Effect	Year Effect	Corporate Effect	Country Effect	Country-Industry Effect
(Schmalensee, 1985)	OLS	18.8	0.1 [(NS)]	NS	-	-	-
	VCA	19.6	NS	-	-	-	-
(Wernerfelt & Montgomery, 1988)	OLS	19.5	2.6	-	-	-	-
	OLS (with correction for Int. Assets)	12.3	2.7	-	-	-	-
(Rumelt, 1991)	VCA	8.3	46.4	-	0.8	-	-
	VCA (+small)	4.0	44.2	-	1.6	-	-
(Roquebert et al., 1996)	VARCOMP	10.2	37.1	0.4	17.9	-	-
(McGahan & Porter, 1997)	COV	18.7	31.7	2.4	4.3	-	-
(Mauri & Michaels, 1998)	VCA (1988-92)	6.2	36.9	-	-	-	-
	VCA (1978-92)	5.8	25.4	-	-	-	-
(Brush et al., 1999)	VCA (SIC3)	16.1	35.8	5.5	11.6	-	-
	VCA (SIC4)	19.3	24.7	4.3	18.8	-	-
(Chang & Singh, 2000)	VCA	7.3	47.2	0.0	-	-	-
	VCA (+small)	4.0	44.2	1.6	-	-	-
	VCA (+small[6])	54.2	8.9	15.8	-	-	-
	VCA (+SMEs)	40.6	8.8	27.3	-	-	-
	VCA (+large)	19.3	47.6	9.5	-	-	-
(McGahan & Porter, 2002)	VCA	10.3	36.0	11.6	-	-	-
(Hawawini et al., 2003)	VCA (Full)	8.1	35.8	-	-	-	-
	ANOVA	16.0	16.7	-	-	-	-
(Ruefli & Wiggins, 2003)	OLS	0.1	12.3	7.1	-	-	-
(McNamara et al., 2005)	VCA	9.1	43.8	-	-	-	-
(Misangyi et al., 2006)	HLM	7.6	36.6	7.2	-	-	-
(Short et al., 2007)	VCA	19.2	65.8	14.9	-	-	-
	ANOVA	16.9	71.8	11.3	-	-	-
	HLM	19.2	65.8	14.9	-	-	-
(Arend, 2008)	OLS	9.6	90.4	-	-	-	-
(Short et al., 2009)	VCA (Sales) New Ventures	14.6	41.3	-	-	-	-
	VCA(SG) New Ventures	14.0	52.3	5.5	-	-	-
	VCA(Survival) New Ventures	1.7	98.3	-	-	-	-

---

[6]   Line of business defined at 4-digit SIC level

Table Continues….

Author	Method	Industry Effect	Firm Effect	Year Effect	Corporate Effect	Country Effect	Country-Industry Effect
(Short *et al.*, 2009)	VCA (Sales)	21.8	63.2	-	-	-	-
	VCA (SG)	23.6	64.4	2.56	-	-	-
	VCA (Survival)	1.2	98.8	-	-	-	-
(Hawawini *et al.*, 2004)	VCA (EP/CE)	0.2	23.8	0.4		0.2	2.1
	VCA (TMV/CE)	4.2	32.7	0.6		0.7	1.0
(Makino *et al.*, 2004)	VCA (SLDCs[7])	8.8	23.1	0.2	4.8	7.7	-
	VCA (LLDCs)	7.6	24.1	0.1	8.3	6.2	-
	VCA (NIEs)	6.7	25.2	0.1	11.3	4.4	-
	VCA (DCs)	5.5	28.2	0.1	13.4	3.6	-
(Tong *et al.*, 2008)	VCA (ROA)	4.6	48.7	0.1	-	8.6	11.5
	ANOVA (ROA)	7.5	40.0	0.1	-	12.1	16.9
	ANOVA(GOV[8])	9.7	22.4	0.1	-	2.3	21.9
(Chen, 2010) [9]	VCA (Taiwan)	0	55.8	13.2	-	-	-
	HLM (Taiwan)	5.3	94.7	3.7			
	VCA (S.Korea)	6.9	40.7	0.6	-	-	-
	HLM (S.Korea)	65.8	34.2	0.4			
(McGahan & Victer, 2010)[10]	VCA (ROA) High-income	7.43	62.6	0.5	-	1.7	19.2
	VCA (ROA) Mid-income	14.4	43.0	1.2	-	1.5	15.7
	VCA (ROA) Low-income	25.4	18.14	3.6	-	4.6	4.1
(Goldszmidt *et al.*, 2011)	VCA (ROA)	8.6	9.2	41.5	-	9.7	8.6
(Tarzijan & Ramirez, 2011)	IGLS (Chile)	10.5	46.3	-	14.3	-	-

---

[7] SLDC and LLDC stand for small and large less developed country respectively; DC stands for developed countries, and NIE for newly emerging economies

[8] GOV stands for Growth Options Value

[9] Only IT industries included

[10] The difference in total variance is attributed to the 'Year-Home Country' and 'Year-Industry' effects which are not included in the table.

Figure 1. GDP Growth and Domestic Market Capitalization in Emerging and Developed Markets
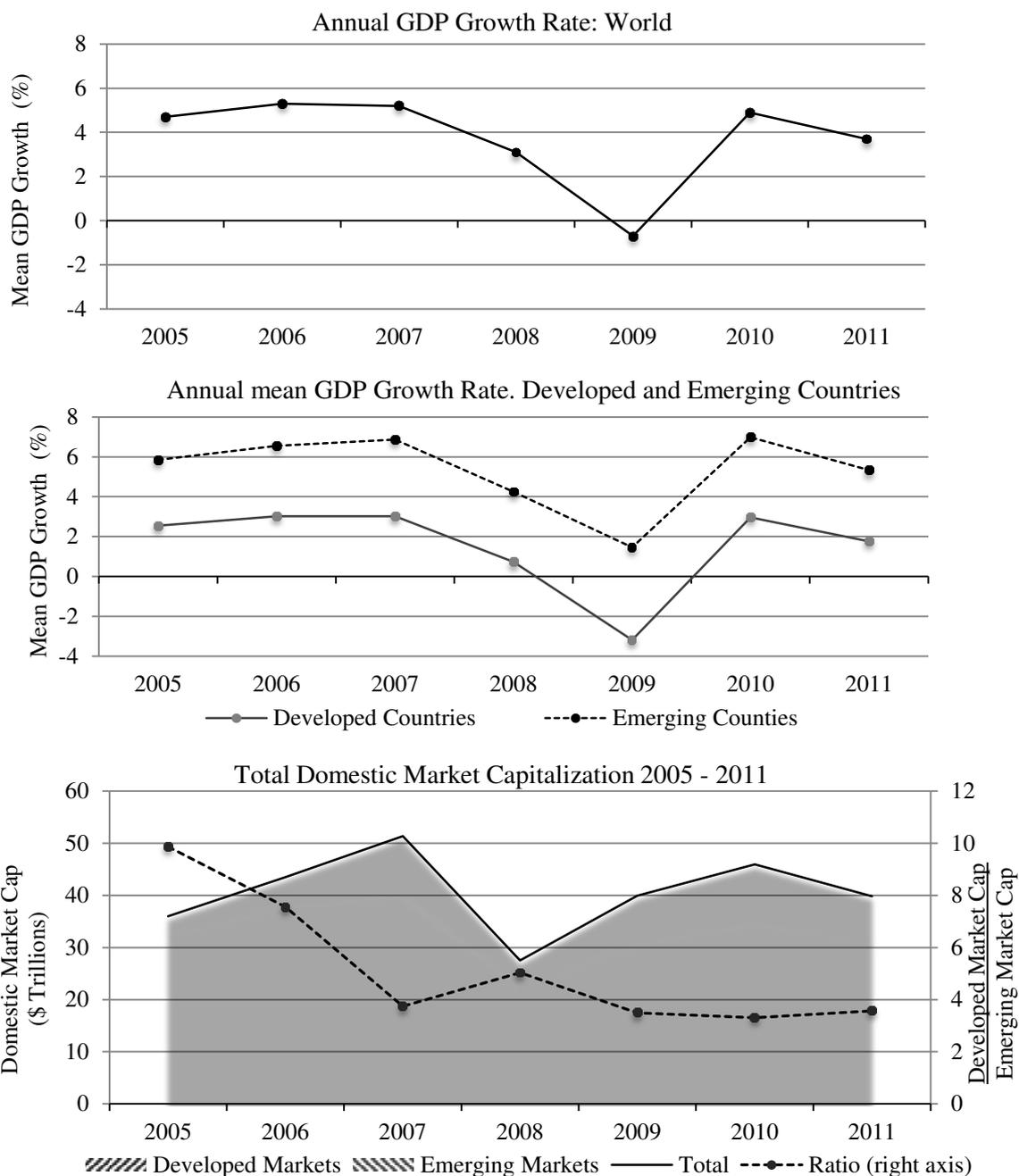
Notes: The first figure illustrates the global GDP growth rate during the period 2005−2011 and the second the mean GDP growth rate for two country groups (developed − emerging) from our sample. The third figure portrays the combined market capitalization across the ten largest developed and emerging capital markets in our sample. The dashed line represents the annual ratio of the total market cap of the developed markets over that of the emerging ones. The countries and their respective stock markets in our sample are: <u>*Developed Countries (Markets):*</u> Australia *(Australian SE),* Canada *(TMX Group)*, Germany *(Deutsche Borse)*, Japan *(Tokyo SE Group)*, Netherlands *(NYSE Euronext (Europe))*, Norway *(Oslo Bors)*, Sweden *(NASDAQ OMX Nordic Exchange)*, Switzerland *(SIX Swiss Exchange)*, UK *(London SE Group)* and USA *(NYSE Euronext (US)* and *NASDAQ OMX)*. <u>*Emerging Countries (Markets):*</u> Brazil *(BM&F Bovespa)*, China *(Shenzhen SE* and *Shanghai SE)*, India *(BSE Ltd)*, Indonesia *(Indonesia SE)*, South Korea *(Korea Exchange)*, Mexico *(Mexican Exchange)*, Philippines *(Philippine SE)*, Poland *(Warsaw SE)*, South Africa *(Johannesburg SE)* and Turkey *(IMKB)*. Data Sources: World Federation of Exchanges and World Bank

Table 2. Data Description: Number of Firms Per Country and Industry

Panel A: Emerging Countries

SIC 2 [a] :	10-14	15-17	20-39	40-49	50-51	52-59	60-67	70-89	Total
Brazil	3	14	108	52	5	10	42	17	251
China	56	81	1,013	166	63	80	150	89	1,698
Indonesia	20	12	113	24	18	12	78	13	290
India	9	43	378	45	5	2	64	72	618
Korea	2	44	628	46	31	13	56	76	896
Mexico	2	10	33	9	0	11	19	3	87
Philippines	11	10	33	24	0	2	59	16	155
Poland	2	23	86	15	13	3	25	24	191
Turkey	0	2	130	11	3	4	36	10	196
South Africa	14	11	51	15	12	21	50	30	204
Subtotal	119	250	2,573	407	150	158	579	350	4,586

Panel B: Developed Countries

SIC 2 :	10-14	15-17	20-39	40-49	50-51	52-59	60-67	70-89	Total
Australia	69	15	126	45	21	23	138	128	565
Canada	121	13	164	60	21	25	125	77	606
Switzerland	0	0	93	12	4	3	62	19	193
Germany	0	9	217	42	14	10	105	115	512
UK	45	29	262	62	25	55	357	232	1,067
Japan	5	178	1,487	178	255	310	250	485	3,148
Netherlands	3	7	40	0	6	2	20	27	105
Norway	26	2	27	18	0	0	26	11	110
Sweden	4	4	107	9	4	4	30	56	218
USA	170	40	1,438	312	106	211	994	627	3,898
Subtotal	443	297	3,961	738	456	643	2,107	1,777	10,422
Grand Total	562	547	6,534	1,145	606	801	2,686	2,127	15,008

Notes:
10-14	*Mining*
15-17	*Construction*
20-39	*Manufacturing*
40-49	*Transportation & Public Utilities*
50-51	*Wholesale Trade*
52-59	*Retail Trade*
60-67	*Finance, Insurance, Real Estate*
70-89	*Services*

[a] Standard Industrial Classification (SIC 2) codes are grouped in this table for brevity purposes

Table 3. Key Descriptive Statistics

Panel A: Number of Firm-Year Observations and Performance Statistics

Year	Full sample		Emerging Countries		Developed Countries	
	Count	Mean ROA (%)	Count	Mean ROA (%)	Count	Mean ROA (%)
2005	15,008	2.24	4,586	3.71	10,422	1.59
2006	15,008	2.68	4,586	4.17	10,422	2.02
2007	15,008	2.65	4,586	4.58	10,422	1.81
2008	15,008	-0.34	4,586	2.25	10,422	-1.48
2009	15,008	-0.91	4,586	2.65	10,422	-2.47
2010	15,008	1.75	4,586	3.65	10,422	0.92
2011	15,008	1.34	4,586	2.90	10,422	0.66
Total	105,056	1.35	32,102	3.42	72,954	0.43

Panel B: Performance per Country During Expansion (2005-2007) and Recession (2008-2011)

Emerging Countries	Mean ROA (%)		Change	T-Test
	Expansion	Recession		
Brazil	2.71	2.37	-0.34	(-0.44)
China	3.46	2.85	-0.61[**]	(-3.07)
Indonesia	2.34	2.93	0.58	(1.03)
India	7.02	4.99	-2.03[***]	(-5.82)
Korea	3.25	1.47	-1.77[***]	(-5.51)
Mexico	5.36	3.14	-2.22[**]	(-2.53)
Philippines	3.79	3.59	-0.21	(-0.28)
Poland	5.31	1.34	-3.96[***]	(-5.75)
Turkey	3.99	1.83	-2.16[**]	(-3.03)
South Africa	8.38	4.88	-3.50[***]	(-4.58)

Developed Countries	Mean ROA (%)		Change	T-Test
	Expansion	Recession		
Australia	1.11	-1.79	-2.90[***]	(-4.04)
Canada	0.99	-1.18	-2.17[***]	(-3.46)
Switzerland	4.31	1.46	-2.85[***]	(-3.74)
Germany	3.27	0.59	-2.67[***]	(-5.43)
UK	2.47	-0.12	-2.58[***]	(-6.38)
Japan	2.68	0.73	-1.95[***]	(-15.73)
Netherlands	5.16	-0.26	-5.42[***]	(-4.96)
Norway	2.63	-1.46	-4.08[**]	(-3.28)
Sweden	2.36	-0.60	-2.96[**]	(-2.76)
USA	0.68	-1.76	-2.44[***]	(-9.93)

	Expansion	Recession	Change	T-Test
Emerging Markets	4.15	2.86	-1.28[***]	(9.31)
Developed Markets	1.81	-0.59	-2.39[***]	(18.79)

<u>Notes</u>: *[***], [**], [*] significant at 0.001, 0.01 and 0.05 respectively*

Table 4. Variance Decomposition Results: Expansion vs. Recession Period

Panel A: Main Effects Model – All Countries (H1 and H2)

	All Years		Expansion		Recession		Difference
	VC[a]	VPC[b]	VC	VPC	VC	VPC	VPC
Firm Effects	54.660	88.73%	61.870	87.31%	68.760	90.38%	3.07%
	(0.322)		(0.364)		(0.404)		[H1]
Industry Effects	4.822	7.83%	6.714	9.47%	4.663	6.13%	-3.35%
	(0.251)		(0.328)		(0.268)		[H2]
Country Effects	2.124	3.45%	2.279	3.22%	2.657	3.49%	0.28%
	(0.396)		(0.435)		(0.493)		
LR test χ^2 (2):		1,450,30***		1,414.30***		1,226.70***	

Panel B: Main Effects Model – Emerging Markets (H3)

	All Years		Expansion		Recession		Difference
	VC[a]	VPC[b]	VC	VPC	VC	VPC	VPC
Firm Effects	30.030	84.36%	39.680	83.27%	37.570	87.86%	4.59%
	(0.327)		(0.431)		(0.408)		
Industry Effects	3.995	11.22%	4.933	10.35%	4.018	9.40%	-0.95%
	(0.333)		(0.419)		(0.359)		
Country Effects	1.572	4.42%	3.039	6.38%	1.174	2.75%	-3.63%
	(0.406)		(0.753)		(0.326)		[H3]
LR test χ^2 (2):		709.00***		389.70***		261.20***	

Panel C: Interaction Effects Model – All Countries (H4)

	All years		Expansion		Recession		Difference
	VC	VPC	VC	VPC	VC	VPC	VPC
Firm Effects	54.620	88.36%	61.840	86.99%	68.720	90.12%	3.14%
	(0.321)		(0.364)		(0.403)		
Industry Effects	1.628	2.63%	2.043	2.87%	1.734	2.27%	-0.60%
	(0.231)		(0.283)		(0.253)		
Country Effects	2.203	3.56%	2.498	3.51%	2.613	3.43%	-0.09%
	(0.400)		(0.460)		(0.475)		
Country x Industry	3.364	5.44%	4.709	6.62%	3.183	4.17%	-2.45%
	(0.205)		(0.268)		(0.218)		[H4]
LR test χ^2 (3):		1,500.50***		1,470.80***		1,272.30***	

Notes:
[a] VC = Variance Component / [b] VPC = Variance Partition Coefficient / Standard Errors in brackets ()

*** Prob> χ^2 significant at 0.001

Table 5. Variance Decomposition Results: Robustness Tests

Panel A: Main Effects Model

Emerging Countries	*Expansion*		*Recession*		Difference
	VC[a]	VPC[b]	VC	VPC	VPC
Firm Effects	39.680	83.27%	37.570	87.86%	4.59%
	(0.431)		(0.408)		
Industry Effects	4.933	10.35%	4.018	9.40%	-0.96%
	(0.419)		(0.359)		
Country Effects	3.039	6.38%	1.174	2.75%	-3.63%
	(0.753)		(0.326)		
LR test χ^2 (2):		389.70***		261.20***	

Developed Countries	*Expansion*		*Recession*		Difference
	VC	VPC	VC	VPC	VPC
Firm Effects	71.400	89.05%	82.160	93.10%	4.04%
	(0.503)		(0.578)		
Industry Effects	8.649	10.79%	5.930	6.72%	-4.07%
	(0.520)		(0.425)		
Country Effects	0.127	0.16%	0.162	0.18%	0.03%
	(0.160)		(0.119)		
LR test χ^2 (2):		827.10***		530.50***	

Panel B: Main and Interaction Effects Model

Emerging Countries	*Expansion*		*Recession*		Difference
	VC	VPC	VC	VPC	VPC
Firm Effects	39.740	83.69%	37.580	87.94%	4.25%
	(0.432)		(0.408)		
Industry Effects	1.206	2.54%	1.045	2.45%	-0.09%
	(0.262)		(0.249)		
Country Effects	3.037	6.40%	1.141	2.67%	-3.73%
	(0.743)		(0.311)		
Country x Industry Effects	3.503	7.38%	2.970	6.95%	-0.43%
	(0.380)		(0.330)		
LR test χ^2 (3):		401.40***		270.70***	

Developed Countries	*Expansion*		*Recession*		Difference
	VC	VPC	VC	VPC	VPC
Firm Effects	71.340	88.79%	82.050	92.79%	4.00%
	(0.501)		(0.576)		
Industry Effects	3.514	4.37%	2.704	3.06%	-1.32%
	(0.467)		(0.390)		
Country Effects	0.904	1.13%	0.435	0.49%	-0.63%
	(0.331)		(0.179)		
Country x Industry Effects	4.586	5.71%	3.235	3.66%	-2.05%
	(0.357)		(0.299)		
LR test χ^2 (3):		882.80***		573.90***	

Notes:
[a] VC = Variance Component / [b] VPC = Variance Partition Coefficient / Standard Errors in brackets ()
*** Prob> χ^2 significant at 0.001

Table I. Variance Decomposition Results per Country

	Panel A: Firm Effects *(H1)*					Panel B: Industry Effects *(H2)*				
	VC[a]		VPC[b]			VC[a]		VPC[b]		
	Expansion	*Recession*	*Expansion*	*Recession*	Diff.	*Expansion*	*Recession*	*Expansion*	*Recession*	Diff.
BRA (N=260)	64.67 (3.17)	58.96 (2.84)	81.76% [15.3***]	83.35% [18.1***]	1.59%	14.43 (3.54)	11.78 (2.78)	18.24% [15.3***]	16.65% [18.1***]	-1.59%
CHN (N=1704)	33.41 (0.58)	30.86 (0.54)	94.65% [27.2]	96.10% [20.0]	1.44%	1.89 (0.41)	1.25 (0.27)	5.35% [27.2]	3.90% [20.0]	-1.44%
IDN (N=304)	43.07 (1.88)	39.04 (1.73)	94.60% [2.6]	79.17% [19.7***]	-15.43%	2.46 (1.05)	10.27 (2.12)	5.40% [2.6]	20.83% [19.7***]	15.43%
IND (N=631)	30.87 (0.91)	33.11 (0.96)	81.22% [70.0***]	87.04% [53.8***]	5.83%	7.14 (1.33)	4.93 (0.93)	18.78% [70.0***]	12.96% [53.8***]	-5.83%
KOR (N=905)	46.03 (1.12)	41.55 (1.01)	92.73% [18.7***]	92.45% [25.7***]	-0.29%	3.61 (0.91)	3.40 (0.85)	7.27% [18.7***]	7.55% [25.7***]	0.29%
MEX (N=103)	28.72 (2.3)	31.93 (2.41)	85.50% [3.1*]	98.32% [0.1]	12.82%	4.87 (1.86)	0.55 (1.0)	14.50% [3.1]	1.68% [0.1]	-12.82%
PHL (N=165)	35.79 (2.16)	33.96 (2.06)	85.93% [5.3*]	88.11% [3.8*]	2.17%	5.86 (1.89)	4.58 (1.71)	14.07% [5.3*]	11.89% [3.8*]	-2.17%
POL (N=202)	45.03 (2.42)	49.91 (2.48)	98.90% [0.1]	100.00% [0.0]	1.10%	0.50 (0.99)	0.00 (0.00)	1.10% [0.1]	0.00% [0.0]	-1.10%
TUR (N=206)	43.10 (2.28)	43.39 (2.23)	84.19% [18.6***]	95.53% [2.5]	11.34%	8.10 (1.92)	2.03 (0.90)	15.81% [18.6]	4.47% [2.5]	-11.34%
ZAF (N=216)	63.23 (3.23)	57.63 (2.77)	99.89% [0.0]	100.00% [0.0]	0.11%	0.07 (1.04)	0.00 (0.00)	0.11% [0.0]	0.00% [0.0]	-0.11%
AUS (N=576)	127.40 (3.88)	140.70 (4.27)	89.77% [28.7***]	95.70% [6.7**]	5.93%	14.52 (2.67)	6.33 (1.86)	10.23% [28.7**]	4.30% [6.7**]	-5.93%
CAN (N=623)	99.29 (2.91)	107.40 (3.15)	84.21% [53.1***]	87.15% [32.9***]	2.94%	18.62 (2.96)	15.84 (2.76)	15.79% [53.1***]	12.85% [32.9***]	-2.94%
CHE (N=208)	51.79 (2.65)	58.29 (3.05)	97.63% [0.7]	95.86% [1.1]	-1.77%	1.26 (0.94)	2.52 (1.50)	2.37% [0.7]	4.14% [1.1]	1.77%
DEU (N=528)	54.09 (1.72)	60.77 (1.93)	92.50% [13.1***]	95.94% [5.9**]	3.44%	4.39 (1.04)	2.57 (0.82)	7.50% [13.1**]	4.06% [5.9**]	-3.44%
GBR (N=1077)	84.20 (1.85)	83.19 (1.82)	94.28% [21.2***]	97.12% [15.0***]	2.84%	5.11 (1.02)	2.47 (0.66)	5.72% [21.2***]	2.88% [15.0***]	-2.84%
JPN (N=3161)	19.00 (0.24)	26.74 (0.34)	93.90% [125.3***]	93.23% [96.1***]	-0.66%	1.24 (0.17)	1.94 (0.28)	6.10% [125.3***]	6.77% [96.1***]	0.66%
NLD (N=120)	44.19 (3.17)	62.49 (4.31)	93.15% [1.0]	93.66% [1.9]	0.51%	3.25 (1.90)	4.23 (2.06)	6.85% [1.0]	6.34% [1.9]	-0.51%
NOR (N=623)	66.73 (4.7)	83.74 (6.27)	83.53% [4.5*]	99.10% [0.0]	15.58%	13.16 (4.58)	0.76 (3.66)	16.47% [4.5]	0.90% [0.0]	-15.58%
SWE (N=234)	110.60 (5.48)	115.80 (5.60)	86.53% [11.9***]	95.32% [2.7]	8.80%	17.22 (4.47)	5.68 (2.48)	13.47% [11.9]	4.68% [2.7]	-8.80%
USA (N=3929)	99.32 (1.13)	116.00 (1.32)	91.63% [339.1***]	93.96% [203.6***]	2.32%	9.07 (1.03)	7.46 (0.96)	8.37% [339.1***]	6.04% [203.6***]	-2.32%

Notes:
[a] VC = Variance Component / [b] VPC = Variance Partition Coefficient / Standard Errors in brackets (...) / LR test χ^2 in square brackets [...] / ***,**,*: Prob> χ^2 significant at 0.001, 0.01, 0.1 respectively

The emerging countries sample includes Brazil (BRA), China (CHN), Indonesia (IDN), India (IND), South Korea (KOR), Mexico (MEX), Philippines (PHL), Poland (POL), Turkey (TUR) and South Africa (ZAF).

The developed countries sample includes Australia (AUS), Canada (CAN), Switzerland (CHE), Germany (DEU), United Kingdom (GBR), Japan (JPN), Netherlands (NDL), Norway (NOR) Sweden (SWE) and United States (USA)