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Sources of performance heterogeneity in emerging economies

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Abstract

Purpose – The purpose of this paper is to explore location effects on firm performance in emerging economies simultaneously accounting for permanent and transitory country, industry, country-industry and firm-specific effects.

Design/methodology/approach – The authors utilize a novel methodological approach: an autoregressive, cross-classified, mixed-effect linear regression model that allows them to simultaneously estimate a permanent (long-run) component, a transitory (short-run) component and the speed of decay of the transitory (autoregressive) component.

Findings – The authors find that the firm-specific effect is most important in explaining permanent and transitory differences. The country–industry interaction is the second most important effect, confirming that industries are not completely global and are still subject to country conditions. Broader views of the country–business context and industry conditions taken independently would be incomplete unless the country–industry interactions are considered. In other words, country matters because industry matters and vice versa. Country effects are also significant, but only transitory emphasizing the dynamic nature of emerging economies and the shortcomings that may result from considering the country business context static. Finally, the authors find that the chances of achieving sustainability of abnormal returns in emerging economies are dynamic and have significantly increased recently.

Originality/value – To the authors' knowledge, this is the first to simultaneously estimate country, industry, country–industry and firm effects on the permanent and transitory components of abnormal returns in a sample of emerging economies. The study generates important evidence regarding the sources of sustainable differentiation for firms competing in emerging economies. Finally, the authors find that chances of achieving sustainability of abnormal returns in emerging economies are dynamic and have significantly increased recently.

Keywords Emerging economies, Firm performance, Industry effect, Hierarchical linear modeling, Performance heterogeneity, Country effect

Paper type Research paper

Resumen

El propósito – Exploramos los efectos permanentes y transitorios de localización sobre el rendimiento de empresas en las economías emergentes para país, industria, industria-país y empresa específica.



La metodología – Utilizamos un enfoque metodológico nuevo: un modelo autorregresivo, de clasificación cruzada, de regresión lineal efecto mixto que permite estimar simultáneamente un componente permanente (largo plazo), un componente transitorio (corto plazo) y la velocidad de descomposición del componente transitorio (autorregresivo).

Los Resultados – El efecto de cada empresa es más importante en la explicación de las diferencias permanentes y transitorias. La interacción de la industria y país es el segundo más importante efecto, confirmando que las industrias no son completamente globales y todavía están sujetas a las condiciones del país. Análisis más amplias del contexto del país y condiciones de industria tomadas independientemente estarían incompletas si no se consideran las interacciones de la industria y país. En otras palabras, el país importa porque industria importa y viceversa. Los efectos de país también son importantes, pero sólo transitorios enfatizando la naturaleza dinámica de las economías emergentes y los problemas que resulten de considerar estático el contexto empresarial del país. Finalmente, nos encontramos con que las posibilidades de alcanzar la sostenibilidad de rentabilidades anormales en las economías emergentes son dinámicos y aumentaron significativamente recientemente.

La originalidad/el valor – A nuestro conocimiento, éste es el primer estudio a estimar simultáneamente efectos de país, industria, país - industria y empresa sobre los componentes permanentes y transitorios de rentabilidades anormales en una muestra de las economías emergentes. El estudio genera evidencia importante con respecto a las fuentes de diferenciación sostenible para las empresas que compiten en las economías emergentes. Finalmente, nos encontramos con que las posibilidades de alcanzar la sostenibilidad de rentabilidades anormales en las economías emergentes son dinámicas y aumentaron significativamente recientemente.

Palavras-chave Modelos hierarquicos Lineales, Economías emergentes, Performance de la empresa, Efeito País, Efeito industria.

Tipo de artigo Artigo de investigação

Resumo

Propósito/Objectivo – Exploramos os efeitos permanentes e transitórios da localização sobre o rendimento das empresas nas economías emergentes para país, industria, industria-país e empresa específica.

Metodologia – Utilizamos um enfoque metodológico novo: um modelo autorregressivo, de classificação cruzada, de regressão linear de efeitos mistos, que permite estimar simultáneamente uma componente permanente (longo-prazo), uma componente transitória (curto prazo) e a velocidade de decomposição da componente transitória (autorregressiva).

Resultados – O efeito empresa é mais importante na explicação das diferenças permanentes e transitórias. A interação da industria e país é o segundo mais importante, confirmando que as indústrias não são completamente globais e estão sujeitas às condições do país. Análises mais amplas do contexto do país e condições da indústria tomadas independientemente estariam incompletas se não se consideram as interações da indústria e país. Por outras palavras, o país importa porque a indústria importa e vice-versa. Os efeitos de país também são importantes, mas só transitórios, enfatizando a natureza dinâmica das economías emergentes e os problemas que resultam de considerar estático o contexto empresarial do país. Finalmente, Os resultados apontam para que as possibilidades de alcançar a sustentabilidade de rentabilidades anormais nas economías emergentes são dinâmicas e aumentaram recentemente.

Originalidade/valor – Tanto quanto sabemos, este é o primeiro estudo a estimar simultáneamente efeitos de país, indústria, país-industria e empresa sobre os componentes permanentes e transitórios de rentabilidades anormais numa amostra das economías emergentes. O estudo produz evidencias no que respeita a Fontes de diferenciação sustentável para as empresas que competem nas economías emergentes. Finalmente, demonstramos que as possibilidades de alcançar a sustentabilidade de rentabilidades anormais nas economías são dinâmicas e aumentaram significativamente recentemente.

Palavras-chave Modelos hierarquicos Lineares, Economías emergentes, Performance da empresa, Efeito País, Efeito indústria

Tipo de artigo Artigo de investigação

Introduction

Since the 1980s, studies addressing firms' performance heterogeneity (PH) have multiplied, giving rise to two fundamental questions:

- (1) What are the sources of performance differences among firms.
- (2) What is the temporal behavior or sustainability of abnormal performance (Bou and Satorra, 2007; Wiggins and Ruefli, 2002, 2005; McGahan and Porter, 1997, 1999, 2003; McNamara *et al.*, 2003; Rumelt, 1991; Roquebert *et al.*, 1996; Waring, 1996).

These studies focused on firm-specific, industry and corporate parent effects on firms' performance variation, following two major theories: industrial organization (IO) and resource-based view (RBV). During the past several years, extensions of previous studies had included a country effect on firms' profitability (Brito and Vasconcelos, 2006; Makino *et al.*, 2004; McGahan and Victor, 2010). How significant is the country effect on PH has significant implications on strategic decisions. A large impact denotes that the decision in which countries invest and compete is crucial to determine performance.

This growing interest in the effect of location has several foundations. First, countries differ in their institutional sophistication, which systematically affects property rights, market transactions, and, consequently, firms' transaction costs and profitability (Henisz, 2003; North, 1990; Peng, 2003). Second, differences in economic development anticipate differences in the availability and quality of resources, particularly, capital, infrastructure and human capital. Third, the level of economic development also anticipates differences in the rate of market growth and volatility, with emerging economies growing faster but with more volatility than developed ones. Finally, globalization is not complete, industries and firms are not completely integrated across-countries, therefore, they are still dependent on local conditions (Ghemawat, 2003). These factors support the expectation that location has an important influence on firms' PH.

This research stream based on sources of PH is complemented by that which is focused on the temporal behavior of performance, more specifically, the sustainability of performance differences among firms (McNamara *et al.*, 2003; Mueller, 1986, 1990; Odagiri and Yamawaki, 1990a, 1990b; Waring, 1996; Wiggins and Ruefli, 2002, 2005). Using different parametric and nonparametric techniques, researchers found that convergence of abnormal profits to a general mean, or a peers' mean, is incomplete. In other words, sustainability of abnormal returns, although difficult, is possible. Few previous studies attempted to examine the influence of firm-specific and industry effects on firms' performance differences over time (McGahan and Porter, 1999, 2003; Bou and Satorra, 2007); however, they lacked a country dimension.

We believe that three major questions about location and performance still deserve attention. First, most studies that analyze location effects consider PH static and do not distinguish between permanent and transitory effects. Given the dynamic nature of country characteristics, especially in emerging economies, it is important to distinguish between temporary and transitory effects on performance. Additionally, not distinguishing between permanent and transitory components of sustainable performance may result in errors in the estimates. Second, part of the country or location effect on firms is not straightforward, but rather the result of strong interactions

between country characteristics and industry structure, and the interaction between country and industry should not be underestimated. Third, understanding the country effect on PH remains incomplete (McGahan and Victor, 2010), particularly when referring to emerging economies. Given that emerging economies account for more than half of the world's recent economic growth (IMF World Economic Outlook, 2008), understanding the sources of PH in this context is becoming increasingly important.

We utilize a novel methodological approach: an autoregressive, cross-classified, mixed-effect linear regression model that allows us to simultaneously estimate a permanent (long-run) component, a transitory (short-run) component and the speed of decay of the transitory (autoregressive) component and also estimate the magnitude of variation at each component from country, industry, country–industry and firm-specific effects on both the permanent and transitory levels. This is a significant improvement over previous methodologies.

We find, first, that permanent differences in performance are possible, although very small, and that most differences are transitory. Second, we find a significant country effect on the transitory component and differences in the autoregressive coefficient between countries; therefore, countries have a significant impact determining performance differences. However, the impact is only temporary. Third, the country–industry interaction effect is significantly more important in explaining performance differences than industry and country effects considered separately; therefore, broader views of the business context are incomplete, unless the cluster of country–industry interactions is considered. For scholars, this result may also imply an effort to adequately integrate the IO and institutional perspectives. Fourth, firm characteristics are critical in explaining permanent as well as transitory performance differences, given that the firm effect is three to four times more important than the country or industry effects. Therefore, even in emerging economies, where the business environment can be binding business development, managers can obtain sustainable differentiation from firms' unique resources and capabilities. Finally, there is strong suggestion of important changes over time, with higher sustainability in more recent years. This implies that recent pro-markets reforms and the increase in globalization did not necessarily translate into increased competition and the erosion of profit gaps between firms.

This study makes several important contributions. To our knowledge, it is the first to simultaneously estimate country, industry, country–industry and firm effects on the permanent and transitory components of abnormal returns in a sample of emerging economies[1]. Second, the study generates important evidence regarding the sources of sustainable differentiation for firms competing in emerging economies. The considerable importance of industry–country interactions indicates that, regardless of the process of industry globalization and integration of emerging economies to the rest of the world, country–industry characteristics are critical factors affecting PH. Finally, we find that chances of achieving sustainability of abnormal returns in emerging economies are dynamic and significantly increased recently.

Antecedents

The firm versus industry debate

The two main theoretical explanations in the field of strategy for the existence of PH are the IO perspective and the RBV. The IO perspective focuses on the industry context and

how firms adapt their conduct to this context, which, in turn, determines firm performance; the RBV focuses on firms' internal development, accumulation and combination of distinctive resources and capabilities. Schmalensee (1985) and Rumelt's (1991) series of studies on magnitudes of industry and firm-specific effects attempted to shed light on the relative importance of each theory by using a variance decomposition methodology. Other researchers, who complemented these seminal works by altering the methodology and the sample (Chang and Hong, 2002; McGahan and Porter, 1997; McGahan and Porter, 2002; McNamara *et al.*, 2003), confirmed that the firm-specific effect (including business unit and corporate parent) was dominant, followed by the industry effect. The latter accounted for 6 to 20 per cent of variation in firm performance, the corporate parent effect ranged from 1 to 18 per cent, and the business unit effect ranged from 30 to 60 per cent.

Another research stream addressed the question of sustainability and the dynamics of PH across firms and industries. These studies, which focused on the Schumpeterian hypothesis of innovation and erosion of competitive advantages, measured how long abnormal returns last or persist testing the rate of decay, or convergence, of abnormal returns using autoregressive models (McNamara *et al.*, 2003; Mueller, 1986, 1990; Waring, 1996; Wiggins and Ruefli, 2005). In general, convergence of abnormal returns was incomplete and the rate of convergence varied among different firms and different industries. These results were confirmed by other studies using nonparametric techniques (Wiggins and Ruefli, 2002; Wiggins and Ruefli, 2005).

Two studies accounted simultaneously for industry and firm-specific effects on permanent and transient components of abnormal returns. McGahan and Porter (1999), in a sample of US firms (1981-1994), found that the industry effect persisted longer than the corporate parent effect, which in turn persisted longer than firm-specific effects. Bou and Satorra (2007), for a sample of Spanish firms (1995-2000), found that firm-specific effects were most important in explaining both permanent and transitory components of abnormal returns. At the firm level, the transitory component was more important than the permanent, while the opposite was true at the industry level. These antecedents that simultaneously address permanent and transitory components, however, lacked analysis of the country effect.

Country effect on firm performance

Recent studies that expanded the initial analysis of abnormal returns to a cross-country empirical setting addressed the importance of the country effect on performance (Brito and Vasconcelos, 2006; Makino *et al.*, 2004; McGahan and Victor, 2010; Tong *et al.*, 2008). Makino *et al.* (2004) found that industry and country effects were similar, with each explaining 4 to 5 per cent of the performance variance, followed by the corporate effect (7-8 per cent); the business unit affiliate effect was the most significant (20 per cent). Interestingly, they also reported that in emerging markets, the country effect (6-7 per cent) was more important than in developed countries (4 per cent). Brito and Vasconcelos (2006) found that, depending on the sector analyzed, the country effect on firm PH explained between virtually zero to 18 per cent of performance variance.

McGahan and Victor (2010) also found that although country effect had influence, values were very low compared to firm-specific and industry effects, probably because of measuring only firms' home-country effect, which was not necessarily where most business occurs, especially for large and internationally diversified multinational

enterprises (MNEs). On the other hand, for domestic firms, whose home country was also the base of most firm operations, the country effect accounted for 5 per cent of performance variance, which was similar to Makino *et al.*'s. (2004) results. Also important to note is that McGahan and Victor (2010) found differences in the magnitude of country effect, being more important (7 per cent) for low-income countries than for high income countries (1 per cent).

In terms of persistence of abnormal returns, Odagiri and Yamawaki (1990b) compared results from several developed economies and found that all countries exhibit permanent differences in abnormal returns. Also, different intensities of persistence existed among countries, with more persistence in the USA than in Germany and Japan, while the UK, Canada and France were somewhere in between. Glen *et al.* (2003) also found differences in the intensity of persistence among seven emerging countries. In a study of 15 European Union countries (1999-2004), Bou and Satorra (2010) found substantial differences in PH and persistence across countries and industries for both permanent and transitory components of firms' returns.

In summary, previous studies using variance decomposition and other static analyses reinforced the importance of accounting for country effects relative to industry- and firm-specific effects. Dynamic studies also highlighted differences among countries in the rate of persistence of returns. However, none has estimated simultaneously country, industry, country–industry and firm effects on both permanent and transitory differences in performance. Additionally, most studies were from developed economies (the USA, Europe and Japan), creating concerns regarding extending previous studies to emerging economies. First, developed countries tend to be more homogeneous, at least, in terms of income per capita, economic stability and institutions. Second, studies from developed countries with a large number of MNEs in the sample underestimate the country effect if they only capture the home-country effect, which is not necessarily where most MNE operations' occur. Finally, if country effect is more important in explaining performance of firms competing in emerging markets than in developed ones in static models, it might be reasonable to also expect a different dynamic pattern. Our purpose is to fill these gaps in previous studies.

Country effect on performance differences in the case of emerging economies

Theoretical considerations on country effects

There are several reasons to expect differences in firms' performance between countries. Business conditions in emerging economies differ significantly, eventually influencing PH in the short term as well as the long term. We define three areas of difference:

- (1) National endowment of resources.
- (2) Economic and political institutions.
- (3) Growth, macroeconomic stability and the business cycle.

Each of these aspects affects the permanent (long-term) and transitory (short-term) components of returns and PH.

National endowment of resources. Countries differ in the quantity and quality of resources. Even though trade of production factors has increased in recent years, firms still source most of their resources locally (Ghemawat, 2003), specially hiring local labor and managers who remain subject to local culture. Because most physical resources

originate locally, firms, in their quest for superiority, are subject to local specific endowments of potentially superior and unique resources. Firms can extend these endowment boundaries by means of importing resources or outsourcing components and services; however, these alternatives are limited by both the cost of transportation and communication and the existence of regulatory barriers on international trade, capital flows and technology exchange. The works of [Ricardo \(1817\)](#) were the first to address the role of local resource relative endowments on industry behavior and performance; more recently, [Porter \(1990\)](#) and [Ghemawat \(2007\)](#) confirmed their importance.

Emerging economies differ widely in their “hard natural” resource endowments; furthermore, most are poorer than developed economies in terms of “soft” or “created” resources, such as human capital, financial resources and infrastructure (World Bank’s World Development Indicators, World Economic Forum’s The Global Competitiveness Report). This alters the sources of competitive advantage when compared to developed countries, favoring more static and geography-defined resources (i.e. natural resources) over dynamic ones based on innovation, thus increasing the permanent component of PH.

Economic and political institutions. The institutional perspective is one of the most applicable paradigms for explaining firm behavior and performance in emerging economies ([Hoskisson et al., 2000](#); [Peng, 2003](#); [Peng et al., 2008](#)). Furthermore, institutions require long time to develop, hence widespread long-term heterogeneity across countries, which cannot erode easily ([La Porta et al., 1997, 1998](#); [Chan et al., 2008](#)). Institutions are not isolated; they form part of a complex system of cultural beliefs and values. Additionally, political, social and economic institution are closely interrelated and complementary. This intricate system creates strong path dependencies that result in a high degree of institutional stability ([Jackson and Deeg, 2008](#)). Any change in a particular institution has to be followed by changes in its complementary institutions; otherwise, the initial change may remain ineffective.

The presence of institutional heterogeneity between countries and different institutional voids in emerging economies generates a landscape for differentiation at the nonmarket level. For example, [Khanna and Palepu \(1997, 2000\)](#) and [Khanna and Rivkin \(2001\)](#) claimed that institutional weakness explains why developing large unrelated diversification, typical of large groups in emerging economies, may be a more successful strategy in this context than in developed economies. Recent evidence on the impact of individual firms’ actions on the institutional environment seems to support this line of argumentation ([Dieleman and Sachs, 2008](#)).

Economic and political institutions not only differ significantly between emerging and developed countries there is also significant heterogeneity among emerging countries. Latin American countries present more heterogeneity and more changes in the institutional setting than Asian countries. For example, Asian and Latin American countries are rank similar in terms of social institutions like education, health and markets’ efficiency. However, Latin American countries have better conditions in terms of freedom and democracy, while Asian countries perform better in terms of economic institutions, macroeconomic stability, infrastructure, easiness to open a business and labor-market efficiency. On the other hand, some of the social and economic institutional characteristics of Latin America are more similar to those of Eastern Europe. (WEF’s,

2012 The Global Competitiveness Report, World Bank's Doing Business (2004-2008); IMD's, 2012 World Competitiveness Yearbook).

Therefore, we conclude that:

H1. There will be a significant country effect on the permanent (long-term) component of abnormal returns.

Macroeconomic stability and the business cycle. Emerging economies have high growth rates, but also the ups and downs of the business cycle are substantially more severe. Economists refer to these as “collapse and phoenix miracle” cycles to emphasize the deep depressions followed by fast recoveries common to emerging economies (Calvo and Mendoza, 2000; Calvo *et al.*, 2006). Calvo *et al.* (2006), in a study of economic cycles in emerging economies during the period 1980-2004, found that about half of these episodes were mild recessions, with an average decline of 1.5 per cent in GDP, similar to developed economies' cycles, while the other half were defined as genuine collapses, with an average 10 per cent decline in GDP, many of which follow a sudden stop in foreign capital inflow.

Many of these crises had implications beyond demand and economic activity, implying significant changes in resource-based and markets-positioning advantages. Real wages declined very sharply during the recession stage and remain depressed as the economy bounced back to full recovery, while there were sharp rises in the cost of capital and very weak credit and investment activity. Therefore, there are significant changes in the cost relationships of resources.

Most of these crises, especially those following substantial capital outflows, resulted in considerable devaluations of the local currency that altered the relation between domestic and international prices of resources and products. These changes drastically modified the availability and relative contribution of domestic and foreign resources to firms' value chains; therefore eroded competitive advantages derived from integration to global value chains and foreign resources specialization. Additionally, they modified the relative contribution of domestic and foreign sales; in this case, eroding advantages derived from domestic market specialization. The presence of drastic economic cycles combined with changes in the relative prices of resources create positive and negative shocks that endure for a relatively long time until the economy fully recovers or firms adapt to the new relative prices.

Therefore, we argue that:

H2. There will be a significant country effect on the transitory (short-term) component of abnormal returns.

Country–industry interactions

All the country elements under examination are, theoretically, deeply interrelated to industry characteristics; therefore, we expect the industry–country interaction to have a significant effect on firms' PH for emerging economies and to have a different impact on permanent and transitory components. First, because most industries are not fully global, they are not perfectly independent from country conditions. Even for global industries, the flow of goods and services between countries and integration processes may be incomplete (Ghemawat, 2001, 2003, 2007). Trade barriers, cultural and institutional distance have been significantly lowered among developed and emerging economies; however, they still remain higher among emerging economies. The

integration across countries of firms' manufacturing value chains, innovation processes and product designs remains more important among developed economies than emerging economies (Dreher, 2006; Dreher *et al.*, 2008).

Second, one of the characteristics of emerging economies is that key resources and their markets are not plenty developed, creating several asymmetries in access to resources and opportunities for resource-based differentiation (Khanna and Palepu, 1997). These asymmetries also occur at the industry level. National resource endowment affects all industries; nevertheless, each industry requires different combination of resources, some are heavily dependent on natural resources, and others are capital intensive, low-skilled labor-intensive or knowledge-intensive. Managers adapt to the particular country resource characteristics selecting and specializing in those industries where the country has a particular resource advantage. In turn, a particular industry's success will stimulate investment, technology and infrastructure development to increase the availability and quality of its specific resources, reinforcing the country-resource advantage. Many "created" resources, such as human capital and institutional microenvironment, are actually created or influenced by a particular network of firms, suppliers, customers and public organizations known as clusters, which are industry- and geography-specific (Porter, 1990). According to Porter's diamond model, country-specific and industry characteristics (resource endowments, demand conditions, supporting industries and firm strategy, structure and rivalry) are deeply interrelated in a cluster; this dynamic interrelation is responsible for industry cluster competitiveness.

Third, even industry policy has been virtually eliminated from government policies and programs in developed economies, industry policy is still significant in emerging economies political agendas (Rodrik, 2008). Governments active in trying to stimulate development usually apply strategies to promote selected industries through a series of policies that create special economic and institutional settings for those industries, such as grants, tax exemptions, credit preferences, pro-firm regulation and trade protection. While there is still considerable controversy about the impact of industrial policies, most of this controversy is around the effect on economic growth and social welfare. Our argument is that regardless of its effectiveness to promote general economic growth, these policies are set at the country level, but designed to create significant differences in industry conditions and therefore should significantly impact firms' PH also at the country-industry level.

Finally, some country's institutional settings, not necessarily intended to promote any specific industry, may also influence how a specific industry structure may impact profit performance. For example, manufacturing, capital- and knowledge-intensive industries in emerging countries are highly concentrated and dominated by two to three large diversified domestic groups and MNEs (Tybout, 2000). Given this industry structure and important voids in antitrust law, we should expect a larger and more persistent industry effect on PH. Private property protection institutional voids negatively affect more seriously capital-intensive and asset-specific industries than labor-intensive industries. Lack of political and regulatory stability institutions have a more significant impact on industries that are heavily regulated and have long-term maturity investments than on industries that are lightly regulated and have short-term maturity investments. In shorts, national level institutional characteristics, such as

weak property rights, lack of strong antitrust laws and political and regulatory instability, will tend to emphasize industry asymmetries on performance.

In summary, differences at the country level in national endowments, created resources and institutional settings are not uniform across industries nor are industry effects uniform across countries, given that most industries are nonglobal; therefore we argue that:

H3a. There will be a significant country–industry effect on the permanent (long-term) component of abnormal returns.

H3b. There will be a significant country–industry effect on the transitory (short-term) component of abnormal returns.

To test these hypotheses simultaneously, we develop a novel econometric model.

Analysis model of PH

First, we propose a general model that decomposes abnormal returns into permanent and transitory components and an unexplained error term. Second, we adapt the model to simultaneously address firm, industry, country and industry–country effects on the permanent and transitory components. Basing our model on [Bou and Satorra's \(2007\)](#), we modify it to incorporate the country and industry–country effects.

First stage: permanent and transitory components

The very broad general function explains PH:

$$R_{cift} = f(P_{cif}, T_{cift}, E_{cift}) \quad t = 1, 2, \dots, T, \quad (1)$$

where R_{cift} indicates the abnormal return at year t of firm f in industry i and country c . The abnormal return is computed with regard to the grand mean of return for that year; P_{cif} is the permanent component; T_{cift} is the transitory component at time t ; and E_{cift} is the unexplained firm-by-year component at time t . Because our goal is to empirically measure the impact of each component on the abnormal return, we need to specify the general function. Following accepted practice described previously, we adopt a linear specification:

$$R_{cift} = P_{cif} + T_{cift} + E_{cift} \quad t = 1, 2, \dots, T. \quad (2)$$

For ease of analysis, we adopt a first-order autoregressive process AR(1) for the transitory component and reexpress T_{cift} as $\beta_1 R_{cift(t-1)} + e_{cift}$. We assume that e_{cift} , the error term of the autoregressive component, is uncorrelated with $R_{cift(t-1)}$ and with E_{cift} . The model we use here is first order, but can easily be extended to autoregressive processes of higher order.

We now reexpress equation (2) as:

$$R_{cift} = P_{cif} + \beta_1 R_{cift(t-1)} + u_{cift} \quad t = 1, 2, \dots, T. \quad (3)$$

The *permanent component*, P_{cif} , accounts for long-run sustainable differences of firm performance that do not disappear within the period of observation. In turn, the permanent component may be affected by long-run differences in:

- industry structure (industry effect);
- firms' resources and capabilities (firm-specific effect); or
- location differences (country and industry–country effects).

The *transitory component*, $\beta_1 R_{cift(t-1)}$, accounts for short-run differences in performance. Parameter β_1 indicates the magnitude of transmission, or persistence, of any performance difference and indirectly indicates short-run persistence of any competitive advantage or disadvantage. A value of 1 indicates complete persistence between periods; 0 indicates absence of persistence between periods. In other words, β_1 indicates how fast short-run advantages erode. The transitory component may also be a consequence of shocks; for example, a macroeconomic shock whose consequences last for a short period of time or a temporary change in industry structure with at least a temporary impact on performance until all firms adapt to the new structure. Therefore, the transitory component may also be affected by:

- industry;
- firm-specific factors; or
- location differences (country and industry–country effects).

Finally, u_{cift} accounts for the unexplained part of firms' abnormal profit that is not correlated across time or across firms and is also uncorrelated with P_{cif} and $R_{cift(t-1)}$.

Second stage: firm-specific, industry, country and industry–country effects

We explore the magnitude of the firm-specific, industry, country and industry–country effects for both the permanent and transitory components as well as address the magnitude of the unexplained part. Therefore, we reexpress the permanent component P_{cif} as $\alpha_{01} + p_c + p_i + p_{ci} + p_{cif}$, where α_{01} represents a time-invariant parameter (fixed effect), while p_c , p_i , p_{ci} and p_{cif} are random effects, associated with the country, industry, country–industry and firm-specific effects on the permanent component. Because the firm level is nested both at the industry and country levels, we generate a country–industry interaction effect. A high value across firms (p_{cif}) indicates a unique and inimitable set of resources and capabilities; a high value across industries (p_i) or countries (p_c) shows that abnormal profitability could arise from industry structural characteristics and national context particularities, respectively. A high country–industry value (p_{ci}) indicates a substantial long-term country–industry interaction.

Thus, we reexpress the transitory component as:

$$\beta_1 R_{cift(t-1)} = \beta_{11} R_{cift(t-1)} + \tau_c + \tau_i + \tau_{ci} + \tau_{cif} \tag{4}$$

where β_{11} represents a time-invariant parameter (fixed-effect), while τ_c , τ_i , τ_{ci} and τ_{cif} are random effects, associated with country, industry, country–industry and firm-specific effects, on the transitory or autoregressive component. With these definitions, we reexpress equation (3):

$$R_{cift} = \alpha_{01} + p_c + p_i + p_{ci} + p_{cif} + \beta_{11} R_{cift(t-1)} + \tau_c + \tau_i + \tau_{ci} + \tau_{cif} + u'_{cift} \tag{5}$$

$t = 1, 2, \dots, T.$

Equation (5) indicates that firms' abnormal returns can be decomposed into five several parts:

- (1) Term α_{0i} , which indicates the average abnormal permanent return of the population (expected to be equal to zero).
- (2) Permanent differences or divergences, due to country, industry, country–industry and firm-specific effects (p_c, p_i, p_{ci} and p_{cif} , respectively).
- (3) A transitory component with a persistence coefficient, β_{11} (invariant across time).
- (4) Variations in the transitory component due to country, industry, country–industry and firm-specific effects ($\tau_c, \tau_i, \tau_{ci}$ and τ_{cif} , respectively).
- (5) An error term, u_{cift} . This specification allows us to test the hypothesis in a simultaneous estimation.

Econometric analysis

For model 5, we use an autoregressive, cross-classified, mixed-effect linear regression methodology, part of the family of hierarchical models, where some effects are nested in other effects (e.g. annual observations of abnormal returns are nested in the firm level; then the firm level is nested in the country–industry level). The model is cross-classified because the industry–country level is simultaneously nested in each of the country and industry levels and is mixed-effect because it is a combination of fixed effects and random effects. The estimation of the permanent component parameter, α_{0i} , and the autoregressive coefficient, β_{11} , of the temporary component are fixed effects, while the firm-specific, industry, industry–country and country effects are random effects. We estimate Model 5's fixed effects, α_{0i} and β_{11} , and the standard deviation at the firm-specific, industry, industry–country and country levels around these two parameters ($V p_c, V p_i, V p_{ci}$ and $V p_{cif}$ for α_{0i} and $V \tau_c, V \tau_i, V \tau_{ci}$ and $V \tau_{cif}$ for β_{11}). From the standard deviation estimates, it is easy to derive variance decomposition analysis for the permanent and transitory components and also for the different levels and to express them as percentage of total variance.

To compare with previous studies, we use return on assets (ROA), defined as net profit divided by book value of assets (Mueller, 1986; Geroski and Jacquemin, 1988; Waring, 1996; Wiggins and Ruefli, 2002, 2005). We define the model dependent variable, R_{cift} (abnormal returns), as the difference between the firm i 's ROA in year t and the grand mean of that year.

Data

Our sample of Latin American firms represents emerging economies that are generally unrepresented in the strategic management literature (Hoskisson *et al.*, 2000), thus creating an opportunity to present evidence from a completely new sample relative to previous research. The shortage of studies on Latin America is consistent with the relative importance of the region. Latin America is the second most important emerging region in the world after Southeast Asia, with an aggregated GDP roughly the same as China's and three times larger than India's. Brazil and Mexico are among the most important destinations of foreign direct investment in the world, and Brazil's capital market is the second largest among emerging markets.

We gathered accounting information for our selected countries from Economática, the most complete database in Latin America, which includes information on companies that publicly trade stocks or bonds and contains historical quarterly and annual financial statements, daily stock prices, dividends and splits. The industrial classification we follow belongs to Economática, which is similar to the North America Industrial Classification System. Economática's level of aggregation is equivalent to a three- or four-digit SIC code, depending on industry; therefore, it is similar to the most detailed previous studies in terms of industry disaggregation.

The original dataset consisted of 13,144 observations in 21 economic sectors or industries for the period 1990-2006. We were compelled to reduce the sample size to satisfy several requirements. One sector was eliminated for lack of adequate industry specification. All firms with less than five observations were excluded to ensure that results would not be affected by temporary entities established for the dispensation of assets and other transient phenomena (McGahan and Porter, 1997). In the same line, any combination of industry-country with less than five companies was also excluded as well as any industry in less than five countries. After these adjustments, the final sample size is 8,039 observations for 806 firms in 12 sectors and five countries: Argentina, Brazil, Chile, Mexico and Peru, which together represent approximately 70 per cent of the region's total economic activity (World Bank's World Development Indicators, 2008). Virtually all companies in the sample are domestic firms, therefore, we are confident in capturing the country effect where most of the business operations occur. Table I describes the sample.

Results

Table II provides descriptive statistics and a yearly ROA correlation matrix. As expected, the correlation coefficients of ROA between years decrease as the lapse between years increases.

Tables III-VI present the estimates of the parameters in equation (5) as well as the corresponding standard deviations and variance decomposition values, in percentages. Table V and Table 6 displays the standard deviation nesting first at the industry level and then at the country level, while Table VII displays results nesting first at the country level and then at the industry level. All values are significantly different from zero. To test for significance, we compare this model with an unrestricted model and run a likelihood-ratio test. Both χ^2 tests indicate a significant improvement with the estimated models and the unrestricted alternatives.

Both nesting procedures generate very similar results for the permanent and temporary component. Even permanent and transitory variations in firms' returns are significant, the transitory component variation is much greater than the permanent (45 and 5 per cent, respectively). Therefore, evidence supports permanent and transitory differences in PH among firms in Latin America; however, according to the percentages of variance obtained, transitory differences are more important than permanent differences.

From the analysis of variance of the permanent component in Tables V-VII, permanent abnormal returns originate in firm-specific factors (4 per cent) as well as in industry-country characteristics (1 per cent), while industry and country characteristics, even statistically larger than zero, are extremely low in value, < 0.5 per cent. Therefore, we weakly support *H1*, permanent country effects are negligible and

Economic sector	AR	BR	CL	MX	PE	Total by economic sector	ROA	SD	Observation
Agriculture and fishing	56	41	259	39	87	482	1.46	9.45	482
Chemical	78	403	112	84	71	748	2.05	10.00	748
Electric energy	60	407	310	-	75	852	4.32	8.87	852
Finance and insurance	86	495	197	105	186	1,069	1.92	7.73	1,069
Food and beverages	59	349	234	257	194	1,093	2.50	9.50	1,093
Iron, steel and metallurgic	50	518	99	115	63	845	0.67	11.72	845
Mining	-	58	74	48	202	382	5.09	14.97	382
Nonmetallic minerals	43	80	85	115	65	388	6.04	7.80	388
Retail trade	-	165	192	352	29	738	4.14	9.80	738
Telecommunications	54	289	117	62	-	522	3.42	9.75	522
Textiles	38	366	52	63	110	629	(2.25)	12.23	629
Transportation services	28	111	108	44	-	291	1.18	11.74	291
Total by country	552	3,282	1,839	1,284	1,082	8,039	2.40	10.33	8,039
ROA	0.20	0.20	5.74	3.45	3.31	2.40			
SD	10.48	10.46	10.08	9.41	9.44	10.33			
Observation	552	3,282	1,839	1,284	1,082	8,039			

Table I.
Description of the sample

Table II.
Descriptive statistics and
correlation matrix

Year	Mean	SD	Observation	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	
1991	2.35	10.94	278																
1992	2.37	11.29	307	0.41															
1993	3.01	10.75	353	0.40	0.41														
1994	3.96	9.97	449	0.25	0.42	0.50													
1995	2.34	11.41	482	0.34	0.36	0.34	0.69												
1996	2.58	11.42	530	0.35	0.41	0.57	0.63	0.63											
1997	3.06	9.93	574	0.28	0.16	0.25	0.24	0.35	0.42										
1998	1.05	10.43	611	0.31	0.13	0.20	0.20	0.31	0.31	0.35									
1999	1.23	10.21	666	0.32	0.10	0.12	0.15	0.25	0.28	0.29	0.38								
2000	1.60	8.25	660	0.29	0.14	0.15	0.13	0.12	0.25	0.38	0.30	0.52							
2001	0.90	9.51	643	0.25	0.09	0.07	0.01	0.08	0.11	0.08	0.34	0.33	0.44						
2002	(0.28)	11.82	619	0.33	0.12	0.17	0.08	0.10	0.19	0.20	0.25	0.30	0.34	0.39					
2003	2.62	9.30	587	0.22	0.11	0.13	0.11	0.12	0.19	0.23	0.22	0.22	0.33	0.35	0.48				
2004	4.28	8.96	570	0.24	0.12	0.13	0.11	0.15	0.15	0.19	0.17	0.17	0.22	0.26	0.38	0.66			
2005	4.62	9.45	546	0.28	0.11	0.13	0.09	0.14	0.20	0.13	0.17	0.15	0.21	0.23	0.31	0.56	0.65		
2006	8.76	11.31	164	0.25	0.09	0.09	0.10	0.13	0.10	0.11	0.10	0.09	0.16	0.12	0.15	0.21	0.30	0.35	
TOTAL	2.40	10.33	8,039																

Parameters	Estimate	SE	Confidence interval
<i>Firm</i>			
α_{10}	-0.34	0.40	(-1.12-0.44)
β_{11}	0.49***	0.03	(0.44-0.54)
Vp_{icf}	2.00	0.20	(1.65-2.42)
$V\tau_{icf}^a$	0.20/5.62	0.01	(0.17-0.23)
Vu	7.46	0.07	(7.32-7.58)
<i>Industry-country</i>			
Vp_{ic}	0.86	0.25	(0.48-1.5)
$V\tau_{ic}^a$	0.15/4.26	0.03	(0.1-0.21)
<i>Industry</i>			
Vp_i	0.70	0.28	(0.31-1.53)
$V\tau_i^a$	0.00/0.00	0.00	(0-118.37)
<i>Country</i>			
Vp_c	0.65	0.30	(0.26-1.59)

Notes: Log-likelihood: -27.977; Wald χ^2 : 339, $p > 0 = 0.00$; these are 95 per cent confidence intervals, truncated at zero in the case of SD estimates; **** $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; ^a in the $V\tau$ estimations, the left variation around the β_{11} , while the right value indicates the total variation of the transitory component

Table III.
Estimates for permanent
and transitory
components and variance
decomposition: nesting
industry first and then
country

Variance component	Permanent (%)	Temporary (%)	Unexplained (%)	Total (%)
Company	3.62	28.47	50.09	82.19
Industry-country	0.66	16.33		16.99
Industry	0.43	0.01		0.44
Country	0.38	n/a		0.38
Total	5.10	44.80	50.09	100.00

Table IV.
Estimates for permanent
and transitory
components and variance
decomposition: results as
percentage of the total
variance

accept $H3a$, the country-industry effect on the permanent component is significant and larger than the country and industry effect considered independently. Firm-specific factors are the most significant in explaining the permanent differences of abnormal returns.

The autoregressive coefficient, β_{11} , present values of 0.48-0.49 and all standard deviations of the permanent and transitory components at all levels (firm, industry, industry-country and country) are significantly different from zero. The estimates of the autoregressive coefficient, β_{11} , indicates that 50 per cent of ROA at $t-1$ sustains in ROA at t ; therefore, there is no perfect convergence toward the mean. In principle, this value is higher than results for emerging economies obtained by Glen *et al.* (2003) that ranged between 0.01 and 0.42, but similar to values obtained for India (Chacar and Vissa, 2005; Kambhampati, 1995). Actually, our results are similar to values obtained in developed economies that mostly range from 0.45 to 0.55 as shown in Table VIII.

Analyzing the variance decomposition of the transitory component in Tables V-VII, we observe that the firm-specific effect is the most significant (27-28 per cent), followed

Parameters	Estimate	SE	Confidence interval
<i>Firm</i>			
α_{10}	-0.37	0.40	(-1.14-0.41)
β_{11}	0.48***	0.05	(0.38-0.58)
Vp_{icf}	1.99	0.20	(1.64-2.41)
$V\tau_{icf}^a$	0.20/5.52	0.01	(0.17-0.23)
Vu	7.46	0.07	(7.33-7.59)
<i>Country-industry</i>			
Vp_{ic}	0.86	0.25	(0.49-1.5)
$V\tau_{ic}^a$	0.12/3.40	0.02	(0.08-0.18)
<i>Country</i>			
Vp_c	0.64	0.30	(0.25-1.6)
$V\tau_c^a$	0.10/2.78	0.04	(0.04-0.23)
<i>Industry</i>			
Vp_i	0.71	0.28	(0.32-1.53)

Notes: Log-likelihood: -27973; Wald χ^2 : 88; these are 95 per cent confidence intervals, truncated at zero in the case of SD estimates; **** $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; ^aIn the $V\tau$ estimations the left variation around the β_{11} , while the right value indicates the total variation of the transitory component

Table V.
Estimates for permanent and transitory components and variance decomposition: nesting country first and then industry

Variance component	Permanent (%)	Temporary (%)	Unexplained (%)	Total (%)
Company	3.57	27.47	50.12	81.16
Country-industry	0.67	10.40		11.06
Industry	0.45	n/a		0.45
Country	0.37	6.96		7.33
Total	5.06	44.82	50.12	100.00

Table VI.
Estimates for permanent and transitory components and variance decomposition: results as percentage of the total variance

by the industry-country effect (10 to 16 per cent) and then the country effect (7 per cent) when nesting first at the country level. The industry effect, considered independently, is almost negligible. These results confirm *H2* and *H3b*. Country effects are important, but mostly transitory, and the country and industry interactions are significant explaining PH and should not be considered only independently. In the short term, it may be harder to isolate macroeconomic, political and institutional national characteristics from purely industry effects (i.e. to isolate industry characteristics from country characteristics). In other words, country matters because industry matters and vice versa.

Table VII shows results by country. All autoregressive coefficients, β_{11} , and all standard deviations of the permanent and transitory components at the firm and industry levels are significantly different from zero. Therefore, evidence exists of permanent and transitory differences among firms' profits in all countries, although the transitory component is significantly more important across countries. The autoregressive coefficients, β_{11} , range from 0.28 to 0.63. Argentina presents the smallest value (0.26), followed by Mexico and Brazil (0.45 and 0.46, respectively), Peru and Chile present the largest values (0.60 and 0.63, respectively). Argentina's

Parameters	Argentina			Brazil			Chile					
	Estimate	SE	Confidence interval	Estimate	SE	Confidence interval	Estimate	SE	Confidence interval			
<i>Firm</i>												
α_{10}	0.08	0.64	(-1.17-1.33)	-1.18	0.35	(-1.85-0.5)	0.36	0.37	(-0.36-1.09)			
B_{11}	0.28***	0.07	(0.13-0.42)	0.46**	0.04	(0.37-0.55)	0.63***	0.04	(0.54-0.7)			
$V_{p_{ref}}$	3.46	0.64	(2.4-4.98)	2.48	0.29	(1.97-3.12)	1.62	0.48	(0.9-2.91)			
$V_{T_{ref}}$	0.24/0.73	0.07	(0.13-0.43)	0.21/12.51	0.02	(0.17-0.25)	0.21/15.79	0.02	(0.16-0.26)			
V_u	8.36	0.28	(7.82-8.92)	7.97	0.11	(7.75-8.18)	6.48	0.12	(6.23-6.72)			
<i>Industry</i>												
$V > p_i$	0.64	1.83	(0-181.72)	0.87	0.34	(0.4-1.85)	0.97	0.45	(0.38-2.4)			
V_{T_i}	0.15/11.31	0.09	(0.04-0.48)	0.12/7.29	0.04	(0.06-0.25)	0.09/6.68	0.04	(0.03-0.22)			
			Log-likelihood: -1999			Log-likelihood: -11651			Log-likelihood: -6141			
			Wald Chi2: 14			Wald Chi2: 107			Wald Chi2: 245			
			$p > 0 = 0$			$p > 0 = 0$			$p > 0 = 0$			
<i>Results as percentage of the total variance</i>												
	Permanent	Temporary	Unexplained	Total	Permanent	Temporary	Unexplained	Total	Permanent	Temporary	Unexplained	Total
Firm (%)	5.74	43.94	33.39	83.08	2.20	55.90	22.67	80.77	0.78	73.43	12.36	86.56
Industry (%)	0.19	16.73	0.00	16.92	0.27	18.96	0.00	19.23	0.28	13.16	0.00	13.44
Total (%)	5.93	60.67	33.39	100.00	2.47	74.86	22.67	100.00	1.05	86.59	12.36	100.00
												(continued)

Table VII.
Permanent and transitory
components and variance
decomposition by country

Table VII.

Parameters	Mexico		Peru		Confidence interval
	Estimate	SE	Estimate	SE	
<i>Firm</i>					
α_{10}	0.08	0.48	-0.02	0.40	(-0.8-0.76)
β_{11}	0.45****	0.05	0.60	0.06*	(0.48-0.72)
Vp_{ief}	2.66	0.53	0.04	0.10	(0-4.43)
$V\tau_{ief}$	0.21/12.21	0.04	0.18	0.04/9.87	(0.11-0.28)
Vu	7.05	0.16	6.72	0.18	(6.38-7.07)
<i>Industry</i>					
$V > p_i$	1.01	0.54	1.01	0.32	(0.54-1.87)
$V\pi$	0.10/5.69	0.06	0.14	0.06/7.92	(0.06-0.32)
	Log-likelihood: -4415			Log-likelihood: -3624	
	Wald Chi2:86			Wald Chi2:96	$p > 0 = 0$
<i>Results as percentage of the total variance</i>					
	Permanent	Temporary	Unexplained	Total	
Firm (%)	2.99	61.94	20.98	85.90	69.09
Industry (%)	0.43	13.67	0.00	14.10	30.91
Total (%)	3.42	75.61	20.98	100.00	100.00
			Unexplained	Temporary	Unexplained
			21.89	47.20	21.89
			0.00	30.42	0.00
			21.89	77.62	21.89

Notes: These are 95 per cent confidence intervals, truncated at zero in the case of SD. estimates; **** $p < 0.01$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; in the $V\tau$ estimations, the left variation around the β_{11} , while the right value indicates the total

Country	Study	Year	Sample period	Number of firms	Number of years	Sample mean persistence
<i>Developed countries</i>						
Canada	Khemani and Shapiro	1990	1964-1982	189	19	0.43
France	Geroski and Jacquemin	1988	1965-1982	55	18	0.41
France	Jenny and Weber	1990	1965-1982	450	18	0.37
Germany	Geroski and Jacquemin	1988	1961-1981	28	21	0.41
Germany	Schohl	1990	1961-1981	283	21	0.51
Germany	Schwalbach, Graßhoff and Mahmood	1989	1961-1982	299	22	0.49
Japan	Maruyama and Odagiri	2002	1964-1997	357	34	0.54
Japan	Odagiri and Yamawaki	1986	1964-1982	376	19	0.47
Japan	Yamawaki	1989	1964-1982	376	19	0.49
Spain	Boun and Satorra	2007	1995-1900	5,000	6	0.64
UK	Cubbins and Geroski	1990	1948-1977	239	30	0.48
UK	Geroski and Jacquemin	1988	1947-1977	51	29	0.49
UK	Goddard and Wilson	1999	1972-1991	335	20	0.45
USA	Chacar and Vissa	2005	1989-1999	4,562	11	0.39
USA	Choi and Wang	2009	1991-1901	518	11	0.55
USA	Jacobson and Hansen	2001	1988-1992	1,039	5	0.37
USA	McGahan and Porter	1999	1981-1994	4,488	14	0.54
USA	Mueller	1990	1950-1972	551	23	0.18
USA	Waring	1996	1970-1989	12,986	Max. of 20	0.54
USA	Yamawaki	1989	1964-1982	413	19	0.48
<i>Emerging economies</i>						
Brazil	Glen, Lee and Singh	2003	1985-1995	56	11	0.01
India	Chacar and Vissa	2005	1989-1999	4,325	11	0.50
India	Chari and David	2011	1991-1907	5,492	17	0.41
India	Glen, Lee and Singh	2003	1982-1992	40	11	0.23
India	Khambhampati	1995	1970-1985	42 industries	16	0.48
Jordan	Glen, Lee and Singh	2003	1980-1994	17	15	0.35
Korea	Glen, Lee and Singh	2003	1980-1994	82	15	0.32
Malaysia	Glen, Lee and Singh	2003	1983-1994	62	12	0.35
Mexico	Glen, Lee and Singh	2003	1984-1994	39	11	0.22
South Korea	Glen, Lee and Singh	2003	1980-1994	82	15	0.32
Turkey	Yurtoglu	2004	1985-1998	172	14	0.38
Zimbabwe	Glen, Lee and Singh	2003	1980-1994	40	15	0.42

Table VIII.
Persistence of abnormal
returns for several
countries

value is similar to those obtained by *Glen et al. (2003)* for emerging economies, whereas the other countries present values similar to those obtained for developed economies and somewhat higher than values previously observed in emerging economies. For Brazil and Mexico specifically, the only Latin American countries studied by *Glen et al. (2003)*, values are significantly larger than those obtained previously (0.01 and 0.22, respectively). *Table VIII* summarizes previous results.

It is interesting to note how the industry effect changes by country: relatively close to the firm-specific effect in Peru, followed by Argentina and Brazil and, finally, Chile and Mexico, which present the relatively smaller industry effect. These results confirm that

location matters, and industry and country effects are closely interrelated. Once again, the firm is the most important source of PH in all countries on both the permanent and the transitory component.

Discussion and conclusions

Using a sample of Latin American firms, we simultaneously estimate the role of firm-specific, industry, country and country–industry effects on permanent and transitory components of abnormal returns. Given the dynamic nature of business conditions in emerging economies, it is important to distinguish between temporary and transitory effects on performance. Results indicate that PH in firms competing in emerging economies is possible and that performance differences tend to persist over time; however, most differences are transitory. The firm-specific effect is the most important in explaining PH at the permanent and transitory component, followed by the industry–country effect, which is significantly larger than country and industry effects considered independently, especially at the transitory component. The country effect is third, but only important at the transitory component. Location effects, country and country–industry have a significant and large impact on PH; however, most are transitory instead of permanent, a distinction that previous studies did not observe. These results have several implications.

First, these results are surprising, given the strong emphasis usually placed on country conditions and business environment in emerging economies. Even when the business environment of emerging economies is considered constraining and sometimes even hostile on business development, the effects on abnormal performance are mostly temporary. This has significant consequences for firms that may feel nervous about committing significant efforts and assets in emerging economies. Firms that understand the transitory effects and know how to manage the overstressed cycles are able to adapt their business models, develop resilience to downturns and even commit more resources during downturns, increasing their competitive advantages compared to firms that prefer to reduce commitment to a minimum, probably thinking that changes may be permanent.

Second, another implication is the relatively important impact of country–industry effects on PH, which exceed industry and country effects considered independently. These results are larger than those of Makino *et al.* (2004). Therefore, location is important explaining PH; nevertheless, any analysis of country conditions is incomplete if interactions between country and industry conditions are not considered. Industry comparative advantages across countries are significant in explaining international business performance. These findings may also indicate evidence for the argument that because most industries are not global, they are not perfectly independent from country conditions (Ghemawat, 2003, 2007). In fact, they may be deeply interrelated in a cluster, with dynamic interrelations that are responsible for industry–country competitiveness (Porter, 1990). The impact of industrial policy, policy-created industry-specific competitive advantages and national institutional asymmetric effects on different industries have been overlooked in emerging economies.

Results for individual countries also reflect industry–country importance, showing very different industry effects relative to the firm-specific effect in each country. The industry effect is relatively larger in Peru, followed by Argentina and Brazil. Chile and Mexico present the relatively smallest industry effects in the sample. A large proportion

of Peru's sample of companies belongs to the mining and the food and beverage industries, which are typically highly local. Mining depends heavily not only on natural resources but also on institutional setting that concern major industry- and location-specific investments and high uncertainties typical of this industry. Food and beverages also depend on local resources conditions and on local taste and preferences. Argentina and Brazil are more diversified in terms of industries, but are also the most active in industrial policy and closed to the global economy. On the other hand, Chile and Mexico are the most open and integrated with the global economy. We may infer that firms in these two countries are ahead in the process of integration and globalization relative to firms in other countries, which may drive a less significant local industry effect.

Third, it is difficult to generalize about persistence in emerging economies and the country location matters defining persistence of abnormal returns. On average, 50 per cent of abnormal returns persist from 1 year to the next and completely vanish in 5 to 6 years. However, persistence values, which range from 0.26 to 0.63, vary significantly by country. Although all countries in our sample are from Latin America, there is enough variation in their intrinsic economic and institutional characteristics to explain permanent as well as transitory differences in performance. This emphasizes the risk of making broad generalizations about countries in a region or even broader generalizations about emerging economies.

Fourth, the dynamic nature of emerging economies should not be underestimated. Persistence also seem to vary by time because our results are significantly larger than those obtained by [Glen *et al.* \(2003\)](#) for emerging economies in general and for Brazil and Mexico, particularly. Results suggest that persistence increases over time. For example, in the case of Brazil, the β autoregressive coefficient value increased from 0.01 in the period 1985-1995 to 0.46 in 1991-2006. Mexico's β value increased from 0.22 in 1984-1994 to 0.45 in 1991-2006. A possible explanation for these longitudinal discrepancies in performance is the structural changes in macroeconomic conditions and the institutional setting of the 1990s. First, changes resulted in significant improvements in pro-market and financial conditions that promoted infrastructure improvements, investment and acquisition of new technology and innovation, which are positive influences in sustainability. Second, another difference between the 1980s and the following decades are significant improvements in economic growth, which is positively correlated to firms' abnormal returns persistence ([Kambhampati, 1995](#); [Gschwandtner, 2005](#)) Additionally, [Domowitz *et al.* \(1986\)](#) report that the industry concentration positive effect on firm abnormal profit margins is procyclical, increasing during economic expansion phases.

Contrary to our results, [Chari and David \(2011\)](#) found that pro-market institutional development in India has a negative effect on persistence, however, that effect may be reduced by increased expenditure on R&D and advertising. We suppose that structural reforms in Latin America may encourage significant investment and innovation, which may overwhelm the forces of new entrants, imitation and erosion and homogenization of returns. However, it may also be argued that reforms in Latin America may have not encouraged competition as much as in other emerging economies. A better understanding of these elements may emerge by analyzing longer periods using a methodology that allow us to identify and measure longitudinal structural changes.

Firm-specific effects are the most important at both the permanent and transitory component; therefore, even in the particular context of emerging economies, firms' unique resources and capabilities are the most important elements explaining firm performance differences. Of course, this is not to say that underdeveloped human and capital resources, markets' failures, institutional voids and macroeconomic volatility do not affect or limit business performance. A plausible explanation is that companies develop temporary but also long-term differentiated capabilities to deal with these context elements.

The study has several limitations. The widely used autoregressive methodology allows for easy comparisons, but is also limited because it does not accommodate cyclical patterns nor account for trends or structural changes (Cable and Gschwandtner, 2008). Cyclical patterns are not exclusive of macroeconomic and political environment; industries and firms present structural changes and cyclical patterns. Our results seem to support the existence of significant structural changes during the 1990s and 2000s. Future research may consider methods to identify and analyze cyclical patterns and structural changes of abnormal returns and the mechanisms explaining them.

The companies in our sample are large corporations, as small and medium enterprises (SMEs) are not usually public companies in Latin America. Therefore, we apply caution when extending our results to SMEs. An interesting extension of this research would be to apply this study to SMEs in emerging economies because they face the same adverse environment as large firms, but cannot follow the same practices to protect themselves from institutional and macroeconomic instability. We also acknowledge that our results, which are deeply embedded in the Latin American context, provide a valid starting point to understand the dynamic behavior of abnormal returns for firms competing in emerging economies, but may not necessarily apply to other emerging regions, such as Asia, transitional Eastern European economies and Africa. Additional research in these regions should deepen our understanding of the causes and dynamics of abnormal returns in emerging economies.

Despite these limitations, we think that this study sheds important light on our understanding of the dynamics of abnormal returns in emerging economies. Our results stress the need for further research on structural long-term changes and their specific impact on firms' characteristics and sustainability of returns. We advocate more emphasis on country–industry cluster interactions and interactions between the institutional and economic setting and firms' actions. Future research should expand the sample to include not only other emerging economies but also developed economies and establish formal tests of similarities and differences.

Note

1. McGahan and Victor (2010) make a similar estimation in a worldwide sample, but their focus is only on the permanent component and uses the temporary component as an adjustment. Bou and Satorra (2010) applied the same methodology to 15 European Union countries.

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