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THE HOME COUNTRY IN THE AGE OF GLOBALIZATION: HOW MUCH DOES IT MATTER FOR FIRM PERFORMANCE?

by
G. HAWAWINI
V. SUBRAMANIAN
P. VERDIN

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Gabriel Hawawini
INSEAD, Boulevard de Constance
77305 Fontainebleau Cedex, France
Tel: 33-1-60712622 Fax: 33-1-60712620; E-mail: gabriel.hawawini@insead.fr

Venkat Subramanian
Solvay Business School, Université Libre de Bruxelles,
Avenue F. D. Roosevelt 21, CP 145, B-1050 Brussels, Belgium
Tel: 32-2-6504842; Fax: 32-2-650 4147; E-mail: vsubrama@ulb.ac.be

Paul Verdin
KU Leuven & Solvay Business School
Naamsestraat 69, B-3000 Leuven, Belgium
Tel: 32-16-326755; Fax: 32-16-326778; E-Mail: paul.verdin@econ.kuleuven.ac.be

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ABSTRACT

The globalization process has created considerable speculation on the impact of the home country environment to a firm's competitive advantage in international markets. Using a random effects model that is partly induced from the concept of comparative advantage and partly following the descriptive modeling of performance determinants, this paper explores the quantitative impact of home country environment on the performance for firms across 6 countries. The paper uses two value based, i.e. risk adjusted and cash-flow based, measures of firm performance. The results indicate that the importance of country factors is low and firm-specific factors dominate performance across and within countries. The results also show that global industry effects are increasingly more important than country effects.

Key Words: *Globalization, Country, Performance*

INTRODUCTION

In the last decades, globalization has become a predominant theme in the world economy. One persistent claim is that managers need to frame strategies regarding competition, capabilities and customers that are not constrained by geographical boundaries (Levitt, 1983; Ohmae, 1991). The implication is that the firm's national origin, in an increasingly globalized economy, will have less relevance as a source of competitive advantage. However, past research on sources of competitive advantage has been largely silent on the effect of country factors. The focus was instead on the traditional industry versus firm emphasis of strategy formulation, which is surprising given the fact that internationalization has been the main strategic concern for firms in the 1990s. While there are specific theoretical basis for the firm versus industry debate (to be discussed later), no single theory is usually sufficient to model the impact of home country effects. Studies of home country effects are found in international business, international economics and finance, and each of them contribute to the development of a model of the home country impact.

This study investigates the impact of home country effects on firm performance. For the purposes of this study, a firm's home country is where its stock is traded.[1] Our approach will be to examine the home country effect in two ways. Firstly, we analyze the country effect in an indirect way by estimating the relative importance of industry and firm factors across countries. We do not make assumptions about the degree of economic integration.

[1] Some might argue that this distorts reality because firms are known to list their equity in a foreign stock exchange. There are some well-known examples of European firms listing on NYSE and Nasdaq. We see, however, that this is fundamentally a recent trend. Further, most firms are invariably listed on their domestic

Any systematic variation across countries would imply the presence of country specific factors that is the outcome of varying industry structures and differential influence of country on firm capabilities. Secondly, we test specifically for the presence of country effects, in addition to other external influences such as global and industry factors, on performance. Pooling the different countries together tests the home country effects under conditions of integrated markets.

The paper builds a model of performance determinants that includes country-effects. To understand the impact of home country factors, the paper discusses the evidence from international economics, investment finance business, and strategic management. The evidence from international economics is that strong home country bias persists in terms of demand and capital costs. While this evidence implies a generic country factor, the international trade theories imply that firms that operate in industries based in particular countries may have competitive advantages over its international rivals. We complement this model by including other factors that underpin competitive advantage – global, industry, firm effects.

LITERATURE OVERVIEW

Given the rapid growth in international trade and increased capital flows, a key question is whether home country factors still influence the conduct and performance of firms. Here we review the evidence from both the economy level and firm level perspective.

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stock exchange as well and we would suspect that the proportion of firms listed in foreign countries is

The macro-evidence

A large number of research works in the field of international economics and finance point to some persistent effects of home country in economic life. Even though international trade had consistently grown over the past decades by doubling in the 1980s and again in the 1990s, the evidence in international economics is that strong home country bias persists in at least three aspects: the home-country bias in 'internal' trade, the home country bias in 'internal' financing, and the home country bias in 'internal' equity investment. [2] We look at them in turn.

There is growing recognition that, despite the growth in international trade, international goods markets appear to be less integrated than is generally supposed. This was first demonstrated by McCallum (1995), who found that trade among individual Canadian provinces was about twenty times greater than that between an individual Canadian province and a US state of similar distance and economic size. The findings were based on a data set from 1988, when the US-Canada free trade agreement was still at its infancy. Subsequent studies (Helliwell, 1998) have found this home bias in trade to be around 12, which is still a high number. Another recent paper (Chen, 2000) shows that despite the single market and overall integration process of the European Union (EU), trade within an EU country can range between 2.1 times to 3.6 times than with another EU country. Overall, there seems to be considerable home bias in trade, though the initial high estimate of McCallum has steadily decreased over time. Some explanations to this bias in trade are exchange rate risks, tariffs, non-tariff barriers, transportation costs, and high

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relatively small.

elasticity of substitution in consumption (Obstfeld & Rogoff, 2000). Other reasons include the segmentation of customer demand due to cultural differences.

The second bias is the famous saving-investment phenomenon first identified in Feldstein and Horioka (1980). Feldstein and Horioka demonstrated that across OECD countries, the average national saving rates over long periods are highly correlated with the averages of domestic investments. Later studies (Obstfeld and Rogoff, 2000) have found that, even though decreasing over time, this correlation remains strong, which is a surprising result in a world of integrated capital markets.[3] For many OECD countries current accounts tend to be relatively small as a percentage of savings and investment. In essence, this means that domestic investment is financed chiefly by domestic savings and capital does not always seem to cross boundaries to seek the best returns. The reasons are that cross-border investments entail many of the similar risks and costs that come with cross-border trade for consumption.

The third bias is the well-known effect of home country on the equity portfolios of investors. French and Poterba (1991) demonstrated that US citizens held 94% of their equity investments in US stocks and in the case of Japan, this figures reaches to 98%. In a world where restrictions to the movement of capital have been steadily falling and with an expanded market for stocks, investors' preference to hold domestic stocks is puzzling. Finance theory argues that rational investors could diversify their portfolios internationally to drive down unsystematic risk. Recent studies indicate that this equity

[2] IMF Statistics.

bias is lower for smaller countries (markets that usually lack depth and breadth of stocks), and has shown the tendency to decrease over time. By the mid-1990s, US investors held approximately 10% of their equity holdings in foreign stocks.[4]

The home bias may not only influence domestically oriented firms. Even multinational corporations, traditionally the most internationally oriented firms, employ two-thirds of their workforce, produce two-thirds of their output and sell two-thirds of this output in their home country.[5]

The firm-level evidence

The evidence presented above relates to the impact of the home country at the aggregate economy level. Evidence on the firm-level impact of home country is more widespread in investment finance. Such studies examine the *relative* impact of country specific *risks* on global equity portfolios. Early studies (Lessard 1974, 1976; Solnik, 1974; Beckers, Connor and Curds, 1986; Solnik and de Freitas, 1988) that examined the impact of global, national and industry factors on individual stock returns found that national factors dominate the explained variance in stock returns. The conclusion was that diversification across countries provides greater risk reduction possibilities than diversification across industries.[6]

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[3] See Coakley, Kulasi, and Smith (1998) for a survey.
[4] For a recent review, see Lewis (1999).
[5] UNCTAD; Morgan Stanley Capital International World Index statistics.
[6] Other more recent studies that used data from the 1980s came to the same conclusions (Drummen and Zimmermann, 1992)

Recent studies (Cavaglia, Brightman and Aked, 2000; Diermeier and Solnik, 2000) have however pointed out towards the increasing importance of industry factors at the expense of country factors. Freiman (1998) demonstrate that the correlation among European stock indices has increased in the 1990s and the importance of industry factors has increased over time for European stocks. It is important to note that the emphasis of the finance studies is to explain volatility in stock price and identify factors around which risk reduction (and portfolio diversification) strategies can be organized.

In short, the macro-evidence suggests that the home country factors may influence firm performance due to the home bias in demand and capital costs. Both the macro- and firm-level evidence indicates that home country effects on performance, while still may be large, have been decreasing over time.

MODELING PERFORMANCE DETERMINANTS

In strategic management research, several studies have modeled the determinants of firm performance using a descriptive approach (Rumelt, 1991; McGahan and Porter, 1997). The key variables of interest were the relative importance of industry and the firm-specific factors for performance. The theoretical motivation for these two key variables is based on the debate within strategic management on the relative importance of industry versus firm. The industrial organization view, based on the structure-conduct-performance paradigm (Bain, 1956), argues that industry structure is the key driver of firm profitability and firm strategy and resources have to considered against the structural forces of the industry (Porter, 1980). The resource-based view takes an opposite

perspective that idiosyncratic firm-specific factors instead are the sources of superior performance and industry structure can be influenced to the firm's advantage (Wernerfelt, 1984; Barney, 1986, 1991). One feature of the empirical studies in this stream of research is that the evidence is primarily based on US data sets and has not been rigorously tested across countries using comparable data sets.

In this study we examine the country effect through two types of models. Firstly, the industry and firm factors are estimated across the sample countries using the existing models (for example Rumelt, 1991; McGahan and Porter, 1997; Brush, Bromiley and Hendrickx, 1999). Roll (1992) and Heston and Rouwenhorst (1994) find that differences in industry structures across countries have an influence on firm profitability. Systematic differences between industry and firm effects across countries would imply that significant country differences exist. The advantage of this estimation is that we need not make assumptions about the degree of integration of national economies. Further, it also provides a test for the generalizability of the industry and firm effects evidence across countries. However, the disadvantage is that we do not get a quantitative estimation of the country effect on firm performance.

We derive a model to estimate the country effects from the initial industry versus firm model used in strategic management research. The evidence presented earlier indicates that there is more than a single theoretical dimension to understanding the home-country impact on firm profitability. The macro-level evidence implies a home bias in demand and capital costs, which may be reflected in the strong country factor evidenced in the

finance studies. Still, different types of issues characterize the economy-wide evidence and the firm-level evidence. In the case of the former, models induced from theories of international capital and goods movements serve as the basis for the evidence. An important disadvantage is that the emphasis is on the macro-level impact of the home bias, and does not shed light on the impact on firm profitability. The variables used in the finance studies, which examines the firm-level evidence of home country effects, are usually silent on the underlying theory.

A key question is what are sources of inter-country differences that have relevance for firm profitability. Two issues were recognized from the examination of the evidence earlier. The macro-level research suggests that country factors can influence firm profitability, due to the home-bias in demand and capital sources (and costs). Differences in size of the national economies would then be a factor that contributes to firm performance, and hence strategies.

A number of other differences exist in terms of economic, legal and social systems. Countries are in different stages of economic development, they have different interest rate, exchange rate and tax policies, and different legal systems. The two country-oriented factors that have attracted attention in international business research are cultural differences and increasingly corporate governance systems.

Cultural differences may exist with regards to how employees perceive and react to power, uncertainity, collectivism and gender relations (Hofstede, 1980). Differences in

national value systems may explain differences in organizational systems across countries (Hofstede, 1985). The success of Japanese firms in the early 1990s was partly attributed to cultural reasons – the traditional focus on long-term profitability, consensus based decision making, a desire for perfection, among others (Womack, Jones and Roos, 1991). There is a large literature on the impact of culture on firm choices – for instance choice of partners in joint ventures (Shan and Hamilton, 1991; Barkema and Vermeulen,1997), choice of foreign entry mode and ownership patterns (Kogut and Singh, 1988, Erramilli, 1996).

A second factor that is finding growing attention are differences in corporate governance regimes across countries (Leighton and Garven, 1996). These differences relate to the structure of financial systems and the role of banks, financial regulation, the ownership and control of firms. For instance, there are high levels of ownership concentration in Europe and Far East but not in the UK and US, close relations between banks and firms exist in some countries and not others (Franks and Mayer, 1994). Corporate governance systems may motivate different types of managerial behavior and hence agency costs (Gedajlovic and Shapiro, 1998).

The general contextual factors of a country's environment such as its culture, values, institutions, history and economic and legal structures influence the behavior and the strategies of all firms. Another country-specific factor that can influence firm performance is when country-business cycles are not correlated. Several financial economists have noted that business cycles among countries are not perfectly correlated

(for instance, see Lessard, 1976; Roll, 1992). A temporal impact of country factors may also be accompanied by sharp exchange rate movements – currency depreciation may lead to lower relative costs and make the home firms more competitive in international markets.

International trade theories indicate a third type of country effect – the impact of the firm operating in an industry in which the country has a comparative advantage. Even though a nation's context influences all firms, international trade theories (for instance, the Heckscher-Ohlin models of resources and trade (Krugman and Obstfeld, 1997) argue that the impact of country factors varies from industry to industry. Economic structures of countries also tend to differ as countries specialize in industries that are best suited to their national contexts. The focus is on why particular countries and their firms do well in particular industries and the explanations are usually based on differences in factor endowments and their relative scarcities and prices between countries. These generalities have been extended to include the size of the home market and the propensity of the market to accept new and innovative products (Krugman, 1980).

Porter (1990) extends the concept of comparative advantage by including other factors that determine the nation's competitiveness in a particular industry. Four broad attributes of a nation are considered in this framework – the factor conditions, demand conditions, related and support industries and firm strategy, structure and rivalry. The joint effect of these factors leads to the creation of particular industries in which the nation possesses a competitive advantage. A basic objective of this approach is to provide reasons for the

divergence in the competitive strengths of firms within the same industry, but based in different countries.

Three types of country effects on firm performance can then be induced from the above analysis: a general country factor, a country-year (economic cycle) factor, and a country-industry (comparative advantage) factor. The models of performance determinants in strategic management complement the country variables with industry and firm factors, thereby leading to a richer model that has a theoretical basis.

MODEL AND METHODOLOGY

We extend the descriptive model seen in Schmalensee, 1985; Rumelt, 1991; McGahan and Porter, 1997 and Hawawini, Subramanian and Verdin, 2000 to examine the effects of home country on firm performance. These models specify for four major sources of variation in performance consisting of stable and transient effects of a firm's industry, the firm's competencies, and the effects of the particular year for all firms.[7] Following the arguments outlined earlier on the influence of home country on a firm's competitive success, we extend the performance determinants models of strategic management (Schmalensee, 1985, Rumelt, 1991, McGahan and Porter, 1997 and Hawawini et el., 2000) by including three types of country effects - a stable and time-invariant country effect, a time-variant country effect and a country-industry interaction effect.

[7] Obviously, as these were one-country models, the year effect is a common effect for all firms in a given country for a particular year. In a cross-country model (of the type of this study), such a factor would reflect the global effect of the year for all firms in *all* the countries under study.

Our research model then specifies for seven sources of variation in business returns: country factors, industry-specific effects, country-industry factor, a year factor, country-year factor, industry-year factor and firm-specific effects. Country-specific influences include factors that impact all firms in a country such as a country's economic structure, institutional and legal framework, infrastructure, social networks and culture. The transient country effect measures the impact of business cycles that are not correlated among countries and affect only certain countries and not others. Stable industry effects reflect the influence of structural characteristics of industries on the performance of firms while the transient component of industry effects, i.e. industry-year factor, measures the sensitivity of profitability to the impact of business cycles on the industry. The country-industry factor represents the comparative advantage effect on firms. The impact of factors with broader economic significance is captured by the year effect. This effect also represents the impact of a global factor that is common to all firms across the countries. Finally, firm effects comprise all firm-specific factors such as heterogeneity among firms in tangible and intangible assets due to differences in reputation, operational effectiveness, organizational processes and managerial skills.

We specify the following random effects model.

$$r_{kijt} = \mu_{....} + \alpha_k + \beta_i + \phi_j + \gamma_t + (\alpha\gamma)_{kt} + (\beta\gamma)_{it} + (\alpha\beta)_{ki} + \varepsilon_{kijt} \qquad (1)$$

where $\mu_{....}$ is a constant equal to the overall mean (the four dots indicate that it is an average over the k, i, j and t index); α_k is a random country effect, where k = 1 ... p denotes any one country as k; β_i is a random industry effect where i = 1...q denotes any one industry as i; ϕ_j is a random firm effect where j = 1...r denotes any one firm as j; γ_t is a random year effects where t denotes any one year as t; $(\alpha\gamma)_{kt}$, $(\beta\gamma)_{it}$, and $(\alpha\beta)_{ki}$[8] are random country-year, industry-year and country-industry interaction effects and ε_{kijt} is a random error term.

The main effects (α_k, β_i, ϕ_j and γ_t) and the interaction effects $(\alpha\gamma)_{kt}$, $(\beta\gamma)_{it}$, and $(\alpha\beta)_{ki}$ follow a normal random distribution with mean zero and variance σ^2_{α}, σ^2_{β}, σ^2_{φ}, σ^2_{γ}, $\sigma^2_{\alpha\gamma}$, $\sigma^2_{\beta\gamma}$ and $\sigma^2_{\alpha\beta}$, i.e. ε $(0, \sigma^2)$. The random independent effects specified in the above model are generated by random processes that are independent of each other, i.e. each of the main effects is an independent random solution from an underlying population that is normally-distributed. The advantage of such random modeling is that we can hypothesize on the presence and importance of each type of effect without being interested in particular levels of that effect, i.e. we are not interested in the impact of a particular country, say US or Germany, but are interested in the influence of country generally.

The above model is a tractable but necessarily a restricted representation of reality. We assume that industry effects are the same for all firms across the countries. It is not entirely unreasonable to argue that industry effects may differ across countries, say due to

[8] $(\alpha\gamma)_{kt}$ is not a product of two variables, α and γ. It simply indicates the interaction between two main

different capital-labor ratios and relative industry specialization. One notable conclusion of McGahan and Porter, (1997) (and that gets often overlooked) is that firms in service sectors seem to experience higher industry effects in comparison to a typical manufacturing firm. Partly due to this, we conduct a series of industry and firm effects estimation across the countries in our sample. A second implication is that the model assumes that global factors affect all firms equally. This means that FedEx and GM are equally affected by the two factors. This is somewhat unrealistic, since each company has a different exposure in terms of sales and assets globally. Similarly, we assume that the country factors impact all firms within the country equally, meaning that British Airways and Glaxo have the same exposure to the UK factor. The results of our study are hence conditioned to the extent our model sufficiently represents economic reality.

Random effects models, similar to this study's, are used in the studies that examine the relative impact of industry and firm effects (Schmalensee, 1985; Rumelt, 1991; McGahan and Porter, 1997; Hawawini et al., 2000). A few important differences exist between our model and those generally found in the finance literature that study country effects. Firstly, our model is more elaborate and contains some important effects that usually are excluded from the studies in finance. The interaction effects, year effects and firm effects are variables that could influence the dependent variable, but puzzlingly they have not got any consideration in the studies. This may be because the models used in finance attempt to describe the data, rather than base the model on theory.

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effects α and γ. The same applies to the other interaction terms.

Secondly, finance studies use regressions to estimate the independent effects. Some studies (Cavaglia et al, 2000; Diermeier and Solnik, 2000) use factor analysis techniques that are based on regression techniques. The appeal of the random modeling is particularly suited for studies of the current type – it does not need a data set that covers the whole population while allowing the results to be generalized. This is useful since constructing a data set that covers all countries, industries and firms would be unrealistic.

We use equation (1) to specify a variance components equation to estimate the contribution of the independent variables on the variability in the dependent variable. The variance components procedure used here is similar to the one employed in the studies of industry and firm effects (Schmalensee, 1985; Rumelt, 1991; McGahan and Porter, 1997; Hawawini et al., 2000). The equation for the estimation of variance components is developed by decomposing the total variance in the dependent variable (profitability measure) into its components (equation 1) as follows:

$$\sigma^2_r = \sigma^2_\alpha + \sigma^2_\beta + \sigma^2_\phi + \sigma^2_\gamma + \sigma^2_{\alpha\gamma} + \sigma^2_{\beta\gamma} + \sigma^2_{\alpha\beta} + \sigma^2_\varepsilon \qquad (2)$$

The dependent variable r_{kijt} in the above model has constant variance and is normally distributed because they are linear combinations of independent normal random variables. We use the VARCOMP procedure in SAS software to estimate the different variance components.

The disadvantage of the variance components estimation is that the procedure does not provide reliable tests for the significance of the independent effects. Since the independent effects are assumed to be generated by an independent random draw from an underlying population of the class of the effects, the null hypothesis that some of the variance parameters are zero lies on the boundary of the parameter space. This characteristic presents a non-standard problem for producing significance statistics.

One approach to solve this problem is to use nested ANOVA techniques that consider the effects to be fixed (Schmalensee (1985), Rumelt (1991) and McGahan and Porter (1997)). The ANOVA approach generates F-statistics for the presence of the independent effects. While the fixed effects transformation resolves the significance testing problem of the variance components procedure, it restricts the critical assumption of randomness of the independent effects. An important characteristic of the assumption of randomness is that results regarding both the presence and the importance of the various independent effects can be generalized over the population as a whole.

This study follows the random effects ANOVA model that is described in Hawawini et al. (2000). The random effects ANOVA model regards that all the independent effects specified in the model are generated by random processes, consistent with the variance components assumptions. The random ANOVA model departs from its fixed effect version only in the expected mean squares of the independent effects and the consequent test statistic.

Even though equation (2) directly estimates the relative impact of country factors, we also provide an indirect test for country effects. We test the relative levels of industry and firm effects (apart from other independent effects) for each country in our sample. Such tests give only an indication, but not an absolute estimate of the country effect. If the relative estimates of the effects will vary systematically across the countries, it would imply a country effect is important for explaining profitability differences between firms. The tests also control for the fact that industry structures and effects can vary across countries (which is not the case in equation 1).

The cross-country estimation of industry and firm effects also provides a test for the robustness of the findings of Rumelt (1991) and McGahan and Porter (1997) that report the domination of firm effects over industry factors. This conclusion of firm factors being dominant in performance is based on estimation of the effects using US data sets.

PERFORMANCE MEASURES

Past studies in strategic management on performance determinants (Schmalensee, 1985; Rumelt, 1991, McGahan and Porter, 1997; Roquebert, Phillips and Westfall, 1996; Mauri and Michels, 1997; Brush, Bromiley and Hendrickx, 1999) employ return on assets as performance measure. Accounting ratios do not measure cash flows, and returns are not adjusted for risk. Asset values may be quoted at historic cost and not at their true replacement values. The existence of different accounting policies and conventions, and management's power to choose between them, means that accounting measures may be obtained by alternative but equally acceptable methods in the legal sense.

In this paper, we will test for two value-based measures of firm performance as an alternative to the accounting-based ROA: Economic profit per dollar of capital employed and total market value per dollar of capital employed, where capital employed is the sum of equity capital and debt capital. [9] Both these measures reflect the concept of residual income, i.e. income that is adjusted for capital costs and hence risk and the time-value of money. These two measures then reflect *economic*, in contrast to accounting, performance. A second feature of these measures is that they are usually not bound by accounting conventions that tend to distort performance measures such as ROA and are adjusted for accounting distortions. Stewart (1991), Martin and Petty (2000) and Young and O'Byrne (2001) provide an overview of common adjustments that are made to financial statements to calculate these measures.

Economic Profit (EP) is a version of the residual income method that measures operating performance. Unlike traditional accounting measures such as ROA, the principal feature of this measure is that it reduces income by a charge for the cost of capital that is employed to produce the income. It is expressed as follows:

$$\mathbf{EP = NOPAT - WACC \times CE} \qquad \mathbf{(3)}$$

[9] See for example Young and O'Byrne (2001). Others use different names for the same concept of residual income – Copeland, Koller and Murrin (1990) call the difference between cash returns on invested capital and the capital charge the economic profit model. Also, see Rappaport (1986) for a similar model. The consultancy Stern Stewart has coined the terms Economic Value Added (EVA) and Market Value Added (MVA) to reflect residual income.

where NOPAT is Net Operating Profit After Tax, WACC is Weighted Average Cost of Capital and CE is Capital Employed.

Equation (1) can be rewritten as,

$$\mathbf{EP = (ROIC - WACC) \times CE} \qquad \mathbf{(4)}$$

where ROIC is Return On Invested Capital (i.e. NOPAT/CE).

Strategy is about sustainable value creation, which occurs when the firm's activities deliver a return on invested capital (ROIC) over time that exceeds its weighted average cost of capital (WACC). This return spread (ROIC – WACC) measures the ability of the firm to create value per dollar of capital employed (CE):

$$\mathbf{EP/CE = ROIC - WACC} \qquad \mathbf{(5)}$$

If ROIC is greater than WACC, economic profit per dollar of capital employed is positive and the firm creates value. The opposite is true when ROIC is smaller than WACC. In this last equation, EP is scaled for size and implicitly shows that the ability of the firm to add value, irrespective of size, depends on its ability to earn a positive return spread.

The second measure of value-based performance used in this paper is the firm's total market value (TMV) per dollar of capital employed, where TMV is the sum of the firm's

market capitalization (market value of equity) and the market value of its debt. This reflects the market's expectation of the firm's future economic profitability.

DATA AND SAMPLE

The data sets on EP, TMV and CE are sourced from the consulting firm Stern Stewart. This paper uses the data sets of three big open economies (US, UK, German) and three small open economies (Netherlands, Belgium and Luxembourg – Benelux countries). The Stern Stewart data are published yearly in *Fortune* and in business journals in Europe and Asia. In addition, the data is also published each year in the *Journal of Applied Corporate Finance*. The US data set is by far the largest containing information on 1000 listed companies for periods up to 21 years (1977-1997). For UK, the data set contains 500 listed companies covering a 9 year period (1989-1997), while the data sets for Germany and the Benelux countries contains 200 and 150 firms respectively for a 5 year period (1993-1997). Past studies of performance determinants, with the exception of Schmalensee (1985) and Rumelt (1991), usually use the Compustat data base. Our data set retains the advantage of the Compustat data by covering both manufacturing and service industries. Schmalensee (1985) and Rumelt (1991) use data from the Federal Trade Commission, which covers only manufacturing firms.

Stern Stewart calculates EP and TMV after making adjustments for major accounting distortions (see section 4) and the cost of capital. The companies are selected each year by

Stern Stewart based on their TMV performance and the top performers are listed for each country. Consequently, the data set has the disadvantage that it contains only the best performing companies and is possibly dominated by large companies. To some extent, we try to account for this bias by scaling EP and TMV for size by dividing both measures by the amount of capital a company employs.

We use the US Standard Industrial Classification system to classify the firms into industries across all the countries. Using a single system will mean that we will be able to make standardized definitions of industry. The SIC system is more detailed than the industry classifications used in the past studies in empirical finance and hence provides more homogeneous groups of firms. For instance, Rouwenhorst (1999) uses seven broad industry classifications.

One disadvantage is that data on these measures is available only at the corporate level. While a number of firms are active in multiple businesses, most of them tend to be diversified along related businesses (Villalonga, 2000). Past research has used the SIC system's 4-digit classification to categorize firms into industries. In this study, we choose the 3-digit level to account for the corporate nature of the data. We also exclude firms that are conglomerates such as GE (US), Hanson (UK).

Our choice of the SIC system leads to 57 industries for the US sample, 46 industries in the UK sample, 28 for the German sample and 27 industries in Benelux. The sample

covers the period 1993-1996. Information on the industry classification of European firms according to the SIC system is available from the Amadeus database.

For generating the sample, we screen the data in different ways. We dropped firms that did not contain a primary SIC designation or were identified by SIC as 'not elsewhere classified'. Further, firms with missing data for one or more years were discarded as well as firms that did not report their primary activity in the same industry over the sample period. The screened data set contains, on a country-by-country basis, 670 US firms, 412 UK firms, 137 German firms and 95 Benelux firms.

In the country-by-country sample, a firm is not included if it is the only firm in its industry for which data is available, as we cannot estimate its intra-industry variance in this case. In the overall combined sample, we include this firm if data is available for another firm in its industry (but from a different country). In the combined sample, we discard industries if data from only one country is available, as intra-country variance cannot be estimated in this industry. The combined sample has 1305 firm and contains 639, 416, 148 and 102 US, UK, German and Benelux firms respectively.

Tables 1 to 4 provide descriptive statistics for US, UK, Germany and Benelux countries respectively. The correlation between EP/CE and TMV/CE for each country sample and the combined sample are shown in table 5. We observe reasonably strong positive correlation (as high as 0.97 for Benelux firms). Only for the German sample, the correlation between EP/CE and TMV/CE is small and negative. For the overall sample,

the correlation is 0.61. Explanations for the differences in correlation between EP/CE and TMV/CE across countries could that continental European companies are perceived not to be value creators in the long-term, as most of the market value seems to be explained by current year operating performance.

EMPIRICAL RESULTS

Our first approach to seek the presence of country effects is to test firm, industry, year and industry-year effects across the sample countries. Tables 6 and 7 give the estimates and the percentages of the variance contributed by each independent variable. Firm factors explain most of the variance for the US and UK firms (an average of 55% and 43% respectively – see tables 7), while industry effects contribute much less for explaining performance variance. This also is evident from the results for German firms where industry effects are low and insignificant at the 5% level (4% of variance explained by industry variable) and firm effects are the important explanatory variable (15% on average - see table 7). Results for the Benelux sample are mostly insignificant at the 5% level, and the model's explanatory power is very low (an average of 4.3% of variance explained – see table 7).

We examine the results of the direct estimation of the country effects. Table 8 gives the variance components estimates of the independent variables that add up to the variation in the dependent variables (Economic Profit and Total Market Value, which are scaled for size – see section 4) for the combined sample and the proportions of variance in the dependent variable explained by each of the independent variable. Firm effects dominate

most of the explained variation, both for operating performance (EP/CE) and market performance (TMV/CE). Country factors contribute little for explaining performance (0.2% and 0.7% respectively for EP/CE and TMV/CE). The transient component of the country factor, i.e. the country-year interaction effect, is almost zero (0.1% for EP/CE and 0.0 for TMV/CE). The country-industry interaction effect is also small, but twice higher for EP/CE than for TMV/CE (2.2 % versus 1.1 %).

Industry effects explain 0.1% and 4.1% of the variance in EP/CE and TMV/CE respectively. Industry-specific factors are the second most important factor, after firm effects, in explaining TMV/CE. On average, industry factors explain more variance than country factors (2.0% versus 0.5%). Year or global effects are also low and their level of importance is almost similar to country effects.

DISCUSSION OF RESULTS

This study's objective was to examine the influence of home country on firm performance against the background of increasing market integration across the world's economies. Our results suggest several implications with regard to public policy, firm management and investment management.

In this paper, we explored three types of country effects – a stable effect, a transient effect and a specialization effect. *The results show that the country factors, individually or jointly, have little effect on firm performance, whether this is measured in terms of*

operating or market performance. A reason for the low explanatory power of home country could be that either the geographical, legal and institutional framework for the companies in the sample had expanded beyond the national boundaries, i.e. companies in the UK, Germany and Benelux countries may be increasingly more influenced by EU policies. A second reason for the apparently low influence of the home country may be the opposite, i.e. the country variable does not ideally proxy for the impact of geography and firms are more influenced by the particular region within the country where its primary activities are located. This would require us to adapt our model with regional variables that represent intra-country regions.

The effect that has the most conceptual appeal is the specialization effect, i.e. the impact of relative specialization of countries in industries that is best suited to their national contexts. *This paper finds that the 'competitive advantage of nations' (Porter, 1990) has only marginal effect on a firm's performance.* The finding on this particular effect poses some pertinent questions to public policy and firm management. How effective can be national industrial policies that are aimed at the development of specific industries? Can such policies improve the competitiveness of the country's firms, if other countries attempt similar regimes? In a world of integrated and open markets, if some countries are more conducive for the development of certain type of industrial activities, then foreign firms would establish their operations in this country negating any locational advantages that the home country firm could have enjoyed.

The paper also finds that the explanatory power of industry factors is low across all the countries considered. In a way this finding reinforces the earlier observation on the impact of competitive advantage of nations in particular industries. When industry factors count for little in explaining firm performance, it is obvious that a nation's advantage in an industry is less likely to influence a firm's long-term performance in that industry. At least two related reasons could be the cause of the unimportance of industry factors: firstly, industry definitions can be subjective and secondly, industry boundaries are in a constant state of flux due to changes in technology, deregulation, and firm strategies themselves.

If performance is not explained to a great extent by external factors such as nation and industry, then the question is what drives firm value. We find that firm-specific factors dominate explained variation in performance. The domination of firm effects is robust across the different countries, which gives support for the findings of Rumelt (1991); McGahan and Porter (1997). *Irrespective of a firm's country of origin and the characteristics of its industry structure, internal assets and competencies are central to its competitive advantage.* Superior performance and competitive advantage seems to be driven mostly by firm-specific factors, than external influences.

However, this conclusion has to be tempered by the fact that our model does not explain performance for German and Benelux firms substantially, even though of the independent variables, firm factors dominate the explained variance. This could be because the data sets used in this study for Germany and Benelux are small and results hence might be

distorted. A second reason for the low explanatory power of the model typically would be its possible under-specification. We suggest further research to examine these issues.

The implication for firm management is clear. While country and industry factors do influence the context in which choices are made, such influences often do not explain the firm's competitive advantage. The fact that a firm operates in a particular country or industry need not automatically confer it with a competitive advantage because these external factors benefit or disadvantage to a certain degree all firms in that environment. But depending on their own relative competencies, the dynamics of the external environment may imply different opportunities and threats to the firms. Firms face differential challenges and threats that is not only a product of the country or the industry features but also a product of its own choices in the past.

We also find that of the external factors influencing firm performance, global industry factors may be more important to performance than country factors. [10] It could be argued that as countries liberalize their domestic product markets, dismantle barriers to capital movements and remove distortions to competition, the opportunities for firms to compete across borders and organize their value chains on a cross-border basis has increased to a great extent. This implies that the geographical boundaries of industries are not constrained by national borders and as a consequence might contain elements of variability that were previously part of the country factor. We would expect that as

[10] Recent evidence also suggests that industry factors are gaining at the expense of country-specific factors (Kernels and Williams, 2000).

industries get exposed more and more to the forces of market integration, the importance of global industry factors is likely to increase, as our results suggest.

The results for explaining the variation in market value (per unit of capital employed) suggest that investment managers should consider diversification across industries, as it is likely to have greater risk reduction benefits than diversification across countries. The traditional method of allocating assets by country to diversify the portfolios internationally is unlikely to be effective. It might also be expected that a portfolio based on home country assets will have some cross-country components. This would be because many so-called 'local' firms are increasingly exposed to global forces in terms of their sales, assets and competition in both factor and product markets.

CONCLUDING REMARKS

The impact of home country on firm performance is an issue that had not found sufficient and direct empirical attention. This study's objective was to examine the importance of home country to firm performance in a world of increasing market integration. While evidence in international economics suggests that that home country effects have been steadily decreasing in the last decade as the global integration of markets, the evidence in empirical finance indicates that global industry factors may be gaining at the expense of country-specific factors. This study's finding that home country effects are relatively less important than firm-specific factors in driving value agrees with some of the preliminary evidence in international economics and finance.

This does not necessarily mean that countries do not influence firm success. Incomes, consumer tastes, and regulations differ across countries. Differences also persist in the ability of countries to provide legal and financial systems that guarantee property rights, investments and enforcement of contracts that make the economic system to work. Particular social systems encourage certain type of managerial behavior and decision making and again this could influence firm performance. Our thesis is that in competitive markets, however, the firm's objective of competitive advantage cannot be achieved without establishing some market imperfection.

The implication for managers is that corporate success is less dependent on the attractiveness of industry or the country environment, but more on the firm-specific factors that determine its competitive advantage. Our findings also suggest that firms need to extend their thinking beyond national borders when it comes to competition, capabilities and customers. Firm competencies need not arise solely from the home country context, but could be a product of management's decision to build capabilities globally.

Our study is not without its drawbacks. In particular, it covers firms in economies that are considered to be relatively more integrated with each other. It would be interesting to see if the results hold if we include, say Japanese or Korean firms, in the sample. Secondly, our study does not uncover whether the home country effect has evolved over time. This study's data set covers the mid-1990s, the decade when globalization has come to be more widespread in business. Given the complementary evidence in international

economics and finance, we would suspect that the home country effect on firm performance has been steadily decreasing over time. These questions merit further research.

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TABLE 1 - US

Mean EP/CE and TMV/CE by industry for the period 1993-1996 [a]

Industry Name	EP/CE		MV/CE	
	$N_{f(i)}$	$Mean_i$	$N_{f(i)}$	$Mean_i$
Aerospace & Defense	12	-0.004	12	1.57
Cars & Trucks	5	0.018	5	1.68
Car Parts & Equipment	13	-0.011	13	1.83
Car Distribution & Retailing	3	0.028	3	2.04
Chemicals	35	0.010	35	2.05
Plastics & Products	5	-0.003	5	1.58
Apparel	8	-0.004	8	1.73
Appliances & Home Furnishing	12	-0.028	12	1.52
Beverages	8	-0.019	8	1.58
Personal Care	7	0.004	7	2.22
Tobacco	5	0.023	5	2.54
Home Electronics	3	0.029	3	2.56
Paper & Products	23	0.013	23	2.21
Discount Retailing	31	0.008	31	2.12
Fashion Retailing	10	-0.018	10	2.03
Electrical Products	9	-0.028	9	2.56
Electronics	11	0.008	11	1.85
Instruments	14	-0.004	14	1.84
Semiconductors & Components	23	0.020	23	2.89
Food Processing	30	-0.009	30	1.81
Food Distribution	4	0.067	4	5.79
Food Retailing	13	-0.028	13	1.25
Oil & Gas	34	0.005	34	1.67
Petroleum Services	15	0.045	15	2.63
Drugs & Research	26	0.019	26	2.47
Drug Distribution	9	-0.022	9	1.61
Medical Products	15	-0.029	15	1.74
Healthcare Services	18	-0.02	18	1.78
Building Materials	11	-0.004	11	2.38
Construction & Engineering	3	0.032	3	2.40
Eating Places	9	0.014	9	2.37
Entertainment	15	-0.009	15	1.93
Hotel & Motel	6	-0.056	6	1.21
Games & Toys	2	-0.014	2	1.03
General Engineering	6	-0.035	6	1.54
Machine & Hand Tools	9	0.022	9	1.90
Machinery	6	0.024	6	2.64
Packaging	2	0.007	2	1.39
Aluminium	5	-0.127	5	0.97
Steel	14	-0.024	14	2.67
Gold	4	-0.010	4	1.74
Other Metals	3	0.013	3	1.97
Business Machine & Services	8	-0.007	8	1.59
Computers & Peripherals	23	-0.029	23	1.94
Computer Software & Services	32	0.016	32	2.74
IT Consulting Services	8	0.067	8	5.40

[a] EP = Economic Profit; CE = Capital Employed; TMV = Total Market Value

Industry Name	EP/CE		MV/CE	
	$N_{f(i)}$	$Mean_i$	$N_{f(i)}$	$Mean_i$
Broadcasting & Publishing	21	0.030	21	3.79
Printing & Advertising	6	0.030	6	2.65
Industrial Distribution	6	0.046	6	3.83
Pollution Control	6	0.086	6	4.02
Personnel-Supply Services	5	0.030	5	2.25
Telephone Equipment & Services	13	-0.054	13	3.25
Telephone Companies	12	0.004	12	2.11
Cable Television	7	-0.015	7	1.60
Airlines	9	-0.032	9	1.70
Railroads	4	-0.040	4	1.23
Transportation Services	14	-0.043	14	1.01
Total	670		670	
Mean	-0.0002		2.18	
Standard deviation	0.034		0.93	

TABLE 2 - UK

Mean EP/CE and TMV/CE by industry for the period 1993-1996 [a]

Industry Name	EP/CE		MV/CE	
	$N_{(i)}$	$Mean_i$	$N_{(i)}$	$Mean_i$
Aerospace & Defense	7	-0.067	7	1.209
Car Parts & Equipment	10	-0.027	10	1.435
Car Distribution	9	-0.020	9	1.434
Chemicals	9	-0.024	9	1.604
Plastics & Products	7	-0.011	7	2.052
Apparel	17	-0.027	17	1.876
Appliances & Home Furnishing	12	0.038	12	4.222
Beverages	14	-0.010	14	1.635
Personal Care	2	-0.001	2	1.917
Paper & Products	13	-0.009	13	1.715
Discount Retailing	11	0.001	11	2.536
Fashion Retailing	8	-0.011	8	2.043
Electrical Products	3	-0.057	3	1.429
Electronics	7	-0.001	7	2.115
Instruments	9	-0.002	9	2.226
Food Processing	21	-0.010	21	1.567
Food Distribution	3	-0.014	3	1.647
Food Retailing	8	-0.007	8	1.575
Oil & Gas	15	-0.048	15	1.516
Drugs & Research	16	-0.045	16	3.501
Drug Distribution	4	-0.035	4	2.646
Healthcare Services	3	-0.030	3	1.493
Building Materials	19	-0.041	19	1.503
Construction & Engineering	31	-0.057	31	1.298
Eating Places	8	0.029	8	3.358
Entertainment	14	0.039	14	3.749
Hotel & Motel	3	-0.043	3	2.664
Games & Toys	3	0.015	3	1.973
General Engineering	12	-0.009	12	1.831
Machine & Hand Tools	13	-0.042	13	1.317
Packaging	5	0.007	5	2.017
Steel	4	0.033	4	2.208
Metals	2	-0.050	2	1.404
Ceramics	3	-0.045	3	1.246
Glass	2	0.079	2	3.291
Computers & Peripherals	2	-0.086	2	5.162
Computer Software & Services	7	0.023	7	3.113
Broadcasting & Publishing	22	0.050	22	3.067
Printing & Advertising	6	-0.011	6	1.880
Industrial Distribution	10	-0.004	10	2.615
Pollution Control	4	-0.016	4	2.079
Personnel supply services	7	-0.028	7	1.774
Telephone Equipment & Services	2	-0.099	2	2.105
Telephone Companies	3	0.049	3	3.127
Railroads	5	-0.012	5	1.885
Transportation Services	17	0.005	17	2.123
Total	412		412	
Mean	-0.014		2.178	
Standard deviation	0.036		0.854	

[a] EP = Economic Profit; CE = Capital Employed; TMV = Total Market Value

TABLE 3 - Germany

Mean EP/CE and TMV/CE by industry for the period 1993-1996 [a]

Industry Name	EP/CE		MV/CE	
	$N_{(i)}$	$Mean_i$	$N_{(i)}$	$Mean_i$
Cars & Trucks	5	-0.067	5	1.244
Car Parts & Equipment	4	-0.026	4	1.239
Chemicals	3	0.004	3	1.005
Apparel	8	-0.024	8	3.114
Appliances & Home Furnishing	4	-0.033	4	1.601
Beverages	9	0.094	9	1.548
Personal Care	3	0.036	3	1.707
Paper & Products	5	-0.049	5	1.478
Discount Retailing	4	-0.001	4	1.673
Electrical Products	4	-0.023	4	1.073
Electronics	4	-0.013	4	1.635
Food Processing	4	-0.0002	4	1.254
Food Distribution	3	-0.009	3	1.226
Drugs & Research	6	0.031	6	1.594
Drug Distribution	4	-0.093	4	2.182
Healthcare Services	2	-0.024	2	1.594
Building Materials	7	0.027	7	1.566
Construction & Engineering	12	0.009	12	2.142
General Engineering	2	0.073	2	1.810
Machine & Hand Tools	7	-0.070	7	1.326
Machinery	12	-0.037	12	1.469
Steel	2	-0.034	2	1.044
Ceramics	6	-0.032	6	0.967
Glass	2	-0.017	2	0.981
Printing & Advertising	4	-0.030	4	2.062
Industrial Distribution	2	-0.030	2	1.230
Transportation Services	2	0.053	2	2.126
Utilities	7	0.008	7	1.052
Total	137		137	
Mean	-0.010		1.534	
Standard deviation	0.042		0.477	

[a] EP = Economic Profit; CE = Capital Employed; TMV = Total Market Value

TABLE 4 - Benelux (Belgium, Netherlands, Luxembourg)
Mean EP/CE and TMV/CE by industry for the period 1993-1996 [a]

Industry Name	EP/CE		MV/CE	
	$N_{f(i)}$	$Mean_i$	$N_{f(i)}$	$Mean_i$
Card Distribution	2	-0.030	2	0.950
Chemicals	5	-0.006	5	1.095
Plastics & Products	3	-0.001	3	1.710
Apparel	2	-0.021	2	0.905
Appliances & Home furnishing	-	-	-	-
Beverages	3	-0.011	3	2.852
Electrical Products	3	0.027	3	1.138
Electronics	2	0.0001	2	1.964
Instruments	2	0.015	2	1.681
Food Processing	6	0.021	6	1.896
Food Distribution	2	0.046	2	1.958
Food Retailing	5	0.007	5	2.173
Oil & Gas	2	-0.014	2	1.338
Drugs & Research	2	-0.035	2	1.545
Drug Distribution	4	0.0001	4	1.425
Building Materials	3	0.004	3	1.204
Construction & Engineering	9	0.016	9	1.062
Hotel & Motel	2	-0.013	2	1.196
General Engineering	3	-0.009	3	1.258
Machinery	4	-0.284	4	-2.585
Steel	6	-0.006	6	0.823
IT Consulting Services	2	0.086	2	3.710
Broadcasting & Publishing	6	0.019	6	4.123
Industrial Distribution	4	-0.014	4	1.207
Personnel-Supply Services	4	0.135	4	4.282
Transportation Services	7	-0.04	7	0.911
Utilities	2	-0.014	2	1.178
Total	95		95	
Mean	-0.005		1.577	
Standard deviation	0.068		1.287	

TABLE 5
Correlation between EP/CE and TMV/CE [a]

	EP/CE	TMV/CE				
		US	UK	Germany	Benelux	All firms
EP/CE	1.00	0.46	0.65	-0.046	0.967	0.605
TMV/CE		1.00				

[a] EP = Economic Profit; CE = Capital Employed; TMV = Total Market Value
[a] EP = Economic Profit; CE = Capital Employed; TMV = Total Market Value

Table 6

Absolute values of the variance contributed by independent variables for years 1993-1996 across US, UK, Germany and Benelux countries [ab]

Variance Component	EP/CE [†]				TMV/CE [†]			
	US	UK	Germany	Benelux	US	UK	Germany	Benelux
Firm effect	0.00443	0.00505	0.00234	-0.0034	2.283	2.808	0.635	-2.253
Industry effect	0.00015	0.00075	0.00076 [‡]	0.0014	0.257	0.415	0.136 [‡]	1.019
Year effect	0.00015	0.00001[‡]	-0.00014	0.0001	0.022	0.030[‡]	0.029	0.148
Industry-Year effect	0.00007	0.00010[‡]	0.00040	0.0006	0.005[‡]	0.035	-0.015	-0.069
Error	0.00483	0.00531	0.02080	0.0685	0.966	3.605	2.136	24.362

[a] Belgium, Netherlands and Luxembourg
[b] EP = Economic Profit; CE = Capital Employed; TMV = Total Market Value
[†] P<.05
[‡] The estimate was not found significant at the 5% level.

TABLE 7

Firm and Industry effects across US, UK, Germany and Benelux countries [a]

Firm and industry effects in percentage of total variance of the dependent variable

for years 1993-1996 based on the data reported in Table 4 [b]

Variance Component	EP/CE				TMV/CE			
	US	UK	Germany	Benelux	US	UK	Germany	Benelux
Firm effect	46.0	45.0	9.6	0.0	64.7	40.7	21.6	0.0
Industry effect	1.6	6.7	3.2 ‡	2.0	7.3	6.0	4.6 ‡	4.0
Year effect	1.6	0.1 ‡	0.0	0.1	0.6	0.4 ‡	1.0	0.6
Industry-Year effect	0.7	0.9 ‡	1.6	0.9	0.1 ‡	0.6	0.0	0.0

[a] Belgium, Netherlands and Luxembourg
[b] EP = Economic Profit; CE = Capital Employed; TMV = Total Market Value
‡ The estimate was not found significant at the 5% level.

TABLE 8

Country effects

Absolute values of the variance and relative proportions contributed by independent variables for years 1993-1996 [a]

Variance Component	EP/CE		TMV/CE	
	Variance Estimate [†]	Percentage (%)	Variance Estimate [†]	Percentage (%)
Firm	0.00377	23.8	1.968	32.7
Industry	0.00003	0.2	0.251	4.2
Country	0.00003	0.2	0.044	0.7
Year	0.00006	0.4	0.036	0.6
Country-Industry	0.00034	2.1	0.060	1.0
Industry-Year	0.00001[‡]	0.1[‡]	0.006 [‡]	0.1[‡]
Country-Year	0.00005	0.3	- 0.010	0.0
Error	0.01154	72.9	3.654	60.7

[a] EP = Economic Profit; CE = Capital Employed; TMV = Total Market Value

[†] P<.05

[‡] The estimate was not found significant at the 5% level.