CORPORATE GOVERNANCE, LEGAL ORIGIN AND THE PERSISTENCE OF PROFITS

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Abstract

The persistence of abnormal profits can be interpreted as evidence of the presence of firms which are successful over time in capturing rents from product or process innovation. Using a large sample of manufacturing firms in 18 developed and developing countries, we estimate the impact of laws governing shareholder rights on the persistence of firm-level profits. We find that higher shareholder protection reduces the persistence of profits in common law countries and increases it in civil law countries. Because shareholder protection is higher, on average, in common law countries, this finding is consistent with the view that increases in legally mandated or encouraged shareholder protection beyond a certain point have a negative impact on firm-level innovation.

Keywords: legal origin; corporate governance; shareholder protection; product market competition; persistence of profits.

JEL Codes: K22, G28, L22, L25

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1. Introduction

The 'legal origins' theory developed by La Porta et al. (1998, 2008) has made a fundamental contribution to our understanding of the relationship between law, finance and economic growth. However, there is a gap in their analysis, concerning the interaction between corporate governance mechanisms, product market competition and innovation. This paper identifies and remedies this omission, with the aim of rendering legal origins theory more useful for economic analysis and policy-making. Our contribution is both a theoretical one, which unites law and finance with the theory of the growth of the firm, and an empirical one, which builds on insights drawn from recently-developed indices of legal change over time in the area of shareholder protection.

2. Legal origins, product market competition and innovation

La Porta et al.'s work on law and finance effectively began with their 1998 landmark paper (La Porta, Lopez-de-Silanes, Shleifer and Vishny, 1998). More recently there has been an important review of the legal origins field by three of its founding architects (La Porta, Lopez-de-Silanes and Shleifer 2008). La Porta et al. have argued that 'legal origins' – that is to say, the origins of national legal systems in the traditions of the French, German or Nordic civil law, or in those of the English common law – are a major determinant of a country's laws in relation to the protection of corporate shareholders, creditors and labor interests, among others (see La Porta et al., 2008 for detailed references).

The heart of La Porta et al.'s analysis is that, where shareholders enjoy a higher level of legal protection, more finance is available to corporations. Thus these authors see 'the protection of the property rights of the financiers as essential to assure the flow of capital to firms' (La Porta et al., 2008: 285). Moreover, in addition to the greater security of property rights offered by the common law, proponents of the legal origins hypothesis have also suggested that common law countries provide better contract enforcement than civil law countries. Certain institutional features of common law countries – including greater flexibility and responsiveness in law making, a more independent judiciary, and a less interventionist stance from government – are said to lead to economic outcomes

which are superior to those in civil law countries. In the context of law and finance, the legal origins argument is that there is a greater development of financial markets in common law countries, which leads to greater investment by the public in equity markets and in corporate bond markets. It is thus suggested that at the microeconomic level of the individual firm or corporation, there is greater availability of corporate finance in common law systems, and that this in turns impacts on corporate profitability and growth (La Porta et al., 1998, 2008).[1]

However, this use of legal origins theory to analyze the contribution of legal systems to corporate profitability is based on a partial model of the growth of firms. Corporate growth in the model of La Porta et al. depends on the supply of corporate finance: demand factors are either ignored or it is assumed that all firms are faced with an infinitely elastic demand curve for their products, implying that they are able to sell as much as they choose at the going price. This portrayal of the modern corporation does not correspond to the real world of imperfect competition. The legal origins approach focuses on capital markets and the supply of finance, but gives little or no consideration to the state of competition and to related characteristics of product markets.

A firm may be efficient in terms of attracting finance, but may not have sufficient demand for its products to take full advantage of all the finance available to it. Marris's model of the firm clarifies these issues (Marris, 1964). Briefly, Marris suggests that while corporate managers may be interested in serving their shareholders, they may be more concerned with their own power, prestige and salary, all of which are correlated closely with the size of the firm. In view of this principal-agent problem, managers may pursue fast corporate growth even if it is not profitable. In Marris's model, the firm's supply of finance is a positive function of the rate of return on its assets, while the growth of demand for its products depends on how efficiently the management team carries out its varied tasks. Marris hypothesizes a negative relationship between the rate of profit and the rate of growth of demand, because profits have to be sacrificed in order to obtain greater growth in demand through advertising and R&D among other things. Equilibrium growth for the corporation is determined by the intersection of the product demand curve and the finance supply curve.

The implication of Friedman's analysis of competition between firms (Friedman, 1953) is that if there were perfect competition in product markets, there would be no principal-agent problem, as corporate managers would be obliged to pursue profit maximization as a condition of their firms' survival. However, if competition were imperfect, survival would require neither minimization of costs nor maximization of profits. Subsequently, Manne (1965) argued in a landmark paper in corporate governance theory that, if there were perfect competition in the capital market (in the sense of a perfect market for corporate control), the state of competition in the product market would not matter, the converse of Friedman's implication. Even monopolistic companies in product markets would not survive unless they minimized costs and maximized monopoly profits.

The models developed by Friedman and Manne assumed perfect competition in product and capital markets respectively. A more realistic view is that both markets are, in various ways, imperfect. If product markets were perfectly competitive, the advantages enjoyed by the more successful firms would be eroded away, while the less effective ones would either catch up or go out of business. Instead, the empirical literature on performance persistence, beginning with Mueller's studies (1977, 1986), shows that the profits of above- and below-average firms do not converge over time, and that past performance strongly influences firms' current profitability.

The sources of abnormal profitability are not clear. It could be a sign of barriers to competition in product markets. However, abnormally profitable firms could be those which are able to generate serial innovations in products and processes, placing them at an advantage compared to their competitors. While the rents from individual products should be competed away over time, some firms may be able to generate multiple innovations in linked products, and thereby retain supra-normal profitability even under competitive conditions (Roberts, 1999). Moreover, in the case of such firms shareholder monitoring may be of minimal effect or even counter-productive (Deakin and Mina, 2013).
The empirical literature on corporate governance recognizes the possibility that firms subject to pressure for high returns from shareholders may face a number of constraints on their ability to generate product and process innovations. From the viewpoint of agency theory, corporate governance arrangements which designate

residual control and income rights to shareholders have 'survival value' because by doing so they reduce the costs associated with contractual monitoring and risk-adjustment. The reduction of agency costs contributes to the firm's competitive survival because it enables it to deliver products at lower prices, all things being equal (Fama and Jensen, 1983). In principle, this argument can be extended to cover the case of innovation: shareholder-focused firms should be more likely to survive and prosper in environments which offer the possibility of supra-competitive returns from innovation, on the one hand, and the threat of obsolescence, decline and exit under the pressure of Schumpeterian 'creative destruction', on the other.

The agency-theoretical view of the governance-innovation link has been challenged by the theory of the innovative firm developed by Lazonick (2001, 2007, 2010) and O'Sullivan (2000; 2003). In their approach, the firm consists of a set of organisational relations which determine the way in which investment decisions are made, what types of investments are made, who makes these decisions and who claims the returns from these investments. The fundamental trade-offs in the investment decision are, firstly, between the short and the long term, and, secondly, between internal and external mechanisms of financing. The main trade-off in the redistribution of profits is between the claims of shareholders and those of 'residual' stakeholders, above all the employees of the firms who engage in collective learning and by doing so develop the innovative potential of the business. The central conflict of interest for the firm rises from the need to commit to innovation, a source of sustainable growth and continued employment, over a longer period of time than the one that would be sufficient to generate equal amounts of speculative returns for shareholders. The potential consequences of this conflict include the (mis-)use of the stock market to maximise shareholders' returns to the detriment of other stakeholders (in particular employees but also strategic customers and suppliers) as well as investment in innovation. It can also lead, as Lazonick has argued in the case of the US, to inequitable and unstable resource allocation in a number of large corporations governed according to the shareholder value maximisation principle, which has had negative effects on workers, firm competitiveness, and macroeconomic growth (Lazonick, 2010).

A related critique of the agency-theoretical view has been made by Tylecote and his collaborators. After reviewing the role of finance and corporate governance in a national innovation systems framework (Tylecote 2007), they find that country-specific factors significantly influence the rate and direction of technical change as well as the development path of firms. This suggests that the agency model describes those systems, those such as the US and UK, which rely heavily on external finance, supplied through the capital market, to support innovation, but has limited relevance in other contexts.

In the case of the USA and the UK, there is evidence of potentially negative effects of shareholder-orientated corporate governance rules on investment decisions. Graham et al. (2005) report that US listed companies are becoming less willing to invest in R&D when they come under pressure to prioritise shareholder returns through share buy-backs and higher dividends. Asker, Farre-Mensa and Ljungvist (2012) find that US listed firms invest less than comparable private firms and are less responsive to changes in investment opportunities, particularly in industries characterised by high sensitivity of stock prices to current earnings. Comparative studies also provide evidence of trade-offs between shareholder protection and stock market values, on the one hand, and innovation, on the other. Belloc (2012) reports the findings of 48-country study which analyses the relationship between shareholder protection and innovation as measured by investments in R&D and patenting activity. Employing a panel data methodology, he finds that that a high level of legal shareholder protection is correlated with a higher level of stock market capitalisation, but a lower level of innovation activity.

Lazonick and Prencipe's (2005) case study of Rolls Royce points to tensions between corporate governance practices in the UK and the development of technological capabilities by manufacturing firms. The paper describes how Rolls Royce consolidated and then improved its position in the global market for aircraft engine production in the course of the 1990s through a strategy of building internal capabilities that was led by a largely engineering-focused team of managers. In this period, the development of the company's three-shaft turbofan engine enabled it to overtake its US rival Pratt and Witney to become the second-ranked commercial aviation engine producer after GE. In the early 1990s the company cut dividend payments, and its share price subsequently under-performed the FTSE

100 index. Despite this, the company was able to raise capital through a rights issue in 1993, and it took on debt to fund a number of acquisitions. By the end of the decade it had largely paid off its debt through the revenues generated by increasing sales; its share of the global turbofan market increased from 8% in 1987 to 30% in 2002. Throughout this process, the company's management was effectively protected from negative investor opinion by the 'golden share' retained by the UK government. The senior management team had virtually no ownership stake in the company, and the board members between them held less than 0.5% of the issued share capital. The authors of this study make the point that the success of Rolls Royce needs to be seen against the background of 'the relative lack of success, more generally, of British companies in high-technology manufacturing industries over the past half century or so' (Lazonick and Prencipe, 2005: 502).

The empirical literature on the relationship between corporate governance and product market competition does not clearly resolve these issues. Giroud and Muller (2010) analyse the impact of firm-level corporate governance practices on a number of performance measures (share price performance, Tobin's q, return on equity, return on assets, net profits) for a sample of over 3,000 US listed companies across a range of industries (including but not confined to manufacturing sectors). They then control for the competitive structure of industries, as measured by the Hirschman-Herfindahl index of concentration. They find that firm-level governance is only weakly correlated firm performance in competitive industries but that it has a more sizable positive relationship with performance in non-competitive ones. They conclude that product market competition and corporate governance operate as substitutes: governance has little role to play in enhancing firm performance if product markets are already competitive.

Knyazeva and Kynazeva (2012) reach an opposite result, although differences in their focus, which is on legal rules rather than firm-level practices, and in the scope of their study, which does not include the USA or Canada, may partly explain the divergence. Rather than focusing on differences in firm-level governance practices in a single jurisdiction as Giroud and Muller (2010) did, they look at differences in country-level laws on shareholder protection, using, using the index of La Porta et al. (1998). They use a very large sample of mostly manufacturing firms (regulated industries and financial firms are excluded) in 45 developed and developing

countries, excluding US or Canadian incorporated firms. They find that shareholder rights have a positive impact on firm performance (both financial performance and profitability) in industries which are more competitive (using the HHI as the measure of competitive structure). They explain this result on the basis that shareholders are able to monitor managers more effectively in competitive industries where it is easier to identify and remedy managerial underperformance.

Neither of these two studies takes into account the possible impact of innovation on product market structure. The HHI measure of competitive structure could be indicating inefficiencies induced by artificial barriers to entry, but it could also indicate the presence of serially innovative firms able to sustain their competitive advantage over time. The persistence measure, by contrast, more clearly signals the presence of innovation. This poses the question: what is the likely impact of shareholder-friendly corporate governance practices on the persistence of profits?

3. Legal trends in shareholder rights in the 1990s and 2000s

La Porta et al.'s initial findings on the role of law and legal origin in shaping financial development were based on a cross-sectional analysis of the state of corporate law in 49 countries in the mid-1990s. They developed an 'anti-director rights index' which measured legal protection of shareholder rights using five indicators: recognition by the legal system of shareholders' rights to vote by proxy (an important measure of the ease with which shareholders could exercise their voting rights); legal control over the blocking of shareholder votes by the board prior to a meeting; the presence of a cumulative voting rule which provided for minority shareholder representation on the board; legal support for shareholders' pre-emption rights, that is, protection against the dilution of their holdings through the issuing of new stock; and legal regulation of the proportion of shareholder voting rights needed to call a shareholders' meeting. Low scores on the anti-director rights index were found to be correlated with a reduced level of stock market development as measured by the ratio of stock market capitalization to GDP (La Porta et al., 1998: 1145). The negative effects of weak shareholder protection were particularly marked in French-origin civil law countries, leading La Porta et al. to conclude that 'legal systems matter to corporate governance

and… firms have to adapt to the limitations of the systems that they operate in' (La Porta et al., 1998: 1117).

The anti-director rights index has been highly influential but it suffers from two limitations which are particularly relevant here. The first relates to the selection of indicators. The variables chosen by La Porta et al. for their index appear to suffer from a form of 'home-country bias', in the sense that they focus on core aspects of Anglo-American company law to the exclusion of mechanisms of protection which are widely found in civil law systems. The result is that the anti-director rights index under-scores the laws in civil law systems and over-scores those in common law ones (Armour et al., 2009a). The second problem is that the anti-director rights index, in common with other indices of a similar type, is static: it describes the law at a single point in time in the mid-1990s. Thus it cannot be used to test propositions concerning the impact of changes in the law over time.[2]

Corporate laws around the world have developed considerably over the past decade and a half, making it essential to have a measure of the extent and direction of this change if La Porta et al's initial findings are to be tested in a time-series setting. The World Bank's *Doing Business* indicators provide a limited time series of shareholder protection laws but these only go back to the early 2000s. Armour et al. (2009a) have constructed a longitudinal index for 25 countries over the period 1995-2005. Their index contains ten indicators which are set out in Table 1. These indicators were constructed with a view to minimizing the risk of home-country bias, and they also take into account a wider range of regulatory influences than those in the anti-director rights index. Thus Armour et al.'s index captures the influence of corporate governance codes and takeover codes, which in some countries take a legislative form and in others are contained in 'soft law' or in self-regulatory codes such as stock exchange listing rules, a possible reason for their exclusion from La Porta et al.'s index. There is a strong case for including corporate governance codes and takeover codes in an index of shareholder rights, notwithstanding their 'soft law' status in some countries, given the importance which has been attached to the rules they contain (for example, on independent directors and mandatory bids in takeover contests) by international bodies responsible for disseminating 'best practice' in the corporate governance field, such as the OECD (see OECD, 2004).

Figures 1 and 2 (see Appendix 1) report the main trends in shareholder protection, as measured by Armour et al. (2009a), in 19 of the 25 countries in their sample. We have chosen to focus on these 19 countries because there are insufficient data on firm-level performance in the remaining six for us to study the interaction of corporate governance rules with product market competition in those countries (see further below). Figure 1 (see Appendix I) illustrates the trends in shareholder rights according to groups of countries categorized by legal origin (common law versus civil law) and state of development (developed versus developing), and Figure 2 (see Appendix I) provides individual country breakdowns. There has been substantial change over time in almost all systems, with a general rising trend over the period of the study. Civil law and developing countries, on average, had lower scores than common law and developing ones, but were, in each case, catching up. The fastest rate of change was in civil law developing countries. What we are observing in these data is global convergence around a common law model. Across the sample as a whole, the indicators which displayed the greatest increases were those relating to independent boards and the mandatory bid rule in takeover bids, core features of the British and American approaches to corporate governance. Notwithstanding the faster rate of increase in civil law systems, common law systems continue to enjoy an advantage, overall, in terms of the level of protection offered to shareholders. It should be borne in mind that what is being measured here is formal or de jure convergence; Armour et al. (2009a) do make no assumptions, at the point of index construction, about enforcement, nor about the extent of the legitimacy or degree of acceptance of norms in different countries.

4. Hypotheses

In the light of the above observations, the relationship between product markets, corporate governance and legal origin becomes an issue of central concern for economic analysis and for legal and regulatory policy.

The critical questions are:

What has been the impact of the strengthening of shareholder rights which has recently occurred in most countries of the world – common law and civil law, developed and developing – on firm performance, and in particular on the innovative capacity of firms?

What role if any does legal origin play in mediating the effects of increasing shareholder rights on firm-level innovation and firms' performance?

The first question raises the issue of the impact of the strengthening of shareholder rights which has occurred worldwide since the early 1990s. Legal origins theory, along with corporate governance theory in general, associates a higher level of shareholder protection with enhanced discipline of managers, greater efficiency in the use of resources by firms, and faster growth of firms. This should lead to increased persistence of profits, either as a result of increased innovation, in sectors characterised by Schumpeterian 'creative destruction', or as a result of firms' greater sensitivity to shareholders' interests, in monopolistic markets. This suggests the following hypothesis:

Hypothesis 1: A higher level of shareholder protection is associated with greater persistence of firm-level profits.

The second question, as we have seen, turns on the role of institutional factors, related to or manifested in legal origin, in mediating the effects of corporate governance reforms. Over the past twenty years there has been considerable reform of corporate governance laws and standards around the world, with civil law systems borrowing many features of common law rules for independent boards and support for hostile takeover bids. As these rules are transplanted from the common

law to the civil law, some resistance to the transplantation process could be expected, as laws from the common law world encounter a different environment in the civil law context. This suggests the following hypothesis:

Hypothesis 2: Increases in shareholder protection are likely to have a more beneficial impact on firm performance in common law countries than in civil law ones.

5. Data and modelling

5.1Data

We now turn to our empirical analysis. In addition to using the longitudinal shareholder protection index developed by Armour et al. (see above), we use accounting data for firms which are available for 19 countries in the index. These are obtained from *Worldscope* through the *Thomson One Banker* interface. Our study includes manufacturing firms that reported their net income and assets for the entire 11-year period. This selection criterion excludes young firms or firms that have failed. Lack of enough sample firms eliminates some of the countries in the Armour et al. index (including the Czech Republic, Russia and Slovenia) from this study, leaving us with 19 countries in total. The total sample contains 25,333 observations from 2,303 manufacturing firms from 19 countries. Table 2 presents the sample characteristic. Countries' legal origins are defined by following La Porta et al. (1998). Whether a country is developed or emerging is identified by reference to the MSCI World Index.

5.2Models and estimation method

Static measures of concentration inadequately reflect competitive intensity. Competitive dynamics may be better captured by examining the persistence of corporate rates of return. The underlying assumption of the method we apply is that if competition is intense, there is unlikely to be persistence in the profitability of competing firms (see Glen, Lee and Singh, 2003).[3]

Following the previous persistence of profitability literature (e.g., Glen et. al., 2003; Chacar and Vissa, 2005), the persistence of performance is estimated using a dynamic panel data method based on the following equation for corporate profitability:

$$P_{i,t} - P_l = b\,(P_{i,t-1} - P_l) + \varepsilon_{i.t} \qquad (1)$$

where $P_{i,t}$ is the profitability of firm i in time t, P_l is the country average profitability across firms, b is the common persistence parameter (the coefficient measuring the impact of past performance of a firm compared to the national average) to be estimated, and $\varepsilon_{i.t}$ is the usual error term. The dependent variable, $(P_{i,t} - P_l)$, is the deviation of firm i's profitability at time t from the profitability of all other firms in the country (P_l) at that time; this can be called normalized performance ($\text{NROA}_{i\,t} = P_{i,t} - P_l$). It should help to control for the various common factors which affect all firms in a country.

For testing the difference in persistence between common law and civil law groups of countries, and developed and emerging countries, we use separate regressions for each group and combine them together with the help of the dummy variables:

$$\text{NROA}_{i\,t} = b_{civ}\,NROA_{i\,t-1} + (b_{com} - b_{civ})\,(\text{NROA}_{i\,t-1} * COM) + \varepsilon_{i.t} \qquad (2)$$

$$\text{NROA}_{i\,t} = b_{EC}\,NROA_{i\,t-1} + (b_{DC} - b_{EC})\,(\text{NROA}_{i\,t-1} * DC) + \varepsilon_{i.t} \qquad (3)$$

where COM is the common law country dummy which takes the value of 1 for common law countries, and zero otherwise; DC is the developed country dummy which takes the value of 1 for developed countries and zero otherwise; and b_{civ} ,

b_{com} , b_{EC} and b_{DC} are the persistence parameters of the following groups: civil law, common law, emerging country and developed country (respectively).

In order to examine the effect of the level of shareholder protection (SP) on firm performance, we modify equation (1) as follows:

$$\text{NROA}_{i\,t} = b\, NROA_{i\,t-1} + c\, SP_{i\,t} + \varepsilon_{i.t} \qquad (4)$$

where $SP_{i\ t}$ is the shareholder protection index of country i in time t. The shareholder protection index is the aggregate sum of the ten indicators in Armour et. al. (2009a) (see Table 1).

In order to examine whether firms in different groups of countries experience different persistence and different effect of shareholder protection, we use separate regressions for each group and combine them together with the aid of the same dummy variable technique as above:

$$\text{NROA}_{i\,t} = b_{civ}\, NROA_{i\,t-1} + (b_{com} - b_{civ})\,(\text{NROA}_{i\,t-1} * COM) + c_{civ}\, SP_{i\,t} + (c_{com} - c_{civ})(SP_{i\,t} * COM) + \varepsilon_{i.t} \qquad (5)$$

$$\text{NROA}_{i\,t} = b_{EC}\, NROA_{i\,t-1} + (b_{DC} - b_{EC})\,(\text{NROA}_{i\,t-1} * DC) + c_{EC}\, SP_{i\,t} + (c_{DC} - c_{EC})(SP_{i\,t} * DC) + \varepsilon_{i.t} \qquad (6)$$

where COM is the common law country dummy which takes the value of 1 for common law countries and zero otherwise; DC is the developed country dummy which takes the value of 1 for developed countries and zero otherwise; and c_{civ} , c_{com} , c_{EC} and c_{DC} are the coefficients of SP of the following groups: civil law country, common law country, emerging country, and developed country, respectively.

We replicate the whole set of dummy variable analyses by considering the converse set of dummies, that is, CIV is the civil law country dummy which takes the value of 1 for civil law countries and zero otherwise; and EC is the emerging country dummy which takes the value of 1 for emerging countries and zero otherwise. This helps us to ascertain the exact nature of relationship postulated in

equations (1) and (4) for each group without slicing the whole dataset according to different groups and running separate regression for each one.[4]

6. Empirical Results

We firstly have to ascertain whether the NROA series is stationary. On the basis of a battery of panel unit root tests we can observe that the NROA series is stationary – a temporary shock does not have a permanent effect on the normalized return of a firm (Table 3, see Appendix I).

Next we estimate '*b*' in equation (1). We use a dynamic fixed effect model because estimating an ordinary fixed effect model, one which demeans the series in order to eliminate the firm level heterogeneity, would be inappropriate here as it would introduce a correlation between the error term and the lagged dependent variable ($NROA_{t-1}$). We therefore use the two-step GMM (Generalised Method of Moment) technique; this tackles that problem by introducing lags of the independent variables as instruments. These are reported in Table 4 (see Appendix I).

We observe that in the whole sample of 2,303 firms of 19 countries, there exists a positive relationship between current NROA and the earlier year NROA, confirming positive persistence (Model 1). The estimated value of the persistence parameter, at over .70, is considerably larger than those found in other persistence studies, which reported coefficients of around .50 in developed countries and around .30 in developing countries (Glen and Singh 2005; Mueller 1990).
Our dummy variable analysis shows that firms of common law countries have a significantly higher '*b*': 0.7656 is the estimate of '*b*' for the common law countries while that for the civil law countries is 0.7045. The difference between the two is highly significant as the coefficients of the dummy variable show (Models 2 and 3). The implication is that the NROA of the firms in common law countries is more affected by the past performance (hence showing higher persistence, or less competitive intensity). There is, however, no such difference in persistence between firms in the developed countries and emerging countries in our sample (Models 4 and 5), confirming the findings of Glen and Singh on this point (2003).

We now consider the effects of shareholder protection laws on firms' normalised profitability (NROA). This is non-existent for the whole sample (Model 6). Also, in terms of the developed country-emerging country distinction, we find no statistically significant effect of shareholder protection (Models 9 and 10). However, as the dummy variable analysis shows, shareholder protection is negatively correlated with abnormal profitability in the case of firms from common law countries (Model 7), but positively correlated with abnormal profitability in the case of firms from civil law countries (Model 8). If, consistently with the persistence literature, we take abnormal profitability to be a sign of the non-convergence of profits and hence of lower competitive intensity, we can see that shareholder rights are associated with more product market competition in the common law world, but with less product market competition in civil law ones. Although the relevant estimated coefficients in the two models are statistically highly significant, in economic terms, they have relatively low values, indicating that the effect is likely to be small.

7. Discussion

We set out to study a neglected but important issue in the legal origins literature, namely the relationship between corporate governance, product market competition and innovation. We saw, from our theoretical overview, that opinion was divided on whether corporate governance was beneficial for innovation. Our empirical strategy was to see if different levels of shareholder protection across countries of different legal origin (common law and civil law) were correlated with differences in the persistence of abnormal profits.

We found, firstly, that there was greater abnormal persistence of profits among firms in common law systems than in civil law ones. Secondly, we found that, in the decade to 2005, there was a negative relationship between increased shareholder protection rights and the persistence of profits in common law systems, but a positive one in civil law systems. This is the opposite of the relationship predicted by our first hypothesis.

By focusing on the abnormal persistence of firm-level profits as an indicator of firm performance, we can use a variable which relates not just to the efficiency of the firm in general but specifically to its capacity for serial innovation. If markets were perfectly competitive, abnormally high profits from particular *products* should be competed away over time, but abnormal persistence can also be interpreted as evidence for the presence of innovative *firms* which are successful over time in capturing rents from innovation in respect to products which are developed serially. Our finding that higher shareholder protection reduces the persistence of profits in common law countries and increases it in civil law countries is consistent with the view that increases in legally mandated or encouraged shareholder protection during the 1990s and 2000s had a negative impact on firm-level innovation in common law systems. In civil law systems, which had a lower level of shareholder protection to begin with, by contrast, the effect was positive. This finding is the opposite of the prediction implied by our second hypothesis.

A possible interpretation of our results is an institutional one, in the sense of one referring to the role of national-level institutions, including the legal system, in mediating the effects of corporate governance changes. The legal index we have been using (see Armour et al., 2009a) measures the level of legally-driven shareholder protection in a range of developed and emerging countries over the period 1995-2005. As the data from the index show, this was a period of rapid global convergence – all countries exhibited increased levels of shareholder protection. The key drivers in this were legal changes aimed at enhancing director independence and stimulating, through reform of takeover regulation, a market for corporate control. The assumption of legal reform was that these corporate governance mechanisms would reduce agency costs, increase disciplinary pressures on managers, and, by these means, enhance efficiency. Core features of the Anglo-American approaches to corporate governance – independent boards and the mandatory bid rule in takeover regulation – were at the heart of this process. Thus what we can observe was not so much convergence around a global model of assumed best practice (as contained, for example in the OECD *Principles of Corporate Governance*: OECD, 2004) but, more precisely, the adoption, in the civil law and developing world, of institutional devices originating in the common law, developed world. The civil law world was catching up with the common law one, but the latter also experience a significant increase in the legal support for shareholder rights over the period of the study.

Is it possible to have too much of a good thing in corporate governance (Bruno and Claessens, 2009)? Our finding that increases in shareholder protection had a positive impact on profitability in civil law systems, where protection was lower than in the common law world at both the beginning and the end of the period, suggests that this is indeed the case. Common law countries which already placed emphasis on monitoring by shareholders ratcheted up this pressure in the 1990s and 2000s. This had a negative impact on profits in manufacturing firms, which can be interpreted as evidence of their reduced capacity for serial innovation. By contrast, laws enhancing the accountability of managers to shareholders had the opposite effect in the civil law world. This implies that there is a curvilinear (inverted U) relationship between shareholder rights and firm-level innovation: incremental reforms from a low base of protection may have a beneficial effect, but beyond a certain point they become counter-productive.

Notes

1 Although La Porta et al. argue that increased shareholder protection should lead to greater stock market development, and hence to growth at the level of the firm, they are rightly cautious about drawing the further inference that legal origin is directly linked to growth at the level of national economies, as evidence on this point is lacking (see La Porta et al., 2008).

2 In subsequent studies, alternative codings of the anti-director rights index, which address the issue of its home country bias, have been produced (see Spamann, 2009), and new indices have been developed by La Porta et al. and their co-authors which rest on a more solid evidential base, enabling them to respond to some of the early criticisms of their work (for a review see La Porta et al., 2008: 291-302). However, the dataset developed by Armour et al. (2009a) remains the only one to provide a systematic, longitudinal measure of the law governing shareholder rights.

3 An alternative interpretation of high profit persistence is that it is a sign of competitive success based on innovation (see Demsetz, 1974). Detailed, longitudinal analysis of individual firm performance can clarify the extent to which this is the case (Cable and Mueller, 2008). It is unclear that we should infer the presence of a high rate of product or process innovation among a large population of firms where we observe persistence, as in our current sample. In principle, in a dynamic economy, the profits of firms enjoying a lead thanks to innovation could still be competed away over time as new innovations are brought to the market by business rivals (see the Appendix II, below, for further discussion of this point). We cannot observe the role of innovation in our dataset, and a fuller consideration of the relationship between innovation, firm performance and corporate governance norms lies beyond the scope of the current paper.

4 The basic equation used in the analysis of this paper is equation (4). This equation looks broadly similar to those employed in the persistence of profitability (PP) studies in the industrial organisation field. The relationship between the two methodologies is explained in Appendix II.

5 This Appendix is based on Glen and Singh, 2004.

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Appendix I: Tables and Figures

TABLE 1
SHAREHOLDER PROTECTION INDEX: 10 VARIABLES

VARIABLES	DESCRIPTION OF CODING
1. Powers of the general meeting for de facto changes	If the sale of more than 50% of the company's assets requires approval of the general meeting it equals 1; if the sale of more than 80% of the assets requires approval it equals 0.5; otherwise 0.
2. Agenda setting power	Equals 1 if shareholders who hold 1% or less of the capital can put an item on the agenda; equals 0.75 if there is a hurdle of more than 1% but not more than 3%; equals 0.5 if there is a hurdle of more than 3 % but not more than 5%; equals 0.25 if there is a hurdle of more than 5% but not more than 10 %; equals 0 otherwise.
3. Anticipation of shareholder decision facilitated	Equals 1 if (1) postal voting is possible or (2) proxy solicitation with two-way voting proxy form has to be provided by the company (*i.e.* the directors or managers); equals 0.5 if (1) postal voting is possible if provided in the articles or allowed by the directors, or (2) the company has to provide a two-way proxy form but not proxy solicitation; equals 0 otherwise.
4. Prohibition of multiple voting rights (super voting rights)	Equals 1 if there is a prohibition of multiple voting rights; equals 2/3 if only companies which already have multiple voting rights can keep them; equals 1/3 if state approval is necessary; equals 0 otherwise.
5. Independent board members	Equals 1 if at least half of the board members must be independent; equals 0.5 if 25% of them must be independent; equals 0 otherwise
6. Feasibility of director's dismissal	Equals 0 if good reason is required for the dismissal of directors; equals 0.25 if directors can always be dismissed but are always compensated for dismissal without good reason; equals 0.5 if directors are not always compensated for dismissal without good reason but they could have concluded a non-fixed-term contract with the company; equals 0.75 if in cases of dismissal without good reason directors are only compensated if compensation is specifically contractually agreed; equals 1 if there are no special requirements for dismissal and no compensation has to be paid. Note: If there is a statutory limit on the amount of compensation, this can lead to a higher score.
7. Private enforcement of directors duties (derivative suit)	Equals 0 if this is typically excluded (*e.g.*, because of strict subsidiarity requirement, hurdle which is at least 20%); equals 0.5 if there are some restrictions (*e.g.*, certain percentage of share capital; demand requirement); equals 1 if private enforcement of directors duties is readily possible.
8. Shareholder action against resolutions of the general meeting	Equals 1 if every shareholder can file a claim against a resolution by the general meeting; equals 0.5 if there is a threshold of 10% voting rights; equals 0 if this kind of shareholder action does not exist.
9. Mandatory bid	Equals 1 if there is a mandatory public bid for the entirety of shares in case of purchase of 30% or 1/3 of the shares; equals 0.5 if the mandatory bid is triggered at a higher percentage (such as 40 or 50%); further, it equals 0.5 if there is a mandatory bid but the bidder is only required to buy part of the shares; equals 0 if there is no mandatory bid at all.
10. Disclosure of major share ownership	Equals 1 if shareholders who acquire at least 3% of the companies capital have to disclose it; equals 0.75 if this concerns 5% of the capital; equals 0.5 if this concerns 10%; equals 0.25 if this concerns 25%; equals 0 otherwise

Source: Armour et al. (2009); CBR Shareholder Protection Index, available at http://www.cbr.cam.ac.uk/research/programme2/project2-20output.htm.

TABLE 2
SAMPLE COUNTRIES AND FIRMS

COUNTRY	NUMBER OF FIRMS IN SAMPLE	LEGAL ORIGIN	DEVELOPED OR EMERGING ECONOMY
Argentina	8	Civil	Emerging
Brazil	25	Civil	Emerging
Canada	39	Common	Developed
Chile	17	Civil	Emerging
China	14	Civil	Emerging
France	81	Civil	Developed
Germany	123	Civil	Developed
India	89	Common	Emerging
Italia	31	Civil	Developed
Japan	839	Civil	Developed
Malaysia	59	Common	Emerging
Mexico	21	Civil	Emerging
Pakistan	36	Common	Emerging
South Africa	15	Common	Emerging
Spain	18	Civil	Developed
Sweden	37	Civil	Developed
Switzerland	46	Civil	Developed
United Kingdom	144	Common	Developed
United States	661	Common	Developed
Total	2303		

TABLE 3
FIRMS' NORMALISED RETURN ON ASSETS (NROA): PANEL UNIT ROOT TESTS

A. EXOGENOUS VARIABLES: INDIVIDUAL EFFECTS				
Method	Statistic	Probability	Cross-sections	Observations
Im, Pesaran and Shin W-statistic	-36.6009	0.0000	2303	22973
ADF – Fisher Chi-square	9140.22	0.0000	2303	22973
PP – Fisher Chi-square	9015.44	0.0000	2303	25333
B. EXOGENOUS VARIABLES: INDIVIDUAL EFFECTS, INDIVIDUAL LINEAR TRENDS				
Im, Pesaran and Shin W-statistic	-19.9438	0.0000	2303	21491
ADF – Fisher Chi-square	7943.24	0.0000	2303	21491
PP – Fisher Chi-square	9054.50	0.0000	2303	25333

Note: Null hypothesis is Unit root (assumes common unit root process). Automatic lag length selection based on Schwartz Information Criterion: 0 to 3

TABLE 4
IMPACT OF PAST PERFORMANCE AND SHAREHOLDER PROTECTION ON ABNORMAL PROFITABILITY OF MANUFACTURING FIRMS: DYNAMIC PANEL-DATA ESTIMATION

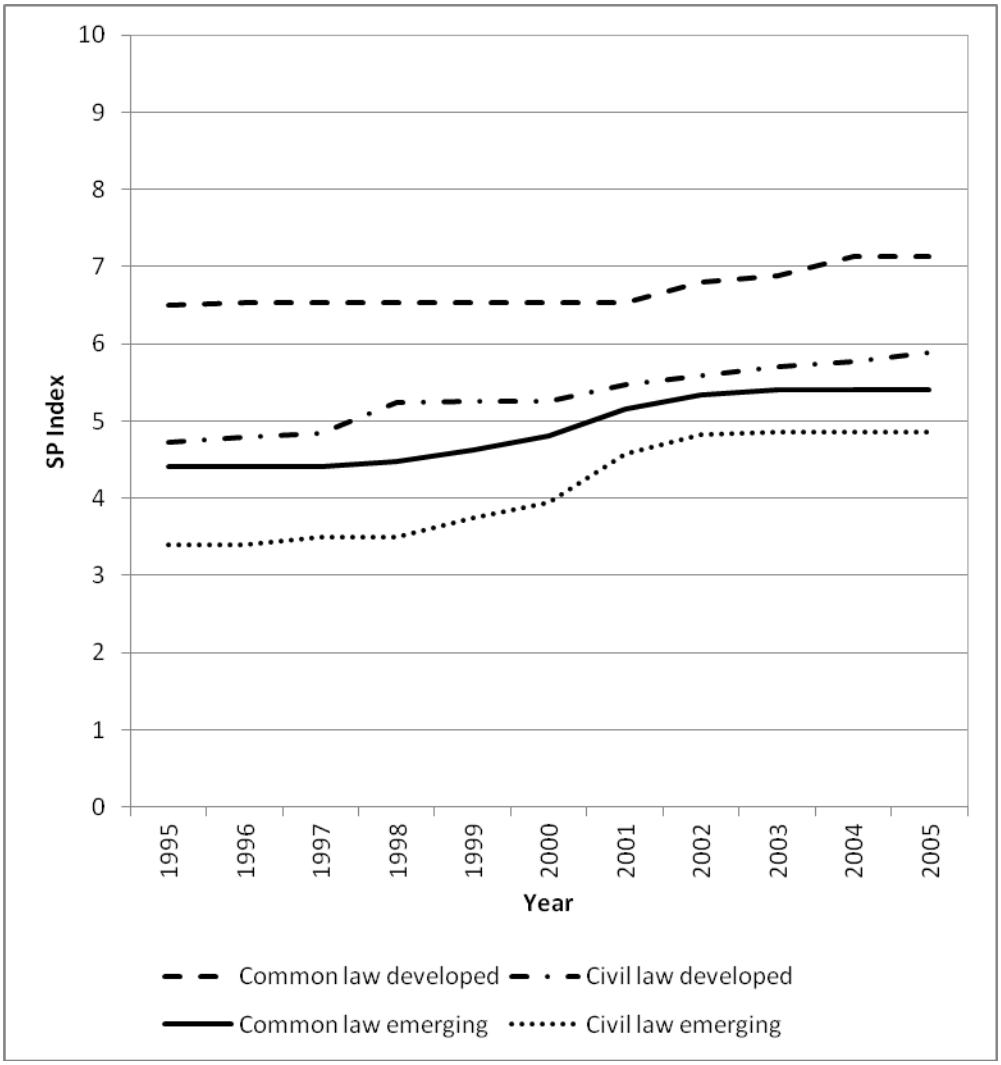
	DEPENDENT VARIABLE = NROA									
MODELS	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
INDEPENDENT VARIABLE										
NROA $_{t-1}$	.7569 ***	.7045 ***	.7656 ***	.7473 ***	.7581 ***	.7567 ***	.7058 ***	.7654 ***	.7466 ***	.7579 ***
	(.0187)	(.0215)	(.0212)	(.0309)	(.0309)	(.0187)	(.0215)	(.0212)	(.0314)	(.0206)
COM x NROA $_{t-1}$		.0611 *					.0596 *			
		(.0302)					(.0301)			
CIV x NROA $_{t-1}$			-.0611 *					-.0596 *		
			(.0302)					(.0301)		
DC x NROA $_{t-1}$				.0108					.0114	
				(.0372)					(.0375)	
EC x NROA $_{t-1}$					-.0108					-.0114
					(.0372)					(.0375)
$SP_{j\,t}$						-.0001	0.0001 **	-.0003 **	-.0002	-.0001
						(.0000)	(.0000)	(.0001)	(.0002)	(.0000)
COM x $SP_{j\,t}$							-.0003 **			
							(.0001)			
CIV x $SP_{j\,t}$								.0003 **		
								(.0001)		
DC x $SP_{j\,t}$									.0001	
									(.0002)	
EC x $SP_{j\,t}$										-.0001
										(.0002)
Adjusted R^2	0.3251	0.3259	0.3259	0.3250	0.3250	0.3252	0.3262	0.3262	0.3251	0.3251

Note: Robust standard error are in parentheses. Our estimates are efficient for arbitrary heteroskedasticity and autocorrelation (automatic band-width selection according to Newey-West). The Hansen J-statistic supports the proposition that all the equations are exactly identified. The Kleibergen-Paap LM statistic shows that none of the equations are under-identified (these are not reported here but are available on request).

Sample (adjusted): 1996- 2005
Periods included: 10
Cross-sections included: 2303
Total panel (balanced) observations: 23,030.

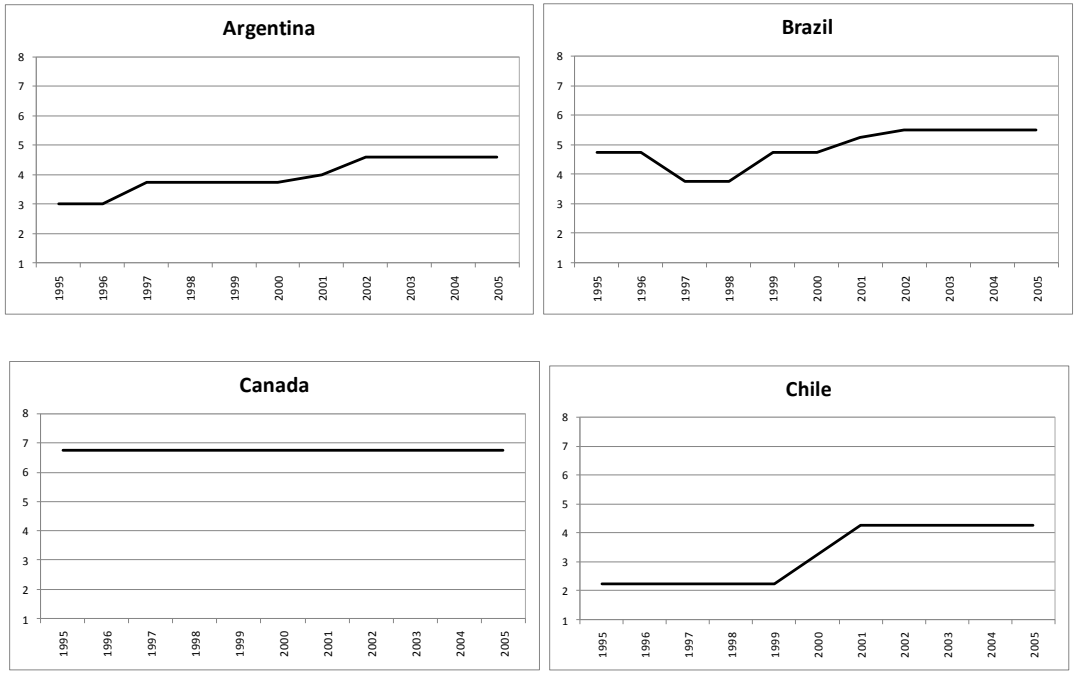
* Significant at 5 per cent level; ** Significant at 1 per cent level; *** Significant at 0.1 per cent level.

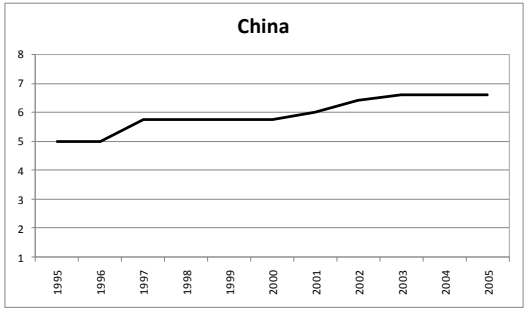
FIGURE 1
SHAREHOLDER PROTECTION BY LEGAL ORIGIN AND LEVEL OF DEVELOPMENT, 1995-2005



Source: Armour et al. (2009); CBR Shareholder Protection Index, available at http://www.cbr.cam.ac.uk/research/programme2/project2-20output.htm

FIGURE 2
SHAREHOLDER PROTECTION 1995-2005: INDIVIDUAL COUNTRY SCORES

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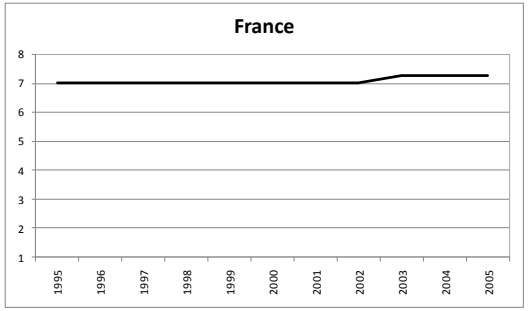
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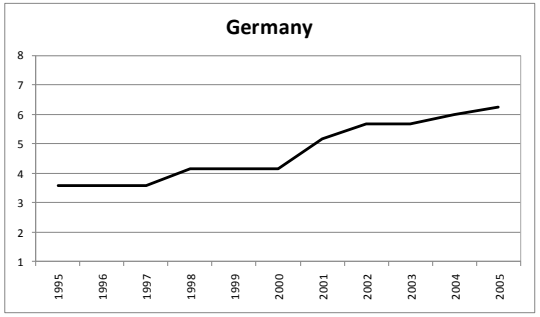
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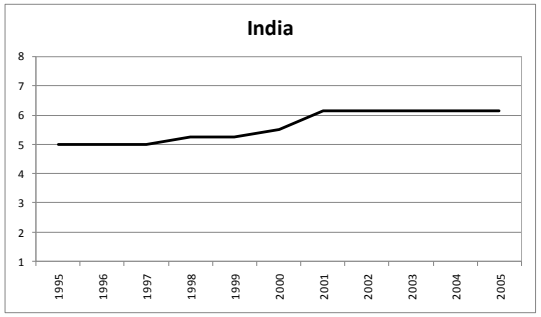
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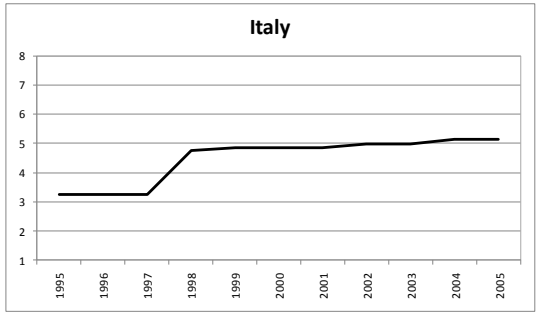
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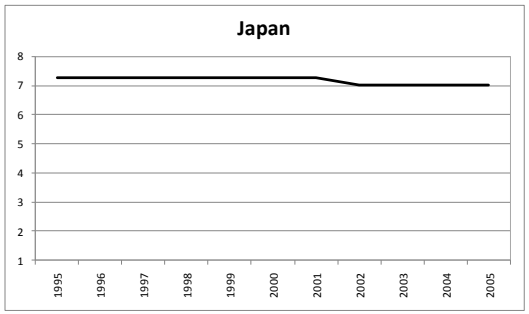
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APPENDIX II[5]

Persistence of Profitability Methodology

It will be recalled that the PP methodology involves fitting the following autoregressive equation applied to the time series of profitability of individual firms:

(a1) $\pi_{i,t} = \alpha_i + \lambda_i \pi_{i,\, t-1} + \mu_{i,t}$,

where, $\pi_{i,t}$ is the profitability of firm i at time t, i = 1,….,m, t = 1,…..,T. $\mu_{i,t}$ is the usual error term and α_i and λ_i are the model parameters. λ_i indicates the speed of adjustment; if $\lambda_i < 1$, the long-run (permanent) profitability level of firm i is given by:

(a2) $\pi_{i,p} = \alpha_i / (1-\lambda_i)$.

As is usual in PP studies, to control for business cycles and other macroeconomic shocks, the regression analysis is conducted in terms of the variable $Y_{i,t} = \pi_{i,t} - \pi_t$, where π_t is the average of the $\pi_{i,t}$ across firms. The measure Y_{it} represents the deviation of firm i's profitability at time t from the profitability of all other firms in the country at that time. The analysis is based on models of the form:

(a3) $Y_{it} = \alpha_i + \lambda_{1i}\, Y_{i(t-1)} + \lambda_{2i}\, Y_{i(t-2)} + \varepsilon_{it}$,

where α_i, λ_{1i}, and λ_{2i} are coefficients and the εit are random errors. Glen, Lee and Singh (2003) studied the persistence of profitability in seven emerging countries using equation (a3). The empirical analysis showed that this model with two time lags was sufficient to capture the dynamics in *all* countries included in the authors' sample.

From Equation (a3), the statistic $Y_{iLR} = \alpha_i/(1-\lambda_{1i}-\lambda_{2i})$ can be derived to indicate firm
i's long-term profitability relative to the country average. If $\lambda_{2i} = 0$, then the estimate
of λ_{1i} provides a direct measure of the speed of adjustment of profitability following a
shock. Assuming $\lambda_{1i} \in (0,1)$, adjustment to equilibrium is monotonic. Where λ_{2i} is not zero or $\lambda_{1i} \in (-1, 0)$, adjustment is nonmonotonic and there is no unique way of characterizing its speed based on the estimated parameters.

Equations (a1) to (a3) are similar in some respects, but importantly different in other respects, from equation (4) that underlies the methodology used in this paper. The difference arises from the fact that, in this paper, we are interested not

only in studying the persistence of profitability, but also the role of corporate governance and legal origin and their interactions with the former.

The intuition behind these methodologies is as follows:
In the course of its evolution a firm may acquire (in the Schumpeterian manner) a temporary advantage in some sphere of its activity, which may allow it to earn above normal profits in that period. If nothing else changes, the abnormal profits will continue to be earned also in subsequent periods. However following Schumpeter, things will not remain the same. There will be competition from imitators, which may compete away the abnormal profits. However long it takes for the abnormal profits to be competed away is a measure of the intensity of short-term competition in this paradigm, whether one uses equation (4) or equation (3a) as a basis of the analysis.

An important difference between the PP and our analysis is that in the former there is no long run equilibrium to which all companies tend. Different long run equilibrium positions for individual firms will depend upon barriers to entry to which different firms are subject. These factors allow firms to earn above or below average profits in perpetuity as it were. In other words, unlike the short-term barriers to competition, which are whittled away normally in one to three years, the long-term barriers could go on forever. However, the latter have not been studied in this paper.