

Profitability or Longevity? Cross-Country Variations in Corporate Performance*

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Abstract

Using the data of firms listed in the *Fortune Global 500* from 1980 to 2010, we compare the performance of the world's largest industrial corporations across 46 countries. We focus on two dimensions of corporate performance: *profitability* and *longevity*. We find significant variations in both profitability and longevity measures across countries. We also observe that firms in some countries are highly (less) profitable but less (more) likely to survive in the Top 500 firms. We regress profitability and longevity measures on country-level institutional factors: financial system, law, and national cultures. We find that (i) market-based (bank-based) financial system is positively (negatively) related to a firm's profitability but negatively (positively) related to its longevity, (ii) strong shareholder (creditor) rights are positively (negatively) related to the profitability but negatively (positively) related to the longevity, (iii) high individualism, low uncertainty avoidance and low long-term orientation are positively related to the profitability but negatively related to the longevity. These results suggest that a country's formal and informal institutions significantly affects a firm's objectives, behavior, and performance.

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I. Introduction

This paper investigates the performance of the world's largest industrial corporations around the world. In particular, we focus not only a firm's *profitability* and but also its *longevity* as a dimension of corporate performance. Using the data of manufacturing firms listed in the *Fortune Global 500* from 1980 to 2010, we compare a firm's profitability and longevity across countries and see whether there are cross-country variations even in the performance of the world's largest corporations. Then we explore whether these variations can be explained by country-specific institutional factors such as financial system, law, and national culture. The study provides evidence on international differences in corporate performance and also gives an insight into the relation between a country's institutional environments and a firm's objectives, behavior, and performance.

Analyzing the data, we found significant variations in both a firm's profitability and longevity across countries. Interestingly, firms in some countries (e.g. Britain and U.S.) are highly profitable but less likely to survive in the top global 500 firms; firms in other countries (e.g. France, Germany, and Japan) are less profitable but more likely to survive in the top 500 firms. We also found that country-specific institutional factors affect corporate performance. First, a country's financial system matters; market-based (bank-based) financial system is positively (negatively) related to a firm's profitability but negatively (positively) related to its longevity. Second, a country's law also affects performance; strong shareholder rights (creditor rights) are positively (negatively) related to the profitability but negatively (positively) related to the longevity. Third, national culture significantly influences performance; high individualism, low uncertainty avoidance and low long-term orientation are positively related to the profitability but negatively related to the longevity. These results suggest that each country-specific institutional factor has an advantage in one dimension of corporate success but a disadvantage in the other.

The paper is organized as follows. In Section II, we describe our sample firms. In Section III we explain two performance dimensions of our study, profitability and longevity. Section IV examines cross-country variations in corporate performance. Section V explores the effect of country-specific institutional factors on corporate performance. Section VI provides concluding remarks.

II. Sample

Our sample firms are manufacturing firms in the world that are included in one of the three lists of *Fortune* magazine, *Fortune Global 500*, *Fortune 500*, and *Fortune International 500*, from 1980 to 2010. We divide the sample period into two sub-sample periods, 1980-1994 and 1995-2010.

The sample firms for the latter period are those included in the *Fortune Global 500* from 1995 to 2010. Since 1995, *Fortune* magazine annually announces the 500 largest companies (in all sectors all over the world) ranked by sales (in U.S. dollars) as the *Fortune Global 500*. Every year from 1995 to 2010, we selected only manufacturing firms in this list as our sample firms for the 1995-2010 period. The firm-year sample size for this period is 3,083.

The sample firms for the former period (1980-1994) are those listed in *Fortune Global 500* from 1990 to 1994 and *Fortune 500* (or *Fortune International 500*) from 1980 to 1989. From 1990 to 1994, *Fortune* announced each year the 500 largest companies in manufacturing sector (not all sectors) in the world ranked by sales as *Fortune Global 500*. We chose these 500 firms as our sample firms for 1990-1994. Before 1990, *Fortune* had announced every year the 500 largest manufacturing firms in the U.S. (*Fortune 500*) and the 500 largest manufacturing firms outside the U.S. (*Fortune International 500*), separately. Therefore we combined these two lists and chose the 500 largest manufacturing firms in the world ranked by sales (in U.S. dollars) for each year and made our list of the *Fortune Global*

500 as our sample for 1980-1989. Then, the firm-year sample size for the 1980-1994 period is 7,500 (500 firms \times 15 years).

In the *Fortune* lists, the following data are available for each sample firms: sales, net profits, total assets, stockholder's equity, the number of employees, industrial classification, country, and information on M&A, spin-off, bankruptcy, and company's name changes. We utilized these data for our analyses.

III. Two performance dimensions: profitability and longevity

We focus on two dimensions of corporate performance in this paper. The first one is *profitability*. It has long been argued that making profits is the main goal of the company in capitalism countries. Indeed, profitability is well-known measure of corporate performance and commonly used in mass-media articles and academic research. We define three variables of profitability, ROS (return on sales; net profits / sales), ROA (return on assets; net profits / total assets), and ROE (return on equity; net profits / stockholder's equity). The data for the calculation of these variables are taken from *Fortune* magazine

The other dimension of corporate performance is *longevity*. Growth and continuity of the business are also leading goals of the company across countries (Hofstede, et al. 2002). In modern corporations, there are various stakeholders other than shareholders, such as employees, customers, vendors, and local community. While the value they obtain from a firm differs from one stakeholder to next (e.g., job security for employees, post-purchase services for customers, continuation of business transactions for vendors, and employment opportunities for communities), these values are not realized if a firm does not continue to exist and the values are usually proportional to a firm's growth. It means that firm continuity and long-term viability are commonly desired by various stakeholders of the firm and considered as one of the important business goals in practice (Hirota 2015). Indeed, Mayer

(2013) considers “longevity and the survival of the corporation as indicators of corporate success” (p. 155).

We measure a firm’s longevity by three measures: (1) the number of years for which a firm is listed in the *Fortune Global 500* during the following 10 years (hereafter referred as to “the number of listed years in Top 500”), (2) whether a firm is still listed in the *Fortune Global 500* ten years later (hereafter referred as to “survival or not in Top 500”), and (3) whether a firm is acquired by other firms for the following 10 years (hereafter referred as to “acquired or not”).^{4 5} The first and second measures (the number of listed years in Top 500, survival or not in Top 500) reflect firm continuity and growth, because a firm does not remain in *Fortune Global 500* list if the firm discontinues or does not attain steady growth. The third measure (acquired or not) is an inverse indicator of a firm’s longevity because a firm is not considered to continue when it is acquired by other firm. The data for these three measures are obtained from *Fortune* magazine.

IV Cross-country variations in corporate performance

Profitability

Table 1 summarizes the profitability measures of our sample firms. All numbers in the table are the average for each category (except the column of Firm-year Observations). To reduce the effect of outliers, each profitability measure is winsorized at the 1st and 99th percentiles. Panel A shows the averages of ROS, ROA, and ROE for full sample. The

⁴ As a specific example, consider Company X in *Fortune Global 500* list in 1998. The first measure (the number of listed years in Top 500) specifies how many years in which X is in the list from 1999 to 2008. The second measure (survival or not in Top 500) examines whether X is still in the list of 2008. The third measure (acquired or not) sees whether a firm is acquired by other firms from 1999 to 2008.

⁵ Gospel and Fielder (2013) collect the data of the top 100 firms in the world (measured by employment) at five points of time from 1907 to 2002. They examine the probability of survival in the top 100 for both entire period and sub-periods. They show that only 11 (of 100) firms survive in the top 100 from 1907 to 2002.

average of ROS, ROA, and ROE are 3.29%, 3.81%, and 9.81%, respectively, for the 1980-1994 period; it is 5.15%, 4.61%, and 13.32%, respectively, for the 1995-2010 period.

Panel B shows the averages of the profitability measures by country. We observe significant cross-country variations in profitability. For example, for the 1980-1994 period, U.S. firms' (average) ROS, ROA, and ROE is 4.42%, 5.34%, and 11.90%, respectively; as for Britain firms, it is 4.25%, 5.19%, and 13.17%, respectively. These U.S. and Britain numbers are all higher than the averages for full sample shown in Panel A. In contrast, the profitability measures of France, Germany, and Japan are lower than world's averages (for example, the average ROS, ROA, and ROE of Japanese firms are 1.94%, 2.00%, and 6.96%, respectively). High profitability for U.S. and Britain firms and low profitability for French, German, and Japanese firms are also observed for the 1995-2010 period.

Figures 1A and 1B draw the median ROA by major ten countries for the 1980-1994 period and 1995-2010 period. These figure confirms that U.S. and British firms are highly profitable and German, Japanese, and French firms are less profitable. The figures also show that Swiss and Swedish firms are profitable for both periods.

Longevity

Table 2 describes the longevity measures of our sample firms. In the left half of the table, we see firm longevity during the 1980-1994 period. More accurately, we picked up the 1980-1984 sample and examined "the number of listed years in Top 500", "survival or not in Top 500", and "acquired or not" in the following ten years. Similarly, in the right half of the table, we see firm longevity during the 1995-2010 period by examining these three longevity measures for 1995-2000 sample.

Panel A presents the average of the number of listed years in Top 500, the proportion of firms of survival in Top 500, and the proportion of firms of being acquired for full sample. For the 1980-1984 sample, the average number of listed years in Top 500 is 7.99 years,

which indicates that sample firms are listed in Top 500 in about 8 of 10 following years on average. The proportion of firms of survival in Top 500 is 71.7%, which means that about 70% of sample firms still remain in the list of Top 500 ten years later. The proportion of firms of being acquired is 9.5%, which shows that about one-tenth of firms are acquired and discontinues to exist within ten years. These three numbers of longevity measures do not change considerably for 1995-2000 sample.

Panel B shows the longevity measures by country. We observe significant cross-country variations in firm longevity. For example, for the 1980-1984 sample, U.S. firms' average number of listed years in Top 500 is 7.73 years and the proportion of their firms of survival in Top 500 is 65.5%, and these two numbers are lower than the world's averages (7.99 years; 71.7%). As for British firms, these two numbers are 7.35 years and 62.3% and lower than the world average as well. Also U.S. and British firms are more likely to be acquired by other firms. The proportion of firms of being acquired is 15.0% and 10.1%, respectively, and both numbers are higher than the proportion of acquired firms for full sample (9.5%). These observations are also true for 1995-2000 sample.

In contrast, French, German, and Japanese firms show high degree of longevity. For example, for the 1980-1984 sample (1995-2000 sample), the average number of listed years in Top 500 is 8.17 (7.93), 8.61 (7.95), and 9.57 (7.75), respectively. The proportion of firms of survival in Top 500 is 80.8% (67.0%), 82.4% (75.5%), and 97.4% (70.7%), respectively. These numbers of the three countries are mostly higher than those for full sample.

Figures 2A and 2B draw the proportion of firms of survival in Top 500 for ten major countries for both 1980-1994 period and 1995-2010 period. We observe that the proportion is higher for Japan, Germany and France than U.S. and Britain. The figures also indicate that the proportion is also high for Swiss and Swedish firms.

Comparing Tables 1 to 2, it is interesting to notice that U.S. and British firms are highly profitable (Table 1) but less likely to continue or stay in Top 500 (Table 2); French, German, and Japanese firms are less profitable (Table 1) but more likely to attain steady growth and remain in Top 500 (Table 2). This result implies that two dimensions of corporate performance, profitability and longevity, are not necessarily positively correlated each other. This suggests that we should look at both profitability and longevity dimensions for cross-country comparison of corporate performance. In addition, in Figures 1A, 1B, 2A and 2B, we also saw that firms in some countries (Switzerland and Sweden) attain both high profitability and longevity. In any case, it seems plausible to predict that a firm's profitability and longevity are influenced by country characteristics. We conjecture that the country's institutional environment in which a firm operates shapes its behavior and affects two dimensions of corporate performance. We empirically explore these possibilities in the next section.

Industry effect or country effect?

Before moving to the next section, we distinguish the country effect from the industry effect. Observing cross-country differences in profitability and longevity, one may wonder if these performance differences stem not from the differences in country characteristics but from the differences in industry composition of firms in each country. To address this issue, we regress profitability variables and longevity measures on industry dummies and/or country dummies and see how much variation in performance measures can be explained by a firm's industry classification and its country classification.⁶

⁶ Industry classification of sample firms follows two-digit SIC codes.

The results of ROA regressions and the results of “Survival or not in Top 500” regressions are reported in Tables 3A and 3B, respectively.⁷ While ROA regressions are conducted by OLS, the Survival regressions are conducted by Probit estimation. In both tables, “yes” indicates that dummies in that row are included in the regression. Model 1 includes industry dummies; Model 2 includes country dummies; Model 3 includes both industry and country dummies; all models include year dummies to control for year effects.

In Table 3A, we find that country dummies explain more of the variance in ROA than industry dummies. For example, for the 1980-1994 period, the adjusted R^2 of Model 2 (0.187) is about 1.5 times the adjusted R^2 of Model 1 (0.126). Also note that adding country dummies to the industry dummies regressions increases the adjusted R^2 of ROA regression. For example, for the 1980-1994 period, the adjusted R^2 of Model 3 (0.246) is about twice the adjusted R^2 of Model 1 (0.126). In Table 3B, we also find that country dummies have effects on the probability of Survival. For both periods, the pseudo R^2 is the highest in Model 3. These results suggest that country classification of the firm significantly affects profitability and longevity of the firm, after controlling the industry effects. Country matters even for the performance of the world’s largest corporations.

V. Do a country’s institutional factors affect corporate performance?

Williamson (2000) states that formal and informal institutions of the economy and society significantly influence economic agents’ decisions, actions and outcomes. We consider three country-specific institutional factors that affect corporate performance: financial system, law, and national culture.

⁷ The results of regressions of the other two profitability measures (ROS and ROE) are similar to those of ROA regressions. The results of regressions of the other two longevity measures (“The number of years listed in Top 500” and “Acquired or not”) are similar to those of “Survival or not in Top 500” regressions.

Financial System

Observing financial systems of countries around the world, we find various differences in terms of laws, institutions, and custom. Recent researchers classify the financial systems of countries into market-based systems and bank-based systems (Demirguc-Kunt and Levine 2001).

The market-based system is where financial transactions in a country are mainly conducted through capital markets such as stock and bond markets. In capital markets, numerous participants engage in financial transactions at arm's length. The supplier and demander of funds enter into a one-time transaction on a spot basis, and there is no need for them to continue conducting transactions with the same partner. The supplier of funds (investors) usually hold multiple assets to diversify their investment risk; the demander of fund (such as firm) issue the standardized securities (e.g. stock and bond) to raise money from a large number of investors. Sometimes even ownership of the firm is traded via M&A market transactions.

The bank-based system is where financial transactions in a country are mainly conducted through financial intermediation by banks. Banks receive deposits and provide loans to firms, and lending is conducted through one-on-one negotiated transactions. A continual transactional relationship arises between the bank and firms. In the bank-based system, since capital markets are less developed, M&A transaction are less likely to occur compared to the market-based system.

We expect that a firm's profitability tends to be higher in countries with market-based system than countries with bank-based system. In market-based system, shareholders are one of the main supplier of funds and they seek for higher returns and profitability. Also, since shareholders usually diversify their investment risk, they encourage each firm's risk taking, which is likely to realize a firm's higher (expected) profitability. In bank-based system, banks

expect a firm to realize stable returns rather than higher (but riskier) returns because payoff of loan is contractually fixed to interest and principal. Therefore firms' profitability in bank-based system would not be as high as that in market-based system.

In contrast, a firm's longevity is more likely to be observed in countries with bank-based system than countries with market-based system. In bank-based system, firms tend to take less risk, which realizes the stability of outcome. Also, as banks have continual relationships with their client firms, they prefer a firm's long-term viability. These factors enable firms more likely to survive in bank-based system compared to market-based system. In addition, M&A market is not as active as that in market-based system, and firm is less likely to be acquired. This also enhances a firm's longevity in countries with bank-based system.

To summarize, we have the following hypotheses on the relation between a country's financial system and a firm's profitability and longevity.

H1a: Market-based (bank-based) financial system is positively (negatively) related to a firm's profitability

H1b: Bank-based (market-based) financial system is positively (negatively) related to a firm's longevity.

Law

Law and finance literature claims that common law provides better protection of shareholder rights than civil law countries (La Porta et al. 1998). It suggests that in common law countries shareholders have more power to make managers to implement riskier but value-enhancing investments. La Porta et al. (2002) show that Tobin's Q is higher in common law countries than civil law countries and that the measure of legal protection of minority shareholder rights (anti-director rights) is also positively related to Tobin's Q. In addition,

John et al. (2008) report that companies take more risk and show higher productivity in common law countries and countries with better protection of minority shareholders. Therefore, we predict that strong shareholder rights are positively related to a firm's profitability.

Strong shareholder rights, however, may inhibit firm longevity. With strong shareholder rights, firms take more risks and the outcomes become more volatile, and they would be less likely to survive. Therefore, it is possible that strong shareholder rights have a negative effect on firm longevity.

Acharya et al. (2011) report that having strong creditor rights in a country leads firms to reduce risk but hurt profitability. Thus, we predict that strong creditor rights have a negative effect on firm profitability and a positive effect on longevity.

Summarizing, we have the following hypotheses on the relation between a country's law and a firm's profitability and longevity.

H2a: Strong shareholder rights are positively related to a firm's profitability and negatively related to a firm's longevity.

H2b: Strong creditor rights are negatively related to a firm's profitability and positively related to a firm's longevity.

National culture

Several literature suggests that national culture significantly affect corporate decision-making in finance, investment, and accounting (e.g., Ahern et al. 2015, Chui et al. 2002, Hope 2003, Li et al. 2013, Mihet 2013, Shao et al. 2010, Zheng et al. 2012, Zingales 2015). Most of these studies use Hofstede's (2001) four cultural dimensions, individualism, uncertainty avoidance, power distance, and masculinity, as proxies for national culture and explore the relation between these indexes of cultural dimensions at national level and

corporate behavior at firm level. Following prior research, we also use the indexes of two of Hofstede's (2001) cultural dimensions (individualism and uncertainty avoidance) and the index of Hofstede's (2010) new dimension, long-term orientation, that are likely to affect a firm's profitability and longevity.

Individualism is defined as "a society in which the ties between individuals are loose. Everyone is expected to look after himself and his immediate family only. Collectivism stands for a society in which people from birth onwards are integrated into strong, cohesive in-groups, which throughout people's lifetime to continue to protect them in exchange for unquestioning loyalty (Hofstede 2001)." In high individualistic societies, people is more likely to pursue their own success and be willing to take risks. These tendencies would be observed even in corporate behavior. Indeed, Li et al. (2013) and Mihet (2013) show that corporate risk-taking is higher in countries with high individualism. Therefore, we expect that firms are more profitable in highly individualistic countries. In contrast, firms are less likely to survive in those countries since they incur higher risk. In contrast, as for a firm's longevity, collectivism countries would have a superiority over individualistic countries, because people put more emphasis on the continuity of a firm that is the group they belong to.

Uncertainty avoidance is defined as "feeling uncomfortable with uncertainty and ambiguity, and therefore valuing beliefs and institutions that provide certainty and conformity (Hofstede 2001)". Therefore, it is plausible that people in high uncertainty avoidance countries tend to avoid risk. Li et al. (2013) and Mihet (2013) provide the evidence that firms in high uncertainty avoidance countries are less likely to take risk. Therefore we predict that high uncertainty avoidance is negatively related to a firm's profitability but positively related to a firm's longevity.

Long-term orientation is defined as "[it] stands for the fostering virtues oriented towards future rewards—in particular, perseverance and thrift (Hofstede 2010)". Hofstede

(2010) claims that in high long-term orientation countries (especially in Asia) companies invest in building up strong market positions at the expense of immediate results; in short-term orientation countries companies are more concerned about the results of the past month, quarter, or year. This indicates that high long-term orientation is negatively related to a firm's profitability but positively related to a firm's longevity.

Summarizing, we have the following hypotheses on the relation between a country's culture and a firm's profitability and longevity.

H3a: High individualism is positively related to a firm's profitability and negatively related to a firm's longevity.

H3b: High uncertainty avoidance is negatively related to a firm's profitability and positively related to a firm's longevity.

H3c: High long-term orientation is negatively related to a firm's profitability and positively related to a firm's longevity

Regression variables

To test these hypotheses, we regress the profitability variables and longevity measures on the variables for a country's financial system, law, and culture. The profitability measures are ROS, ROA, and ROE, and the longevity measures are "Number of Listed Years in Top 500", "Survival or not in Top 500" (1 or 0), and "Acquired or not" (1 or 0). The variables for country's institutional factors as follows

[Variables for financial system]

Market-based: Dummy variable which takes 1 if a country is classified as market-based economies and 0 if a country is classified as bank-based economies by Demircuc-Kunt and Levine (2001)

Market-cap / GDP: Market capitalization of listed domestic companies as a percentage of GDP (source: *World Development Indicators and Financial Structure Database* of the World Bank).

Bank credit / GDP: Domestic credit to private sector by banks as a percentage of GDP (source: *World Development Indicators and Financial Structure Database* of the World Bank).

[Variables for law]

Common Law: Dummy variable which takes 1 for common law countries and 0 otherwise (source: La Porta et al. 1998).

Anti-self-dealing index: Measure of legal protection of minority shareholders by Djankov et al. (2008)

Creditor rights: Measure of legal protection of creditor rights by La Porta et al. (1998)

[Variables for national culture]

Individualism: Individualism index by Hofstede et al. (2010).

Uncertainty avoidance: Uncertainty avoidance index by Hofstede et al. (2010).

Long-term orientation: Long-term orientation index by Hofstede et al. (2010).

As for control variables of profitability regressions, we use the country's annual GDP growth rate (from *World Development Indicators and Financial Structure Database*), firm size (ln Size: logarithm of total assets from *Fortune* magazine), We also add the country's corporate tax rate for the regressions for the 1995-2010 period in which the data are available from *KPMG's Corporate Tax Rate Survey*. To longevity equations, we add the country's rate of GDP growth for the following ten years (calculated as the annual rate), firm size, firm's

Fortune rank (1-500). Industry and year dummies are added to both profitability and longevity regressions.

Descriptive Statistics of country's variables and the averages of firm's variables by country are summarized in Table 4.

All profitability regressions are estimated by OLS (standard errors are computed assuming observations are not independent at firm level). The regressions of "Number of Listed Years in Top 500" are estimated by Tobit model since the dependent variable is from 0 to 10. The regressions of "Survival or not in Top 500" (1 or 0) and "Acquired or not" (1 or 0) are estimated by Probit model since the dependent variables are binary variables.

Regression results

Table 5 presents the regression results on the effect of financial system on a firm's profitability measures (ROS, ROA, and ROE). Looking at the left half of the table (the 1980-1994 period), we find that *Market-based* (dummy variable for market-based countries) has significant positive effects on ROS, ROA, and ROE. *Market-cap / GDP* also has significant positive effects on three profitability measures. In contrast, *Bank credit / GDP*, the measure of bank dominance in financial system, has negative effects on profitability. These results support H1a: market-based (bank-based) financial system is positively (negatively) related to a firm's profitability. For the 1995-2010 period (right half of the table), we obtained qualitatively same results.

Table 6 shows the regression results on the effect of financial system on firm's longevity. We find that market-based system has negatively effects on firm longevity. For the 1980-1994 period, the coefficients of *Market-based* dummy are significantly negative in "Number of Listed Years in Top 500" and "Survival or not in Top 500" regressions. This suggest that firms in market-based countries are less likely to survival in the Top 500 firms

for the following years. In addition, *Market-based* dummy has a significant positive effect on “Acquired or not”, which indicates that firms in market-based economies are more likely to be acquired by other firms. We also observe that *Market-cap / GDP* has significant negative effects on “Number of Listed Years in Top 500” and “Survival or not in Top 500” and significant positive effects on “Acquired or not”. In contrast, Bank credit / GDP has significant positive effects on “Number of Listed Years in Top 500” and “Survival or not in Top 500” and significant negative effects on “Acquired or not”. This result suggests that firms in bank-based countries are more likely to survive in the Top 500 and less likely to be acquired by other firms. For the 1995-2010 period, we obtained similar results (but at lower significance levels for some coefficients). These results support H1b: bank-based (market-based) financial system is positively (negatively) related to a firm’s longevity.

Table 7 presents the effect of law on a firm’s profitability. For both 1980-1994 and 1995-2010 periods, *Common law* (dummy variable for common law countries) and *Anti-self-dealing index* have significantly positive effects on all three profitability measures. This indicates that the strong shareholder protection leads to high profitability of a firm. In contrast, *Creditor rights* has negative effects on profitability measures (significant in three of six regressions).

Table 8 shows the effect of law on a firm’s longevity. *Common law* and *Anti-self-dealing index* have significantly negative effects on “Number of Listed Years in Top 500” and “Survival or not in Top 500” and positive effects on “Acquired or not” (significant in three of four regressions). This suggests that strong shareholders rights tend to hurt a firm’s longevity. *Creditor rights* has positive effects on “Number of Listed Years in Top 500” and “Survival or not in Top 500” (significant for the 1980-1994 period) and significant negative effects on “Acquired or not”. This indicates that strong creditor rights lead to a firm’s longevity.

The results of Tables 7 and 8 support H2a and H2b: strong shareholder rights are positively related to a firm's profitability and negatively related to a firm's longevity; strong creditor rights are negatively related to a firm's profitability and positively related to a firm's longevity.

Tables 9A and 9B presents the regression results on the effect of national culture on a firm's profitability (for the 1980-1994 period and for the 1995-2010 period, respectively). Both tables show that *individualism* index has significant positive effects on profitability; *uncertainty avoidance* and *long-term orientation* indexes have significant negative effect on profitability.

Tables 10A and 10B shows the relation between national culture and a firm's longevity. We find that *individualism* index is negatively related to a firm's longevity; it has significant negative effects on "Number of Listed Years in Top 500" and "Survival or not in Top 500" and significant positive effects on "Acquired or not". In contrast, *uncertainty avoidance* and *long-term orientation* indexes is positively related to a firm's longevity; it has significant positive effects on "Number of Listed Years in Top 500" and "Survival or not in Top 500" and significant negative effects on "Acquired or not".

The results of Tables 9A, 9B, 10A, and 10B support the hypotheses on the effect of national culture on corporate performance, H3a, H3b, and H3c. In high individualism countries a firm's profitability tends to be high but a firm's longevity tend to be low. In high uncertainty avoidance and high long-term orientation countries, a firm's profitability tends to be low but a firm's longevity tends to be high.

Overall, the regression results show that a country-specific institutional factors, such as financial system, law, and national culture, significantly affect corporate performance. Interestingly, some institutional factors (such as market-based financial system, strong shareholder rights, and individualism) have positive effects on a firm's profitability but

negative effects on a firm's longevity. Other factors (such as bank-based financial system, strong creditor rights, uncertainty avoidance, and long-term orientation) have negative effects on a firm's profitability but positive effects on a firm's longevity. This suggests that each country-specific institutional factor has an advantage in one dimension of corporate success but a disadvantage in the other.

V. Concluding remarks

Using the data of firms listed in the *Fortune Global 500*, this paper compares the performance of the world's largest companies across countries. We found significant cross-country variations in profitability and longevity measures. We also found that country-level institutional factors, such as financial system, law, and national cultures, are significantly related to a firm's profitability and longevity. These results suggest that a country's formal and informal institutions affect a firm's objectives, behavior, and performance.

References

- Ahern, K. R., D. Daminelli, and C. Fracassi (2015). Lost in Translation? The Effect of Culture Values on Mergers around the World. *Journal of Financial Economics* 117, 165-189.
- Acharya, V. V., Y. Amihud, and L. Litov (2011). Creditor Rights and Corporate Risk-Taking. *Journal of Financial Economics* 102, 150-166.
- Chui, A. C. W., A. E. Lloyd, and C. C. Y. Kwok (2002). The Determination of Capital Structure: Is National Culture a Missing Piece to the Puzzle?. *Journal of International Business Studies* 33, 99-127.
- Demirguc-Kunt, A. and R. Levine (2001). Bank-based and Market-based Financial Systems: Cross-Country Comparisons. in A. Demirguc-Kunt and R. Levine (eds.). *Financial*

- Structure and Economic Growth: A Cross-Country Comparison of Banks, Markets, and Development*. The MIT Press.
- Djankov, S., R. La Porta, F. Lopez-de-Silanes, and A. Shleifer (2008). The Law and Economics of Self-Dealing. *Journal of Financial Economics* 88, 430-465.
- Gospel, H. and M. Fiedler (2013). The Long-Run Dynamic of Big Firms. in G. Dosi and L. Galambos (eds.). *The Third Industrial Revolution in Global Business*. Cambridge University Press.
- Hirota, S. (2015). *Corporate Finance and Governance in Stakeholder Society: Beyond Shareholder Capitalism*. Routledge.
- Hofstede, G. (2001). *Culture's Consequences* (2nd edition). SAGE Publications.
- Hofstede, G., C. A. Van Deusen, C. B. Muller, and T. A. Charles (2002). What Goals Do Business Leaders Pursue? A Study in Fifteen Countries. *Journal of International Business Studies* 33, 785-803.
- Hofstede, G., G. J. Hofstede, and M. Minkov (2010). *Cultures and Organizations: Software of the Mind*. McGrawhill.
- Hope, O. (2003). Firm-Level Disclosures and the Relative Roles of Culture and Origin. *Journal of International Financial Management and Accounting* 14, 218-248.
- John, K., L. Litov, and b. Yeung (2008). Corporate Governance and Risk-Taking. *Journal of Finance* 58, 1679-1728.
- La Porta, R., F. Lopez-de-Silanes, and A. Shleifer (1998). Law and Finance. *Journal of Political Economy* 106, 1113-1155.
- La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. Vishny (2002). Investor Protection and Corporate Valuation. *Journal of Finance* 57, 1147-1170.
- Li, K., D. Griffin, H. Yue, and Zhao, L. (2013). How Does Culture Influence Corporate Risk-Taking?, *Journal of Corporate Finance* 23, 1-22

- Mayer, C. (2013). *Firm Commitment: Why the Corporation Is Failing Us and How to Restore Trust in It*. Oxford University Press.
- Mihet, R. (2013). Effects of Culture on Firm Risk-Taking: A Cross-Country and Cross-Industry Analysis. *Journal of Cultural Economics* 37, 109-151.
- Shao, L., C. C. Y. Kwok, and O. Guedhami (2010). National Culture and Dividend Policy. *Journal of International Business Studies* 41, 1391-1414.
- Williamson, O. E. (2000). The New Institutional Economics: Taking Stock, Looking Ahead. *Journal of Economic Literature* 38, 595-613.
- Zheng, X., S. E. Ghoul, O. Guedhami, and C. C. Y. Kwok (2012). National Culture and Corporate Debt Maturity. *Journal of Banking and Finance* 36, 468-488.
- Zingales, L. (2015). The “Cultural Revolution” in Finance. *Journal of Financial Economics* 117, 1-4.

Table 1: Profitability

	1980–1994				1995–2010			
	Firm-year Observations	ROS (%)	ROA (%)	ROE (%)	Firm-year Observations	ROS (%)	ROA (%)	ROE (%)
	Panel A: Full Sample	7500	3.29 (7233)	3.81 (7200)	9.81 (7095)	3083	5.15 (3015)	4.61 (3016)
Panel B: Country								
Argentina	13	6.48	2.34	2.02				
Australia	83	5.34	3.68	8.86	19	9.45	5.21	14.66
Austria	26	-0.36	0.05	-4.15	5	6.35	6.45	17.18
Belgium	61	1.52	2.52	7.31	10	7.35	4.34	11.41
Brazil	25	4.40	4.75	9.64	21	12.37	8.54	21.12
Britain	729	4.25	5.19	13.17	150	9.88	7.29	22.12
Canada	250	4.23	4.26	9.59	57	3.71	3.81	12.09
Chile	10	12.34	9.52	19.21				
China					65	4.39	3.23	9.14
Columbia	4	0.52	0.65					
Finland	43	0.83	0.69	2.42	25	5.75	5.82	12.64
France	407	1.90	1.70	6.25	226	4.02	2.99	10.07
Germany	517	1.38	1.99	7.51	225	3.01	3.06	10.54
Hungary					1	3.98	5.38	14.11
India	57	1.93	4.41	13.40	49	5.87	6.68	17.36
Indonesia	1	5.33						
Ireland					7	5.96	5.68	13.96
Israel	10	-0.49	0.13	-2.20	1	1.62	2.18	19.67
Italy	111	-0.17	-0.31	-4.53	49	4.60	3.22	10.10
Japan	1404	1.94	2.00	6.96	660	1.59	1.48	4.10
Kuwait	11	6.64	5.93	9.01				
Luxembourg	7	1.19	1.08	4.53	9	2.57	2.32	7.42
Malaysia	7	7.16	10.42	19.93	14	22.48	12.14	25.09
Mexico	21	3.00	1.37	2.57	20	-0.44	-0.18	-2.87
Netherlands	83	2.03	2.36	5.44	57	5.03	4.39	16.82
New Zealand	11	4.33	3.05	12.01				
Norway	34	3.08	2.76	15.03	31	6.31	5.93	16.18
Panama	6	-2.60	-2.33	-13.71				
Philippines	5	1.89	2.57	13.47				
Poland					4	1.58	1.44	3.08
Portugal	10	1.21	1.77	4.53	2	3.45	7.25	17.94
Russia					26	16.74	12.55	26.40
Saudi Arabia	1		11.91	26.27	6	18.92	9.88	24.34
Singapore					12	0.79	0.88	1.75
South Africa	38	5.42	5.51	14.35				
South Korea	148	1.19	1.48	6.46	98	4.19	3.95	13.59
Spain	62	1.89	3.10	9.98	27	4.45	5.44	16.83
Sweden	158	2.99	2.76	11.00	35	4.35	4.74	14.11
Switzerland	146	3.63	3.19	7.63	76	11.12	6.88	15.59
Taiwan	17	5.28	6.26	15.40	32	3.83	5.52	11.58
Thailand	3	8.85	13.07	28.85	7	6.80	10.29	27.81
Turkey	44	4.48	7.17	36.54	9	3.28	5.39	29.07
U.S.	2859	4.42	5.34	11.90	1010	6.72	6.53	18.51
Venezuela	15	12.52	10.22	16.60	12	8.49	6.62	10.27
Zaire	1	8.23	8.51	18.14				
Zambia	11	0.73	0.84	4.25				

Table 2: Longevity

	1980–1994 (1980–1984 Sample)				1995–2010 (1995–2000 sample)			
	Firm-year Observations	Number of Listed Years in Top 500 (average)	Proportion of Firms of Survival in Top 500	Proportion of Firms Being Acquired	Firm-year Observations	Number of Listed Years in Top 500 (average)	Proportion of Firms of Survival in Top 500	Proportion of Firms Being Acquired
	Panel A: Full Sample	2262	7.99	71.7%	9.5%	1173	7.68	68.2%
Panel B: Country								
Argentina	5	8.20	60.0%	0.0%				
Australia	12	7.92	83.3%	0.0%	8	10.00	100.0%	0.0%
Austria	10	7.60	40.0%	0.0%				
Belgium	26	7.38	71.4%	0.0%	5	1.60	0.0%	80.0%
Brazil	7	8.43	71.4%	0.0%	5	10.00	100.0%	0.0%
Britain	264	7.35	62.3%	10.1%	68	6.54	54.4%	5.9%
Canada	104	6.19	39.1%	13.0%	11	6.45	54.5%	27.3%
Chile	5	4.20	60.0%	0.0%				
China					2	10.00	100.0%	0.0%
Columbia	3	2.00	0.0%	0.0%				
Finland	5	10.00	100.0%	0.0%	10	5.60	30.0%	0.0%
France	131	8.17	80.8%	0.0%	94	7.93	67.0%	23.4%
Germany	182	8.61	82.4%	8.8%	98	7.95	75.5%	15.3%
India	11	10.00	100.0%	0.0%	6	10.00	100.0%	0.0%
Israel	5	7.00	0.0%	0.0%				
Italy	42	6.33	42.9%	26.2%	22	6.50	54.5%	0.0%
Japan	353	9.57	97.4%	0.0%	290	7.75	70.7%	0.0%
Kuwait	5	8.00	20.0%	0.0%				
Luxembourg	1	2.00	100.0%	0.0%	2	2.50	0.0%	100.0%
Malaysia					4	10.00	100.0%	0.0%
Mexico	7	7.29	71.4%	0.0%	6	10.00	100.0%	0.0%
Netherlands	25	8.60	80.0%	0.0%	12	10.00	100.0%	0.0%
New Zealand	1	10.00	100.0%	0.0%				
Norway	9	10.00	100.0%	0.0%	13	9.00	76.9%	0.0%
Philippines	5	2.00	0.0%	0.0%				
Portugal	4	6.00	100.0%	0.0%				
Russia					1	10.00	100.0%	0.0%
South Africa	12	7.25	91.7%	0.0%				
South Korea	38	7.77	67.7%	9.7%	29	8.17	79.3%	0.0%
Spain	23	5.35	43.5%	21.7%	7	8.57	85.7%	0.0%
Sweden	39	7.62	82.1%	5.1%	16	9.63	81.3%	0.0%
Switzerland	44	9.57	88.6%	4.5%	26	9.27	100.0%	0.0%
Taiwan	7	7.29	71.4%	0.0%	5	5.20	80.0%	0.0%
Thailand								
Turkey	14	9.29	71.4%	0.0%	3	3.00	100.0%	0.0%
U.S.	1067	7.73	65.5%	15.0%	413	7.45	62.5%	18.9%
Venezuela	5	10.00	100.0%	0.0%	6	6.83	50.0%	0.0%
Zaire	1	0.00	0.0%	0.0%				
Zambia	4	7.00	75.0%	0.0%				

Table 3A: Industry Effect or Country Effect? (ROA)

Dependent variable	ROA					
	1980-1994			1995-2010		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Industry dummies	yes		yes	yes		yes
Country Dummies		yes	yes		yes	yes
Year dummies	yes	yes	yes	yes	yes	yes
Adjusted R ²	0.126	0.187	0.246	0.181	0.271	0.349
N	7200	7200	7200	3016	3016	3016

Table 3B: Industry Effect or Country Effect? (Survival or not in Top 500)

Dependent variable	Survival or not in Top 500 (1 or 0)					
	1980-1994 (1980-1984 Sample)			1995-2010 (1995-2000 Sample)		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Industry dummies	yes		yes	yes		yes
Country Dummies		yes	yes		yes	yes
Year dummies	yes	yes	yes	yes	yes	yes
Pseudo R ²	0.035	0.108	0.138	0.067	0.020	0.084
N	2262	2262	2262	1170	1170	1170

Table 4: Descriptive Statistics of Country's and Firm's Variables

Country	Financial System					Law			National Culture			Economic Growth		Tax	Sample Firm's Characteristics			
	Market-or-Bank Based?	Market-cap / GDP (%)	Market-cap / GDP (%)	Bank Credit / GDP (%)	Bank Credit / GDP (%)	Legal origin	Anti-self-dealing index	Creditor Rights	Individualism	Uncertainty Avoidance	Long-term Orientation	GDP Growth Rate (annual; %)	GDP Growth Rate (annual; %)	Corporate Tax Rate (%)	In Size (mill. dollars)	In Size (mill. dollars)	Fortune Rank	Fortune Rank
	Demircukunt and Levine (2001)	1980-1994	1995-2010	1980-1994	1995-2010	LLSV (1998)	Djankov et al. (2008)	LLSV (1998)	Hofstede (2001)			1980-1994	1995-2010	1995-2010	1980-1994	1995-2010	1980-1994	1995-2010
Argentina	Bank	4.67		21.09		Civil/French	0.34	1	46	86	20	3.15			8.98		212.5	
Australia	Market	46.16	96.08	50.28	92.84	Common	0.76	1	90	51	21	2.98	3.64	32.74	8.46	10.22	325.4	285.9
Austria	Bank	6.00	41.10	78.55	122.52	Civil/German	0.21	3	55	70	60	2.10	1.37	25.00	8.07	10.17	246.0	290.8
Belgium	Bank	21.58	59.03	34.54	83.45	Civil/French	0.54	2	75	95	82	1.86	2.01	37.08	8.17	10.10	229.7	373.8
Brazil	Market		56.69	56.22	37.80	Civil/French	0.27	1	38	76	44	2.07	3.08	33.20	9.34	10.91	179.5	206.6
Britain	Market	61.02	130.89	64.25	133.51	Common	0.95	4	89	35	51	2.20	2.61	30.46	8.10	10.26	283.6	276.4
Canada	Market	80.61	116.50	65.76	111.84	Common	0.64	1	80	48	36	2.56	2.26	37.19	8.15	9.86	301.4	372.8
Chile	Market	74.90		46.55		Civil/French	0.63	2	23	86	31	5.27			8.09		427.3	
China			58.49		114.13	Civil/German	0.76		20	30	87		10.56	28.20			10.57	265.9
Columbia	Bank			34.86		Civil/French	0.57	0	13	80	13	2.04			7.26		443.3	
Finland	Bank	19.25	123.72	75.22	71.56	Civil/Scandinavian	0.46	1	63	59	38	1.13	3.95	27.84	8.39	9.64	332.7	407.1
France	Bank	17.77	64.72	80.17	100.20	Civil/French	0.38	0	71	86	63	2.18	1.87	35.57	8.74	10.29	222.7	266.3
Germany	Bank	15.93	41.59	80.52	118.12	Civil/German	0.28	3	67	65	83	2.30	1.25	44.58	8.44	10.38	201.7	185.4
Hungary			11.75		59.75	Civil/German	0.18		80	82	58		0.84	16.00			9.63	449.0
India	Bank		82.24		23.94	Common	0.58	4	48	40	51	4.81	7.58	34.77	8.27	9.70	314.0	295.5
Indonesia	Bank			18.85		Civil/French	0.65	4	14	48	62	3.48					62.0	
Ireland	Bank		47.47		185.05	Common	0.79	1	70	35	24		2.66	12.50		10.00		342.9
Israel	Bank	28.49	49.69	65.51	70.47	Common	0.73	4	54	81	38	4.20	3.06	26.00	7.80	9.60	375.9	466.0
Italy	Bank		45.21	51.46	78.19	Civil/French	0.42	2	76	75	61	2.29	1.13	40.82	9.04	10.96	166.6	136.4
Japan	Bank	75.46	72.34	152.74	144.63	Civil/German	0.50	2	46	92	88	3.79	0.75	44.97	8.47	10.09	267.2	260.3
Kuwait				67.99		Civil/French			38	68		0.54				9.32		80.2
Luxembourg		81.97	137.84	94.52	116.93	Civil/French	0.28		60	70	64	5.80	4.48	32.65	8.75	9.96	277.4	298.4
Malaysia	Market	131.41	145.34	89.83	122.33	Common	0.95	4	26	36	41	8.82	4.57	27.50	9.25	10.84	298.4	226.1
Mexico	Market	15.16	26.51	18.89	17.18	Civil/French	0.17	0	30	82	24	3.98	2.51	31.17	9.95	10.96	154.2	149.8
Netherlands	Market	36.15	92.67	66.77	156.34	Civil/French	0.20	2	80	53	67	2.15	2.03	30.31	8.47	10.51	233.4	220.8
New Zealand	Bank	39.09		51.07		Common	0.95	3	79	49	33	1.81			8.67		316.3	
Norway	Bank	19.86	45.29	48.19	68.19	Civil/Scandinavian	0.42	2	69	50	35	2.97	2.87	28.00	8.69	10.15	233.2	230.3
Panama	Bank	6.01		49.05		Civil/French	0.16		11	86		5.15			8.14		439.0	
Philippines	Market			33.17		Civil/French	0.22	0	32	44	27	3.94			7.46		358.4	
Poland			36.11		40.86	Civil/German	0.29		60	93	38		4.99	19.00		9.60		389.0
Portugal	Bank		40.67	61.01	168.67	Civil/French	0.44	1	27	104	28	1.65	1.35	25.00	7.84	9.08	374.7	449.0
Russia			62.30		31.36	Civil/French	0.44		39	95	81		5.00	23.32		10.39		293.6
Saudi Arabia			74.28	21.91	36.98	Common			38	68	36	0.06	6.39	20.00	8.99	10.87	471.0	274.2
Singapore	Market		190.04		97.44	Common	1.00	4	20	8	72		4.50	20.17		9.38		360.1
South Africa	Market	109.87		51.05		Common	0.81	3	65	49	34	1.57			8.33		299.7	
South Korea	Market	23.61	53.54	43.20	98.11	Civil/German	0.47	3	18	85	100	8.60	5.20	28.37	8.51	10.31	228.0	199.6
Spain	Bank	35.51	101.72	72.56	140.28	Civil/French	0.37	2	51	86	48	2.45	2.93	33.61	7.93	10.06	292.9	222.7
Sweden	Market	33.76	94.80	43.05	64.71	Civil/Scandinavian	0.33	2	71	29	53	1.31	3.15	27.90	8.43	9.81	287.3	253.0
Switzerland	Market	63.05	202.45	131.49	150.31	Civil/German	0.27	1	66.5	64	74	1.73	1.84	23.36	8.73	10.65	240.1	195.4
Taiwan						Civil/German	0.56	2	17	69	93			23.00	8.61	9.56	193.6	368.3
Thailand	Market	63.18	63.82	98.53	90.90	Common	0.81	3	20	64	32	8.30	4.15	30.00	7.65	9.85	445.7	244.1
Turkey	Market	20.32	25.75	17.64	24.59	Civil/French	0.43	2	37	85	46	4.31	3.97	29.67	7.87	9.70	277.6	309.8
U.S.	Market	51.88	120.06	53.06	52.14	Common	0.65	1	91	46	26	2.87	2.81	39.27	8.34	10.09	242.2	242.8
Venezuela	Bank	13.42	9.26	24.16	12.70	Civil/French	0.09		12	76	16	1.44	1.15	34.00	9.71	10.99	60.3	74.3
Zaire															7.28		484.0	
Zambia				11.36		Common			27	52	30	0.27			8.21		391.5	

Table 5: Financial System and Profitability

Dependent variable	1980-1994						1995-2010					
	ROS		ROA		ROE		ROS		ROA		ROE	
Market-based	2.200*** (0.000)		2.574*** (0.000)		4.026*** (0.000)		2.755*** (0.000)		2.680*** (0.000)		7.552*** (0.000)	
Market-cap / GDP		0.029*** (0.000)		0.032*** (0.000)		0.042*** (0.000)		0.030*** (0.000)		0.021*** (0.000)		0.048*** (0.000)
Bank credit / GDP		-0.022*** (0.000)		-0.027*** (0.000)		-0.039*** (0.000)		-0.011* (0.057)		-0.017*** (0.000)		-0.049*** (0.000)
Corporate tax rate							-0.056* (0.075)	-0.083*** (0.010)	0.013 (0.959)	-0.038 (0.119)	0.023 (0.734)	-0.113* (0.081)
GDP growth rate	-0.005 (0.871)	-0.047 (0.116)	0.003 (0.938)	-0.050 (0.133)	0.215** (0.037)	0.146 (0.105)	0.307*** (0.003)	0.150* (0.062)	0.344*** (0.000)	0.130** (0.021)	1.247*** (0.000)	0.575*** (0.001)
ln Size	0.422*** (0.000)	0.465*** (0.000)	-0.212* (0.052)	-0.145 (0.174)	-0.239 (0.416)	-0.062 (0.823)	1.044*** (0.000)	1.031*** (0.000)	0.081 (0.715)	0.106 (0.646)	0.293 (0.601)	0.155 (0.789)
Industry dummies	yes	yes										
Year dummies	yes	yes										
N	7102	6876	7098	6862	6982	6763	2830	2750	2832	2753	2802	2726
Adjusted R ²	0.195	0.184	0.201	0.190	0.110	0.109	0.328	0.335	0.236	0.275	0.219	0.198

***, **, and * indicate that coefficient is significant at the 1, 5, 10% level, respectively. Figures in parentheses are *p* values calculated using standard errors clustered by firm.

Table 6: Financial System and Longevity

	1980-1994 (1980-1984 sample)						1995-2010 (1995-2000 sample)					
	Tobit		Probit		Probit		Tobit		Probit		Probit	
Dependent variable	Number of Listed Years in Top 500		Survival or not in Top 500 (1 or 0)		Acquired or not (1 or 0)		Number of Listed Years in Top 500		Survival or not in Top 500 (1 or 0)		Acquired or not (1 or 0)	
Market-based	-3.155*** (0.000)		-0.740*** (0.000)		0.571*** (0.000)		-1.023 (0.184)		-0.193 (0.123)		0.396*** (0.010)	
Market-cap / GDP		-0.021** (0.015)		-0.008*** (0.000)		0.009*** (0.000)		0.003 (0.648)		-0.000 (0.905)		0.002 (0.301)
Bank credit / GDP		0.078*** (0.000)		0.015*** (0.000)		-0.010*** (0.000)		0.027*** (0.001)		0.005*** (0.000)		-0.015*** (0.000)
GDP growth rate (10 years)	1.047*** (0.000)	0.460*** (0.004)	0.184*** (0.000)	0.085** (0.011)	-0.050 (0.224)	0.023 (0.582)	0.534 (0.136)	1.028** (0.021)	0.086 (0.135)	0.227*** (0.003)	0.004 (0.950)	-0.418*** (0.001)
ln Size	1.639*** (0.000)	1.379*** (0.000)	0.428*** (0.000)	0.397*** (0.000)	-0.135* (0.097)	-0.187** (0.031)	0.658 (0.264)	0.811 (0.188)	0.191* (0.055)	0.206* (0.061)	-0.601*** (0.000)	-0.510*** (0.000)
Fortune rank	-0.020*** (0.000)	-0.022*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	-0.000 (0.150)	-0.000 (0.106)	-0.025*** (0.000)	-0.026*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	-0.001*** (0.002)	-0.001* (0.074)
Industry dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Year dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
N	2191	2106	2168	2083	2092	2013	1134	1051	1149	1065	1044	969
Pseudo R ²	0.116	0.130	0.204	0.227	0.056	0.075	0.085	0.093	0.157	0.176	0.139	0.223

***, **, and * indicate that coefficient is significant at the 1, 5, 10% level, respectively. Figures in parentheses are *p* values.

Table 7: Law and Profitability

Dependent variable	1980-1994						1995-2010					
	ROS		ROA		ROE		ROS		ROA		ROE	
Common law	2.200*** (0.000)		2.712*** (0.000)		3.946*** (0.000)		2.875*** (0.000)		2.886*** (0.000)		7.704*** (0.000)	
Anti-self-dealing Index		5.604*** (0.000)		6.342*** (0.000)		9.314*** (0.000)		7.004*** (0.000)		5.591*** (0.000)		13.30*** (0.000)
Creditor rights		-0.458*** (0.000)		-0.426*** (0.000)		-0.236 (0.404)		-0.339 (0.213)		-0.391** (0.049)		-0.815 (0.138)
Corporate tax rate							-0.144*** (0.000)	-0.113*** (0.002)	-0.082*** (0.001)	-0.055** (0.028)	-0.203*** (0.002)	-0.139** (0.041)
GDP growth rate	0.027 (0.338)	0.002 (0.923)	0.025 (0.470)	0.004 (0.881)	0.236** (0.016)	0.226** (0.016)	0.127* (0.086)	0.396*** (0.000)	0.127** (0.017)	0.455** (0.000)	0.580*** (0.001)	1.596*** (0.000)
ln Size	0.461*** (0.000)	0.397*** (0.000)	-0.166 (0.117)	-0.218** (0.045)	-0.187 (0.514)	-0.185 (0.526)	1.151*** (0.000)	1.170*** (0.000)	0.171 (0.449)	0.178 (0.443)	0.336 (0.553)	0.534 (0.370)
Industry dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Year dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
N	7128	7084	7124	7080	7008	6962	2936	2822	2937	2824	2911	2794
Adjusted R ²	0.196	0.190	0.212	0.189	0.110	0.104	0.338	0.330	0.293	0.272	0.211	0.198

***, **, and * indicate that coefficient is significant at the 1, 5, 10% level, respectively. Figures in parentheses are *p* values calculated using standard errors clustered by firm.

Table 8: Law and Longevity

	1980-1994 (1980-1984 sample)						1995-2010 (1995-2000 sample)					
	Tobit		Probit		Probit		Tobit		Probit		Probit	
Dependent variable	Number of Listed Years in Top 500		Survival or not in Top 500 (1 or 0)		Acquired or not (1 or 0)		Number of Listed Years in Top 500		Survival or not in Top 500 (1 or 0)		Acquired or not (1 or 0)	
Common law	-2.787*** (0.000)		-0.685*** (0.000)		0.597*** (0.000)		-1.156* (0.077)		-0.303*** (0.005)		0.575*** (0.000)	
Anti-self-dealing Index		-5.892*** (0.000)		-1.365*** (0.000)		0.995*** (0.000)		-3.533* (0.055)		-0.846*** (0.005)		0.449 (0.281)
Creditor rights		0.728*** (0.000)		0.179*** (0.000)		-0.115*** (0.003)		0.046 (0.862)		0.057 (0.187)		-0.368*** (0.000)
GDP growth rate (10 yrs)	0.958*** (0.000)	1.097*** (0.000)	0.160*** (0.000)	0.191*** (0.000)	-0.041 (0.370)	-0.070 (0.124)	0.498* (0.092)	0.437 (0.122)	0.101** (0.039)	0.075* (0.098)	-0.020 (0.749)	0.074 (0.263)
ln Size	1.585*** (0.000)	1.765*** (0.000)	0.409*** (0.000)	0.451*** (0.000)	-0.135* (0.097)	-0.160** (0.049)	0.638 (0.276)	0.930 (0.124)	0.182* (0.068)	0.239** (0.018)	-0.567*** (0.000)	-0.670*** (0.000)
Fortune rank	-0.021*** (0.000)	-0.020*** (0.000)	-0.002*** (0.000)	-0.001*** (0.000)	-0.000 (0.145)	-0.000 (0.086)	-0.025*** (0.000)	-0.024*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	-0.001*** (0.002)	-0.002*** (0.001)
Industry dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Year dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
N	2196	2186	2173	2163	2097	2087	1138	1128	1154	1143	1049	1038
Pseudo R ²	0.115	0.112	0.201	0.188	0.062	0.043	0.086	0.087	0.163	0.164	0.152	0.183

***, **, and * indicate that coefficient is significant at the 1, 5, 10% level, respectively. Figures in parentheses are *p* values.

Table 9A: National Culture and Profitability (1980-1994)

	1980-1994								
Dependent variable	ROS			ROA			ROE		
Individualism	0.043*** (0.000)			0.053*** (0.000)			0.076*** (0.000)		
Uncertainty avoidance		-0.045*** (0.000)			-0.056*** (0.000)			-0.095*** (0.000)	
Long-term orientation			-0.041*** (0.000)			-0.049*** (0.000)			-0.070*** (0.000)
Corporate tax rate									
GDP growth rate	0.104*** (0.005)	0.082*** (0.006)	0.075*** (0.010)	0.125*** (0.006)	0.094** (0.015)	0.097*** (0.003)	0.373*** (0.001)	0.370*** (0.000)	0.365*** (0.000)
In Size	0.401*** (0.000)	0.458*** (0.000)	0.400*** (0.000)	-0.236** (0.036)	-0.169 (0.122)	-0.235** (0.033)	-0.279 (0.343)	-0.169 (0.559)	-0.294 (0.317)
Industry dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes
Year dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes
N	7128	7128	7112	7124	7124	7109	7008	7008	6993
Adjusted R ²	0.169	0.184	0.195	0.178	0.192	0.204	0.102	0.110	0.108

***, **, and * indicate that coefficient is significant at the 1, 5, 10% level, respectively. Figures in parentheses are *p* values calculated using standard errors clustered by firm.

Table 9B: National Culture and Profitability (1995-2010)

Dependent variable	1995-2010								
	ROS			ROA			ROE		
Individualism	0.052*** (0.000)			0.057*** (0.000)			0.170*** (0.000)		
Uncertainty avoidance		-0.054*** (0.000)			-0.060*** (0.000)			-0.166*** (0.000)	
Long-term orientation			-0.048*** (0.000)			-0.052*** (0.000)			-0.145*** (0.000)
Corporate tax rate	-0.130*** (0.000)	-0.109*** (0.002)	-0.118*** (0.001)	-0.067*** (0.005)	-0.044* (0.083)	-0.054** (0.028)	-0.160*** (0.010)	-0.096 (0.127)	-0.126** (0.044)
GDP growth rate	0.314*** (0.000)	0.071 (0.433)	0.198** (0.011)	0.322*** (0.000)	0.049 (0.493)	0.192*** (0.000)	1.115*** (0.000)	0.358 (0.111)	0.741*** (0.000)
ln Size	0.998*** (0.000)	1.046*** (0.000)	1.075*** (0.000)	0.018 (0.931)	0.076 (0.733)	0.100 (0.652)	-0.079 (0.886)	0.067 (0.910)	0.184 (0.737)
Industry dummies	yes								
Year dummies	yes								
N	2936	2936	2936	2937	2937	2937			
Adjusted R ²	0.322	0.317	0.329	0.278	0.270	0.291			

***, **, and * indicate that coefficient is significant at the 1, 5, 10% level, respectively. Figures in parentheses are *p* values calculated using standard errors clustered by firm.

Table 10A: National Culture and Longevity (1980-1994)

	1980-1994 (1980-1984 sample)								
	Tobit			Probit			Probit		
Dependent variable	Number of Listed Years in Top 500			Survival or not in Top 500 (1 or 0)			Acquired or not (1 or 0)		
Individualism	-0.082*** (0.000)			-0.020*** (0.000)			0.021*** (0.000)		
Uncertainty avoidance		0.068*** (0.000)			0.015*** (0.000)			-0.016*** (0.000)	
Long-term orientation			0.066*** (0.000)			0.015** (0.000)			-0.012*** (0.000)
GDP growth rate (10 yrs)	0.484*** (0.005)	0.670*** (0.005)	0.696*** (0.002)	0.046 (0.197)	0.094*** (0.005)	0.106*** (0.002)	0.093 (0.082)	0.043 (0.344)	-0.000 (0.994)
ln Size	1.322*** (0.000)	1.495*** (0.000)	1.640*** (0.000)	0.360*** (0.000)	0.391*** (0.000)	0.427*** (0.000)	-0.100 (0.226)	-0.110 (0.179)	-0.138* (0.090)
Fortune rank	-0.023*** (0.000)	-0.021*** (0.000)	-0.021*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	-0.000 (0.482)	-0.004 (0.225)	-0.000 (0.173)
Industry dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes
Year dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes
N	2196	2196	2196	2173	2173	2173	2097	2097	2097
Pseudo R ²	0.116	0.114	0.119	0.203	0.194	0.207	0.075	0.062	0.065

***, **, and * indicate that coefficient is significant at the 1, 5, 10% level, respectively. Figures in parentheses are *p* values.

Table 10B: National Culture and Longevity (1995-2010)

	1995-2010 (1995-2000 sample)								
	Tobit			Probit			Probit		
Dependent variable	Number of Listed Years in Top 500			Survival or not in Top 500 (1 or 0)			Acquired or not (1 or 0)		
Individualism	-0.032** (0.015)			-0.009*** (0.000)			0.030*** (0.000)		
Uncertainty avoidance		0.027* (0.088)			0.007*** (0.004)			-0.012*** (0.000)	
Long-term orientation			0.024** (0.048)			0.006*** (0.002)			-0.015*** (0.000)
GDP growth rate (10 yrs)	0.432* (0.099)	0.536* (0.085)	0.551* (0.070)	0.088** (0.050)	0.117** (0.024)	0.118** (0.022)	-0.070 (0.428)	-0.018 (0.770)	-0.069 (0.346)
ln Size	0.548 (0.348)	0.566 (0.336)	0.651 (0.266)	0.157 (0.115)	0.158 (0.114)	0.185* (0.063)	-0.513*** (0.000)	-0.544*** (0.000)	-0.582*** (0.000)
Fortune rank	-0.026*** (0.000)	-0.026*** (0.000)	-0.025*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	-0.001** (0.029)	-0.001*** (0.007)	-0.001*** (0.003)
Industry dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes
Year dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes
N	1138	1138	1138	1154	1154	1154	1049	1049	1049
Pseudo R ²	0.087	0.086	0.086	0.168	0.163	0.164	0.216	0.146	0.168

***, **, and * indicate that coefficient is significant at the 1, 5, 10% level, respectively. Figures in parentheses are *p* values.

Figure 1A: Return on Assets for 1980-1994

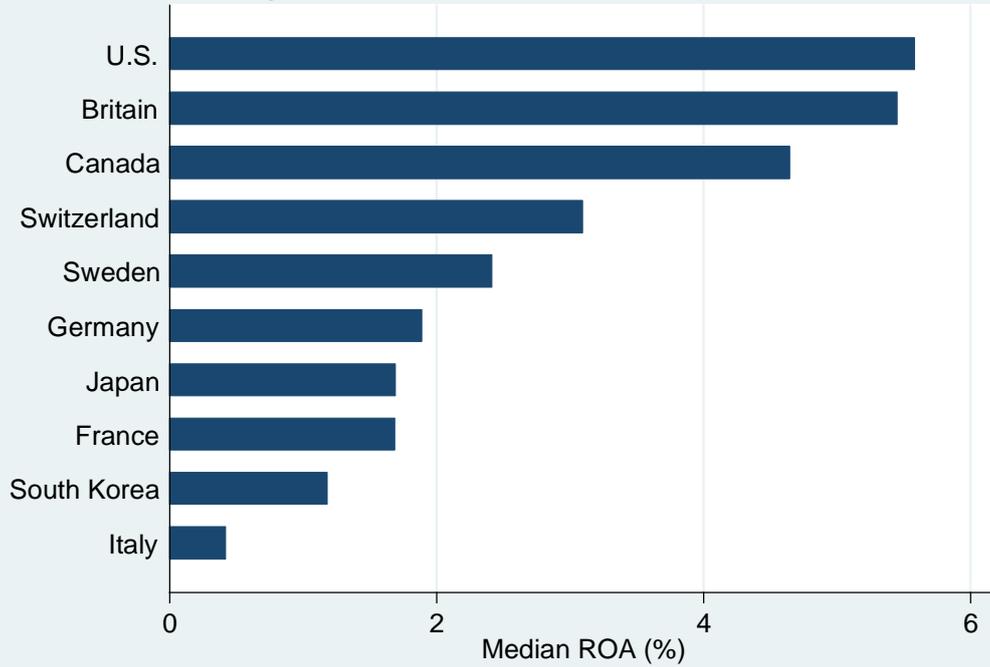


Figure 1B: Return on Assets for 1995-2010

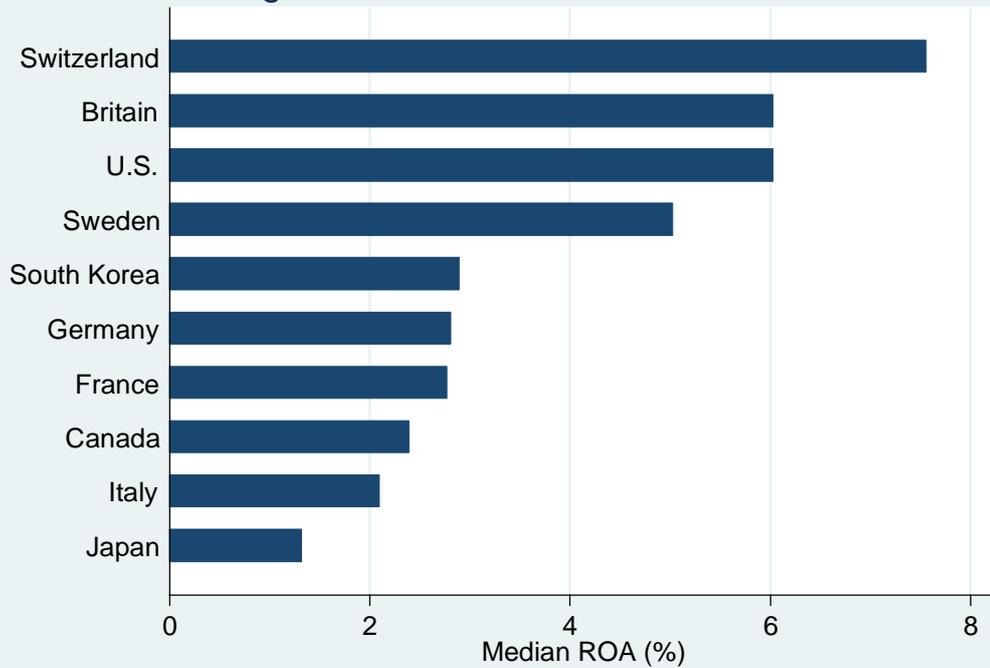


Figure 2A: Probability of Survival in Top 500 for 1980-1994

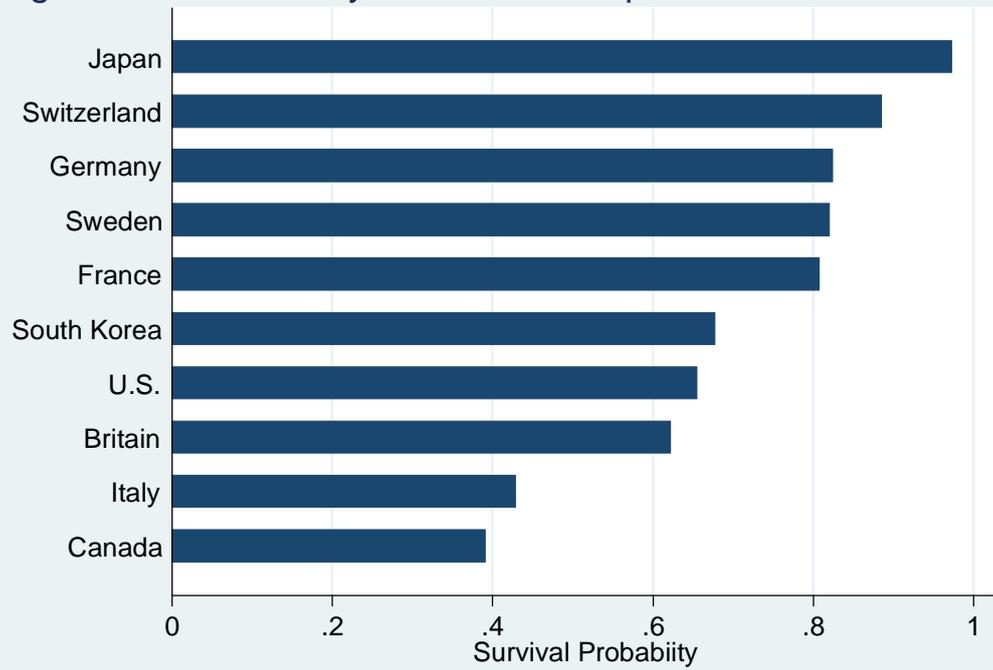


Figure 2B: Probability of Survival in Top 500 for 1995-2010

