european corporate governance institute

Corporate Stakeholders and Trust

Finance Working Paper N° 213/2008
July 2008

Marc Goergen
University of Sheffield Management School and ECGI

© Marc Goergen 2008. All rights reserved. Short sections of text, not to exceed two paragraphs, may be quoted without explicit permission provided that full credit, including © notice, is given to the source.

This paper can be downloaded without charge from:
https://doi.org/10.67929/ecgi-fin-213-2008

european corporate governance institute

ECGI Working Paper Series in Finance

Corporate Stakeholders and Trust

Working Paper N°. 213/2008
July 2008

Marc Goergen

I am grateful to the participants at the 6th International Conference on Corporate Governance organised by the Centre for Corporate Governance Research (Birmingham Business School) for helpful comments and suggestions.

© Marc Goergen 2008. All rights reserved. Short sections of text, not to exceed two paragraphs, may be quoted without explicit permission provided that full credit, including © notice, is given to the source.

Abstract

To our knowledge, this is the first paper that investigates the links between trust, the institutional setting (in terms of employment protection legislation (EPL) and investor rights) and studies the impact of all three on economic performance. In line with the previous literature (e.g. Knack and Keefer (1997), Zak and Knack (2001)), we find that trust has a positive impact on GDP per capita growth. Our novel results are twofold. First, we find that EPL and investor rights have a negative relationship and that both (although the latter to a lesser extent) are substitutes for trust. Second, all three variables have a positive effect on economic growth.

Keywords: Corporate governance, trust, investor protection, employment protection legislation, institutions and economic growth

JEL Classifications: G34, K20, O16

Marc Goergen
University of Sheffield Management School
9 Mappin Street
Sheffield S1 4DT
phone: +44 114 2223488 , fax: +44 114 2223348
email: m.goergen@shef.ac.uk

1. Introduction

> *It can be plausibly argued that much of the economic backwardness in the world can be explained by the lack of mutual confidence.*
>
> (Arrow, 1975)

Trust deals with situations under asymmetric information, that is situations where the actions of an agent cannot be directly observed. '[...] trust or social capital[1] [is the] propensity of people in a society to cooperate to produce socially efficient outcomes and to avoid inefficient noncooperative traps such as that in the prisoner's dilemma' (La Porta et al. (1997a, p.333)). Similarly, Knack and Keefer (1997, p.1252) argue that: '[e]conomic activities that require some agents to rely on the future actions of others are accomplished at lower cost in higher-trust environments.' They provide examples of such activities, which are the provision of goods and services in return for future payments, tasks carried out by an employee which are difficult to monitor by a manager and investments that may be expropriated by the investee or the government. In other words, in higher-trust environments, economic agents tend to spend less time protecting themselves from getting expropriated.

While game theory suggests that cooperation, induced by trust, is not a rational strategy in repeated games (e.g. the prisoner's dilemma), leading to outcomes that are not socially optimal, results from experimental studies suggest that people trust complete strangers and expect a certain degree of cooperative behaviour from them, even if they may never see them again (La Porta et al. (1997a)). Moreover, trust tends to be more important when interacting

[1] While La Porta et al. (1997) do not explicitly make a difference between trust and social capital, most of the literature considers the latter to be a much more wide-ranging concept than the former. For example, Putnam defines social capital as 'features of social organization, such as trust, norms, and networks, that can improve the efficiency of society by facilitating coordinated actions' (p.167).

with complete strangers or with those dealt with on an infrequent basis. Indeed, people who deal with each other frequently build up a reputation amongst each other based on past cooperation and are also able to punish each other in the future for opportunistic behaviour. This implies that trust tends to be more of an issue in large organizations, such as large firms or bureaucracies, where people only interact infrequently with each other and reputations cannot be built up and penalties enforced.

There is general agreement in the extant literature that trust has a positive effect on economic growth, investment and institutional performance (see Section 2.1). A number of studies have also investigated the determinants of trust. While the evidence is not as consistent as that on the link between trust and performance, the literature suggests that trust is determined by factors such as income inequality, ethnolinguistic and ethnic diversity as well as hierarchical religions. While the existing literature has analysed the effects and determinants of trust, we propose to investigate the impact of trust on institutional design. In particular, we are interested in the distribution of power and rights across the two corporate stakeholder categories of investors and employees.

To our knowledge, this is the first paper which explains the institutional setting, defined in the broader sense of encompassing both investor and employment rights, by the level of trust which exists within a given country, and links all three to economic performance. We find strong evidence which suggests that it is important to analyse jointly shareholder rights and employment protection legislation. Indeed, while the two have a negative relationship, our regression results suggest that they both affect the economic outcome in a positive way.

The remainder of this paper is organised as follows. The next section reviews the different bodies of the literature on trust, investor rights and employment protection legislation.

Section 3 develops the hypotheses and discusses the methodology and data sources. The next section then presents the empirical results, followed by the conclusions in Section 5.

2. Literature Review

The literature review is organised as follows. We start by reviewing the literature on trust and economic performance. We then proceed by summarising the literature on investor rights and economic efficiency. Finally, we turn to the theory and the empirical evidence on the effect of employment protection legislation on economic performance.

2.1 Trust and economic growth

Putnam (1993) studies the effects of the 1970 constitutional reform in Italy which created local governments for each of its regions. He investigates why the Northern governments have been fairly efficient whereas those in the South have failed. Putnam argues that the new governments in the North have succeeded because this part of Italy has had a long tradition of what he calls civic engagement, that is 'active participation in public affairs' (p.87). Members of a civic community are not just active, but they also trust each other even when they do not share the same opinions on key issues. Putnam considers participation in horizontal associations to be a proxy for civic engagement. While horizontal ties between individuals encourage trust, strong vertical associations, in the form of a strongly hierarchical religion such as Catholicism, within a country discourage trust.

Fukuyama (1995) studies the decline of sociability in the US, that is the growing distrust among American citizens. He reports that, compared to other developed countries, the US spends significantly more on police protection and has a significantly higher proportion of its population locked up in prisons. The US also has a much more pronounced culture of litigation with its citizens spending significantly more on lawyer fees than for example

Europe or Japan. He argues that, similar to its savings deficit, the US has been living off its accumulated trust or social capital for a while without investing further in it. However, contrary to the ongoing political debate in a series of industrialised countries, he does not claim that a return to family values, which have been gradually eroded over the last decades, will improve sociability. He cites the examples of China and Italy where family ties are important. While strong family or blood ties (which Fukuyama refers to as *familism*) in themselves may not be detrimental to economic growth, they nevertheless put severe limits to the type and especially the size of firms that can proliferate under such circumstances and the sectors firms will operate in.

Zak and Knack (2001) investigate the link between trust and economic performance. They argue that low-trust environments result in a lack of investment. Their theoretical model is based on transactions within a social structure. The social structure determines the rewards for cooperation and the penalties for non-cooperation. Their model deals with transactions between investors and their investment brokers. In the model, trust is defined as the aggregate amount of time economic agents spend on production rather than on monitoring each other. Their model predicts that rich investors will spend more time monitoring their brokers as they have more wealth to protect. However, taking time off work to monitor one's broker becomes a less attractive proposal for high earners due to the high opportunity cost. The level of monitoring is also reduced when formal and informal institutions are strong enough to reduce cheating. Wage inequality will result in more monitoring, that is a less trusting society as the effort the poor will spend on monitoring will be higher than the reduction in monitoring caused by the higher wages of the rich. To sum up, Zak and Knack's model predicts the following. First, higher trust increases investment and economic growth. Second, homogeneous societies are more trusting and have therefore higher levels of investment and

economic growth. Third, reducing income inequalities increases trust and consequently investment and growth; and vice versa. Fourth, there is a low-trust poverty trap.

Zak and Knack (2001) test their model on 44 countries. Their data source for trust is the World Values Survey (WVS) database.[2] Trust is measured by the percentage of respondents in each country replying that 'most people can be trusted'.[3] They find the following:[4] (i) investment is higher in countries where incomes are higher, the prices for investment goods are lower and where there is more trust; (ii) there is a positive relationship between growth and trust; (iii) there is relatively little variation of trust across time compared to the cross-country differences in trust; (iv) trust has a quadratic, U-shaped relationship with ethnic homogeneity suggesting that trust is lowest in countries where there are several sizeable groups;[5] (v) trust depends positively on the property rights index[6] (which measures the government's attitude towards property rights) and negatively on income inequality and land inequality; and (vi) while growth is positively related to the property rights index trust remains significant. Zak and Knack explain the latter result by the fact that the property rights index is a proxy for the people's trust in their government whereas the trust index is a proxy for the level of trust between individuals.

[2] The WVS covers 41 countries. Zak and Knack (2001) obtain another two country observations from the Eurobarometer surveys (Greece and Luxembourg) and another country observation from a government-funded survey in New Zealand.

[3] The alternative is that 'you can't be too careful in dealing with people'.

[4] For the sake of brevity, all of these effects are statistically significant.

[5] Zak and Knack (2001) state that this is e.g. the case in Fiji, Guyana and Trinidad. They also give the example of Tanzania which is a country with lots of small groups, but neither of these groups being large enough to dominate the political scene.

[6] The index is based on data from the International Country Risk Guide (ICRG).

Whereas according to Zak and Knack (2001) trust and property rights measure trust towards two different types of economic agents (individuals and the government, respectively), Knack and Keefer (1997) argue that trust between citizens can be a substitute for property rights and law enforcement in countries where these are weak. They also predict that high-trust societies will have longer investment horizons than societies where trust is low. In the former, incentives will also be higher for employers to invest in their staff and for employees to acquire firm-specific skills. Citizens will be prevented from opportunistic behaviour by norms of civic cooperation and the sanctions imposed for breaking these. These sanctions are internal (such as guilt) and external (such as ostracism and shame). If civic norms manage to prevent opportunistic behaviour, economic agents will have more time to spend on producing rather than on monitoring other economic agents. Civic norms of cooperation also help citizens reduce expropriation by politicians and other government officials. Indeed, if civic norms expect citizens to be involved in politics, this will overcome the classical free-rider problem. Using evidence from the WVS dataset, Knack and Keefer investigate the impact of trust[7] and civic norms[8] on growth and investment. They find that economic growth – measured by the average annual growth in per capita income during 1980-92 – and investment – measured as a proportion of GDP – are positively related to trust and the strength of civic norms. Further, the impact of trust is higher in poorer countries where formal institutions and the quality of law are likely to be weaker suggesting that trust does indeed act as a substitute for the latter two. They also find strong negative correlations

[7] As in Zak and Knack (2001), trust is proxied by the percentage of respondents agreeing that 'most people can be trusted'.

[8] The strength of civic norms of cooperation is measured by the respondents' reply whether a series of actions 'can always be justified, never be justified or something in between'. The actions are: 'claiming government benefits which you are not entitled to', 'avoiding a fare on public transport', 'cheating on taxes if you have the chance', 'keeping money that you have found', and 'failing to report damage you've done accidentally to a parked vehicle'.

between income inequality on one side and trust and civic norms on the other side. However, when income inequality is added as an independent variable to the regressions that explain economic growth, the coefficients on trust and civic norms remain significant in three out of four regressions.

Knack and Keefer (1997) also test the validity of Putnam's (1993) hypothesis that associational activity increases growth. This hypothesis is in direct contrast with Olson (1982) who claims that horizontal associations tend to be self-serving associations – such as lobbying groups – which divert economic resources into their own pockets at the detriment of the rest of society. Hence, according to Olson, associational activity is likely to hurt rather than to promote economic growth. Knack and Keefer measure associational activity by the average number of horizontal groups respondents from each country belong to. They find that associational activity is not significant in either the growth or investment regressions. They interpret this as evidence that the positive effect of horizontal networks (Putnam 1993) is offset by their negative effect (Olson 1982).

La Porta et al. (1997a) use the same proxy for trust as Zak and Knack (2001) and Knack and Keefer (1997). They explain the efficiency of government,[9] participation,[10] the performance of large firms (measured by the aggregate sales of the top 20 firms as a percentage of GNP) and social efficiency by trust.[11] They find that trust has a significant impact on all of their four measures of performance. They also test Fukuyama's (1995) hypothesis of the negative

[9] They employ four different measures of the efficiency of government: judiciary efficiency, the level of corruption, bureaucratic quality and tax compliance.

[10] They distinguish between civic participation and participation in professional associations.

[11] They use seven different measures of social efficiency: the quality of infrastructure, its adequacy, infant mortality, the percentage of the population with a high school education, the adequacy of the educational system, inflation and GDP growth.

effect of familism on large firms: the share of the top 20 firms of the GNP is negatively related to the trust people put in their family.[12] Hence, they find support for Fukuyama's hypothesis that strong family ties limit the development of large firms. Finally, they also test the validity of Putnam's (1993) hypothesis on the negative effect of strong hierarchical religions on performance. They consider the Catholic, Eastern Orthodox and Muslim religions to be such religions. They find that countries where these religions are strongly represented have a less efficient judiciary system, greater degrees of corruption, inferior bureaucracies, lower tax compliance, lower rates of participation, a lower share of GNP generated by the largest 20 firms, lower quality infrastructures and higher inflation. While La Porta et al. find evidence that strong hierarchical religions nurture distrust, they do not find that ethnic heterogeneity as measured by ethnolinguistic heterogeneity reduces trust.

2.2 Investor rights and economic growth

While La Porta et al. (1997b, 2000a) have not focused on direct measures of economic performance such as GDP-per-capita growth, they have nevertheless provided a tentative answer to the question as to whether investor protection fosters economic growth. For example, La Porta et al. (1997b) find that countries with good investor protection have capital markets that are broader (have a larger number of listed firms) and deeper than countries with weak investor protection. Further, La Porta et al. (2000a) report that firms from countries with higher levels of shareholder protection have larger dividend payouts.[13]

While La Porta et al. (2000b) claim that strong economic growth can only be achieved through well developed stock markets, the varieties of capitalism (VOC) literature (Amable

[12] As expected, it is positively related to the trust people put in strangers.

[13] See Levine (2001) for an excellent overview of the literature on the link between financial systems and economic growth.

(2003) and Hall and Soskice (2001)) adopts a somewhat different approach. Indeed, contrary to the law and finance literature which strongly argues in favour of a hierarchy of institutional settings, the VOC literature is based on the concept of complementarities (see e.g. Boyer, 2006). As the VOC literature sees institutions as being embedded within networks of relationships, countries with weak investor rights may still achieve economic outcomes that are comparable to those achieved by countries with strong shareholder protection via different sets of complementarities.

2.3 Employment protection and economic performance

Deelen et al. (2006) review the theoretical and empirical literature of the impact of employment protection legislation (EPL) on the investment in human capital, employment, unemployment, and economic performance. They define EPL as 'the institutions related to the dissolution of matches between firms and workers. Most notably, administrative and legal procedures including notice periods, severance pay and firing taxes. These arrangements may be the result of government legislation, collective labour agreements and/or individual contracts' (p.15).

Deelen et al. (2006) argue that, from a theoretical point of view, EPL has both good and bad effects. The good effect of EPL stems from the fact that it provides insurance against income risk (see e.g. Fella (2006) and Pissarides (2001, 2004)). This insurance is mainly provided via severance pay and notice periods. Although the insurance via EPL will increase moral hazard (i.e. the insurance may make it more likely that the worker in question is less productive), the gains from the insurance may be sufficiently high to outweigh the negative effects. Apart from moral hazard, there are at least three other factors that may reduce the insurance role of EPL. First, the existence of unemployment insurance reduces the positive impact of severance pay. While severance pay is a one-off payment made when a worker is laid off,

unemployment insurance is better at insuring the worker against the uncertain duration of the unemployment stage. Second, the existence of a working partner makes an individual less dependent on a single income. Finally, and most relevant for the context of this paper, better capital markets reduce the costs for workers to save and borrow in order to protect themselves against the risk of unemployment. Again, this reduces the insurance role of EPL. In other words, this suggests a negative link between EPL and the role of capital markets, in particular the protection of small investors.

Some (e.g. Belot et al. (2007) and Nagypál (2002)) argue that EPL has a positive effect on productivity as it encourages *specific* investments in human capital. These specific investments consist for example of the acquisition of job-specific skills. However, this positive welfare effect of EPL is only realised if the economy starts in a situation of underinvestment, that is a situation where workers or firms underinvest as they are concerned that the other party will expropriate the gains from their investment via ex post bargaining.

Others, such as Caballero and Hammour (1998), argue that EPL has mainly a negative welfare effect. Indeed, during times of technological change, EPL may obstruct the transfer of workers from one sector to another one resulting in a reduction in the sum of job creations and reductions. Caballero and Hammour call this situation where a country's production facilities become outdated and fail to adjust to technological change 'sclerosis'.[14] Hence, from a theoretical point of view the effect of EPL on productivity is not clear.

Deelen et al. (2006), in their review of the empirical literature of the impact of EPL on employment and economic productivity, conclude the following. First, EPL decreases labour

[14] EPL may not only affect the economy's efficiency, but it also raises concerns in terms of equity as the gains from EPL are not equally shared across society. Indeed, Kugler and Saint-Paul (2004) show that higher firing costs make it less likely for firms to hire the unemployed, thereby increasing spells of unemployment.

market flexibility and, in particular, the flows between employment and unemployment. However, these flows depend on country-specific characteristics such as the rule of law and the economic situation. Still, the impact of EPL (as measured by average elasticities) on employment, unemployment and labour supply is fairly limited. Second, EPL gives rise to equity concerns. It does not only increase the duration of unemployment, but its benefits and costs are also not shared equally across society. In detail, whereas EPL increases the employment rate among prime-age males, it reduces the employment rate of first-time job seekers and women. Finally, there is as yet no consensus in the empirical literature as to the impact of EPL on productivity. For example, Nickell and Layard (1999), who study 20 OECD countries, do not find a consistently negative or positive impact of EPL on productivity. They also report that employment protection and wage flexibility seem to act as substitutes. For example, in the USA, increased wage flexibility makes it possible to keep staff turnover to a minimum despite the weak EPL. Conversely, Bartelsman and Hinloopen (2005) find a significantly negative effect of EPL on investment in information and communication technology (ICT) as a share of total investment. Based on their study of 13 OECD countries, they conclude that firms from countries with low EPL are more likely to make risky investments resulting in blue-skies innovation whereas those from countries with high EPL are more likely to favour incremental innovations. Finally, Belot et al. (2007) find an inverse U-shaped relationship between EPL and GDP growth for the case of 17 OECD countries. At low levels of EPL, an increase in EPL has a positive impact on economic performance, but beyond the maximum the effect of EPL becomes negative. Belot et al. argue that the optimal level of EPL varies across countries and industrial sectors and is likely to be higher in industries where firm-specific skills are important.

2.4 Conclusion

There is widespread consensus in the academic literature that trust has a positive effect on economic performance. At the extreme, a society where trust is absent may even suffer from economic backwardness, the so called low-trust poverty trap. Further, according to the finance and law literature which has been started by the seminal work of La Porta et al. (1997b) there is a link between investor protection and the development of capital markets, and eventually economic growth. In other words, the finance and law literature prescribes a certain set of institutional arrangements, characterised by strong investor rights and developed capital markets. Given that shareholders' investments in firms are essentially sunk funds, Shleifer and Vishny (1997) argue that investors should get precedence over workers. Hence, while there is a trade-off between investor rights and worker rights, the finance and law literature is fairly unanimous as to how this trade-off should be resolved: the optimal outcome consists of strong investor rights and weak (or a least, weaker) employment rights. Finally, there is no agreement both from a theoretical as well as empirical point of view as to the impact of EPL on productivity and economic growth.

While the focus of this paper is clearly on the impact of trust on a country's institutional settings, we feel that we provide at least a tentative answer as to the effect of EPL on economic growth. Indeed, given that we do not only concentrate on EPL in isolation, but also take into account the rights of investors, we feel that our study adopts a more holistic approach to studying the impact of EPL on economic efficiency.

3. Hypotheses, Data and Methodology

The aim of this paper is twofold. First, we attempt to explain cross-country differences in terms of the institutional setting, in particular employment protection legislation and investor

rights, by the level of trust prevailing in each country. Second, we investigate the impact of the institutional framework as well as trust on economic performance.

Pagano and Volpin (2005) develop a model which explains the levels of investor and worker rights within a country. They distinguish between three social classes: managers (who are also the controlling shareholders of their firms), workers and *rentiers*. The latter social class consists of individuals who are wealthy enough to live off their investment income and who hold minority stakes in the managers' firms. In Pagano and Volpin's model, the balance between worker and investor rights is the outcome of the distribution of power across the three social groups.[15] Hence, we expect there to be a negative relationship between employee rights and shareholder protection.

Further, similar to Zak and Knack (2001), we hypothesize that trust is a determinant of economic growth. However, while Zak and Knack did not consider such a link, we follow in the footsteps of La Porta et al. (1997b, 1998) and expect an impact of shareholder protection on economic performance. In line with Knack and Keefer (1997), we expect trust to be a substitute for weak institutions. Hence, we hypothesize a negative relationship between employment rights or investor rights on one side and trust on the other side. To sum up, we predict that both investor rights and employee rights are substitutes for trust, that the former two are negatively linked and that economic growth is positively affected by all three.

In detail, our empirical model consists of the following system of simultaneous equations:

[15] This outcome is essentially determined by the type of electoral system. Pagano and Volpin (2005) distinguish between two main types of electoral systems: the proportional system and the majoritarian system. Under the proportional system, a party has to obtain a majority of votes to win the elections. Therefore, it makes sense for parties to focus on homogeneous social groups such as the managers and workers. Under the majoritarian system, the party will have to win a majority of districts. Hence, the party will need to focus on the pivotal district which Pagano and Volpin equate to the district where the *rentiers* live. Pagano and Volpin predict that under the proportional voting system employee rights will be higher and investor rights will be lower. They find evidence of this based on data on OECD countries.

$$Employee\ Rights = \alpha_1 - \beta_1 Trust - \delta_1 Investor\ Rights + \varepsilon_1 \quad (1)$$

$$Investor\ Rights = \alpha_2 - \beta_2 Trust - \delta_2 Employee\ Rights + \varepsilon_2 \quad (2)$$

$$\begin{aligned} Economic\ Growth = \alpha_3 + \beta_3 Trust + \delta_3 Employee\ Rights + \phi\, Investor\ Rights \\ - \varphi\, Ln(GDP\ per\ capita) + \varepsilon_3 \end{aligned} \quad (3)$$

$$Trust = \alpha_4 + \beta_4 X + \varepsilon_4 \quad (4)$$

where X is a vector of exogenous variables (see below for further information). Each of the equations in the system needs to be just-identified or over-identified. An equation will be just-identified (over-identified) if the number of predetermined or exogenous variables excluded in the equation is equal to (greater than) the number of endogenous variables – 1 included in the equation. In other words, equations (1), (2) and (3) will just-identified (over-identified) if there are (more than) 2, 2 and 3 exogenous variables, respectively, in equation (4). In turn, equation (4) does not need to exclude any exogenous variables to be just-identified as it includes only one endogenous variable. In order to ensure that all the equations within the system are at least identified, equation (4) will need to include a minimum of 3 exogenous variables.

We expect both trust and investor rights to have a negative sign in equation (1). Similarly, trust and employment protection in equation (2) are expected to have negative signs. Finally, trust, employment protection and investor rights are predicted to have a positive effect on economic growth whereas richer nations (as measured by a higher GDP per capita) are expected to grow at a slower rate than poorer nations.

The model is estimated using the three-stage least-squares estimation method (3SLS) for a system of simultaneous linear equations with instrumental variables. 3SLS is asymptotically

more efficient than 2SLS as it takes into account information on the error covariances as well as information contained in the endogenous variables included in the other equations (see Greene (2003) and Brooks (2008)). The instrumental variables we use are similar or identical to those used in the previous literature. In detail, these include the number of lawyers per population (in millions), an index of ethnolinguistic diversity, the logarithm of GDP per capita, the percentage of the population belonging to a hierarchical religion and income inequality. Knack and Keefer (1997) use similar control variables[16] for trust. However, they use the number of law students rather than the number of lawyers per population,[17] and an ethnic homogeneity index rather than an ethnolinguistic index. In addition, Zak and Knack (2001) use the percentages of the population belonging to the Muslim, Catholic and Christian Orthodox churches as instruments for trust.[18]

Our measure for employee rights is identical to that used in Pagano and Volpin (2005). It is the OECD index of the strictness of employment protection legislation (EPL). This index is based on the year 2003 and is available for 28 of the currently 30 member countries of the OECD.[19] The index has a scale of 0 to 6. The higher the index value, the stricter is the employment protection legislation in the given country (see OECD 2004 for further details). While this measure is only available for 28 OECD countries, most of the other variables are available for much larger samples. In the univariate analysis, we will also refer to the larger sample if applicable.

[16] They use OLS regressions rather than 2SLS or 3SLS.

[17] While, for most of their sample countries, Knack and Keefer (2001) measure trust in 1990-91, their data on the number of law students dates from 1962-64. We believe that our measure is not only more up-to-date, but it is also a more direct measure of the litigious character of a society.

[18] They use 2SLS.

[19] The measure is not available for Iceland and Luxembourg.

We use two different measures for investor protection: Djankov et al.'s (2008) anti-self-dealing index as well as the anti-directors-rights index from La Porta et al. (1997b, 1998). Both indices measure the level of protection enjoyed by minority shareholders. However, according to Djankov et al., the former index has a stronger theoretical basis than the latter one which was constructed in a fairly 'ad hoc' way (see La Porta et al. (1997b, 1998) for further details). The anti-self-dealing index looks at transactions of corporate self-dealing, i.e. self-dealing by the controlling shareholder, and then counts the number of hurdles that the controlling shareholder will have to jump to engage in these transactions.

Our measure of trust is identical to that used in the previous literature (e.g. La Porta et al. (1997), and Knack and Keefer (1997)). It is sourced from the World Values Survey from the late 1990s and consists of the percentage of respondents in each country who answer yes to the following question: "Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?"

As trust is measured during the late 1990s for most countries whereas all other variables are measured during the 2000s, this lag addresses at least to some extent the possible endogeneity of trust.[20] In addition, La Porta et al. (1997a), among others, point out that trust does not vary substantially across time. They find that the correlation of the trust variable between the 1980s and 1990s is as high as 0.91. Hence, it is reasonable to assume that trust is mainly exogenous.

Economic growth is measured as the average percentage growth rate in GDP per capita (measured in constant year 2000 US dollars) over the period of 2000 to 2006 (as a robustness

[20] Indeed, it could very well be the case that trust within a country is increased by the past successful economic cooperation of its citizens. In other words, good past economic performance may have a positive effect on trust.

check we also use the longer period of 1990 to 2006). It is obtained from the World Development Indicators (April 2008) by the World Bank. The number of lawyers per millions of inhabitants is the ratio of the number of lawyers in each country (which is obtained from various sources including the Council of Bars and Law Societies of Europe (CCBE) and the American Bar Association) divided by that country's number of inhabitants (in millions) in 2004 (from the World Development Indicators). The number of lawyers per millions of inhabitants measures the litigious nature of a country's culture. In particular, Murphy et al. (1991) argue that there is a relationship between the number of lawyers in a country and the amount of rent-seeking and litigation. In line with their argument and their empirical evidence, Magee et al. (1989) find a negative link between economic growth and the number of lawyers.

The index of ethnolinguistic diversity is from Gordon (2005). The index is defined as the probability that any two randomly chosen inhabitants of a given country will have different mother tongues (Lieberson (1981)). The maximum possible value of 1 corresponds to total diversity (i.e., no two inhabitants have the same mother tongue) while the minimum possible value of 0 corresponds to no diversity at all (i.e., everybody has the same mother tongue). The logarithm of GDP per capita is also from the World Development Indicators (as used in Djankov et al. (2008)). It is measured in 1990 and 2000, respectively. The percentage of the population belonging to a hierarchical religion is from La Porta et al. (1997a).[21] Finally, similar to Zak and Knack (2001), we use the Gini coefficient as another instrument. The Gini

[21] We also use La Porta et al.'s alternative measure which is the percentage of the population belonging to the Catholic religion.

coefficient, which measures income inequality, is from the World Development Indicators and is typically measured in 2000.[22]

Table 1 contains the descriptive statistics on the variables and instruments. While our sample is fairly small compared to the sample size of a typical study in corporate finance, it is nevertheless comparable to other studies on trust. For example, Knack and Keefer (1997) and La Porta et al. (1997a) have a sample size of 26-28 and 27-40, respectively. Essentially, our sample size is conditioned by the availability of the measure on the strictness of employment protection legislation which is available for 28 (of the 30) OECD countries only.

Table 1 shows that the percentage of the population trusting strangers ranges from only 6.8% in Turkey to 66.5% in Denmark with a cross-country average of about 35%. Employment protection legislation is lowest in the USA and highest in Turkey. Over the period of 2000 to 2006, the average annual growth of GDP per capita was lowest in Portugal with 0.72% and highest in Hungary with 4.63%. For the period of 1990 to 2006, Switzerland grew at the slowest rate (0.64%) and Ireland at the highest rate (5.38%). The UK is the country that scores highest on the anti-self-dealing index whereas Mexico is at the bottom of the league table. A series of countries (e.g. Japan and the UK) achieve the observed maximum value of 5 for the anti-directors-rights index and the minimum value of 2 (e.g. Greece and Hungary). While Turkey has the lowest GDP per capita in both 1990 and 2000, it also has the highest percentage of the population which belong to a hierarchical religion. Japan is in exactly the opposite case with the highest GDP per capita in 1990 (Norway ranks at the top in 2000) and the lowest percentage of the population belonging to a hierarchical religion. Belgium ranges at one extreme of the spectrum in terms of linguistic diversity: two inhabitants selected at

[22] It is measured in 2000 for most countries as this is the year which provides the best sample coverage. For all other countries it is measured in the year closest to 2000.

random from Belgium have a 73% chance of not having the same mother tongue. In contrast, in Korea the probability of bumping into a person with a different mother tongue is close to zero. Denmark not only has the highest level of trust, but it also has the lowest level of income inequality. Mexico has the most severe income inequality while its level of trust (21.8%) is below the cross-country average of 35%. This suggests that the negative relationship between trust and income inequality uncovered by the previous literature (e.g. Knack and Keefer (1997)) is also reflected in our data sample. Finally, the USA has the highest number of lawyers (3,844) per million inhabitants whereas Korea has the lowest (130).

The Pearson correlation matrix for all the variables and instruments is reported in Table 2. As reported in the previous literature, trust is highly and negatively correlated with income inequality (as measured by the Gini coefficient) and the percentage of the population belonging to a hierarchical religion. There is a negative correlation between the strictness of employment protection legislation on one side and the anti-self-dealing index and the anti-directors-rights index on the other side.

4. Empirical Results

Before moving on to the discussion of the estimation results of the simultaneous-equations model, we investigate the relationship between the various variables with the help of diagrams and univariate regressions. Figure 1 shows the relationship between the OECD measure of the strictness of employment protection legislation and trust. There is a negative linear relationship between the two variables (the coefficient on trust is significant at the 13% level) suggesting that countries with low levels of trust have better employment protection than those with high levels of trust. When the strictness of employment protection legislation is regressed in a quadratic equation on both the level of trust and the square of trust, the fit of

the line increases from an R^2 of 0.088 to about 0.38. Both the coefficient on the level of trust and that on the square of trust are significant at the 1% level of significance. The results from the quadratic equation suggest that, at low levels of trust, an increase in trust reduces the stringency of employment protection law to attain a minimum at about 40% of trust and to increase again thereafter.

Compared to the strictness of employment protection legislation, the impact of trust on the anti-self-dealing index is much lower. As Figure 2 suggests the goodness of fit of the various types of regressions (linear, quadratic and cubic) is much lower. In addition, it is only in the cubic regression that the coefficient on (the cube of) trust is significant at the 10% level of significance. When equivalent regressions are estimated for the augmented sample of 56 countries with data available on both the anti-self-dealing index and trust, the results are even worse. The at best weak relationship between the anti-self-dealing index and trust suggests that trust on its own cannot explain differences in investor protection. Obviously any univariate regression ignores the potential interaction between investor protection and employee rights.

Figure 3 investigates exactly that interaction. As the figure shows, there is a strong negative relationship between the two. The goodness of fit of the linear regression is relatively high with an R^2 of 0.24 and the F-test and coefficient on the dependent variable are both significant at the 1% level. Given the existence of a strong negative relationship between the anti-self-dealing index and the level of employment protection legislation, it is essential to take into account this interaction when investigating the impact of trust and the institutional settings on economic growth.

Table 3 reports the results from the estimation of the system of simultaneous equations. Each of the first four panels in the table contains the results for one of the four equations. Panel A

contains the estimated coefficients for the equation explaining the strictness of employment protection regulation. Panel B reports the results for the investor protection equation, Panel C is on the economic growth equation and Panel D shows the results for the trust equation. The additional panel, Panel E, lists the instruments used for each system of equations. To check the robustness of our results, we experiment with various sets of instruments. The first four columns are based on the average annual GDP growth over the period of 2000-2006 while the last four columns are based on average annual GDP growth over the period of 1990-2006. As the latter four systems of equations are based on a longer period of economic activity, they may reflect long-term economic growth more accurately. However, they may suffer from an endogeneity problem as part of the 1990-2006 period precludes the date of measurement for the explanatory variables (e.g. trust which is measured in the late 1990s). Conversely, the former four systems do not suffer from this problem, but are based on a shorter period which may not adequately reflect long-term economic growth.

The results are consistent across the two periods for measuring economic growth and the various sets of instruments. However, the coefficients tend to have higher significance levels when economic performance is measured over the 1990-2006 period, which is in line with what one would expect. The regression results (Panel A) confirm that there is a negative relationship between the strictness of employment protection regulation on one side and trust and the anti-self-dealing index on the other side. In turn, the anti-self-dealing index (Panel B) is affected negatively by the degree of worker rights and to a lesser extent trust. More importantly, economic growth (Panel C) is positively affected by trust, the strictness of employment protection legislation and investor protection as measured by the anti-self-dealing index. In five out of the ten regressions reported in Table 3, the coefficients on the

latter two variables are significant at the 1% level. They are significant the 10% level or better in another four of the regressions.

Similar to the previous research (e.g. Knack and Keefer (1997)), we find that trust has a positive effect on economic growth: the coefficient on trust is significantly different from zero in all, but one of the regressions. Interestingly, the coefficient on trust is not the only significant one as the coefficients on EPL and the anti-self-dealing index are also significantly different from zero and positive. This suggests that trust explains economic growth over and above the degree of investment protection and the strictness of employment protection legislation. This suggests that differences in investor rights and EPL alone cannot explain differences in economic growth. In other words, trust explains not only differences in economic growth, but it also explains choices in terms of the institutional set up, in particular the levels of investor and employment rights. While Zak and Knack (2001) use somewhat different measures of the institutional settings (such as their property rights index which measures how well these rights are enforced by the government whereas we focus on the rights enjoyed by corporate stakeholders), our results are comparable to theirs: even after adjusting for the institutional setting trust still has a positive impact on economic growth.

In addition to the types of specifications and the sets of instruments reported in Table 3, we estimate a series of alternative specifications. For example, we test for the existence of an inverse U-shaped relationship between economic performance and EPL as found by Belot et al. (2007). When trust as well as EPL and its square are included in equation (3), all three of them end up being insignificant (equations (1) and (2) are not affected). When *either* trust *or* EPL as well as its square are included in the regression, each of the coefficients is significant. Similar to Belot et al. (2007), we find a hump-shaped relationship between GDP per capita growth and EPL.

When we replace Djankov et al.'s (2008) anti-self-dealing index by La Porta et al.'s (1997, 1998) anti-director-rights index, we still find a negative relationship between EPL and investor rights. We also find that both EPL and the investor rights index, in addition to trust, have a positive effect on economic performance. However, contrary to the results in Table 3, we do find that trust explains the institutional setting. Given Djankov et al.'s (2008) own statement that their anti-self-dealing index has a stronger theoretical foundation than the old anti-director-rights index, we feel that we should attach more credence to the results from Table 3.

Finally, we also investigate whether there is a non-linear relationship between EPL or the anti-self-dealing index on one side and trust on the other side as Figures 1 and 2 suggest. However, we do not find such a non-linear link. While the two figures clearly suggest a quadratic or cubic relationship, they obviously omit one important variable which is the level of rights enjoyed by the other class of stakeholders. Indeed, as the regression results in Table 3 show it is important to adjust for the latter given the negative link between the rights conferred to workers and those conferred to investors. Hence, Figures 1 and 2 only provide a partial picture of the story.

5. Conclusion

To our knowledge, this is the first paper to investigate the links between trust, the institutional setting (in terms of employment protection legislation (EPL) and investor rights) and to study the impact of all three on economic performance. In line with the previous literature (e.g. Knack and Keefer (1997), and Zak and Knack (2001)), we find that trust has a positive impact on economic growth, as measured GDP per capita growth. We also find that EPL and investor rights are linked negatively and that both (although the latter to a lesser

extent) are substitutes for trust. More interestingly, all three variables have a *positive* effect on economic growth.

While the rapidly expanding law and finance literature, launched by the seminal work of La Porta et al. (1997b, 1998), focuses on the rights of shareholders based on the premise that their investments in the firm are sunk funds, our results suggest that it is important not to ignore the rights of other stakeholders such as workers. Indeed, while our empirical results suggest a clear trade-off between the two, both investor rights and EPL have a positive impact on economic performance. This suggests that there is some credence to the strand of the literature on EPL which argues that there are net economic benefits generated by the latter. In addition, the results also provide support for varieties of capitalism literature (Amable (2003) and Hall and Soskice (2001)) which argues that, due to complementarities between various types of institutional arrangements, significantly different sets of institutions may nevertheless produce fairly similar levels of economic outcome. To sum up, while striking the balance between investor and worker rights is ultimately a political decision, this decision seems to be less straightforward than what is currently being argued in much of the law and finance literature.

References

Amable, B. (2003), *The Diversity of Modern Capitalism*, Oxford: Oxford University Press.

Arrow, K. (1975), 'Gifts and Exchanges', in: Edmund P. (ed.), *Altruism, Morality and Economic Theory*, New York: Russel Sage Foundation, 13-28.

Bartelsman, E. and J. Hinloopen (2005), 'Unleashing Animal Spirits: Investment in ICT and Economic Growth', in Soete,L. and B. ter Weel (eds.), *The Economics of the Digital Economy*, Cheltenham: Edward Elgar, 272-304.

Belot, M.J., Boone, J. and J.C. van Ours (2007), 'Welfare Improving Employment Protection', *Economica* 74 (295), 381-396.

Boyer, R. (2006), 'How do Institutions Cohere and Change', in Wood, G. and P. James (eds.), *Institutions, Production and Working Life*, Oxford: Oxford University Press.

Brooks, C. (2008), *Introductory Econometrics for Finance*, 2nd edition, Cambridge: Cambridge University Press.

Caballero, R.J. and M.L. Hammour (1998), 'The Macroeconomics of Specificity', *Journal of Political Economy* 106 (4), 724-767.

Deelen, A., Jongen, E. and S. Visser (2006), 'Employment Protection Legislation. Lessons from Theoretical and Empirical Studies for the Dutch Case', Centraal Plan Bureau CPB Document No 135.

Djankov, S., La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and R.W. Vishny (2008), 'The Law and Economics of Self-Dealing', *Journal of Financial Economics* 88 (3), 430-465.

Fukuyama, F. (1995), *Trust. The Social Virtues and the Creation of Prosperity*, London: Hamish Hamilton.

Gordon, R.G. (2005), *Ethnologue: Languages of the World*, 15th edition, Dallas, Texas: SIL International.

Greene, W. (2003), *Econometric Analysis*, Upper Saddle River (NJ): Prentice-Hall.

Hall, P. and D. Soskice (2001), 'An Introduction to the Varieties of Capitalism', in Hall, P. and Soskice, D. eds., *Varieties of Capitalism: The Institutional Basis of Competitive Advantage*, Oxford: Oxford University Press.

Knack, S. and P. Keefer (1997), 'Does Social Capital Have an Economic Payoff? A Cross-country Investigation', *Quarterly Journal of Economics* 112 (4) , 1251-1288.

Kugler, A.D. and G. Saint-Paul (2004), ' How Do Firing Costs Affect Worker Flows in a World with Adverse Selection?', *Journal of Labor Economics* 22 (3), 553-584.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and R.W. Vishny (1997a), 'Trust in Large Organizations', *American Economic Review* 87 (2), 333-338.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and R.W. Vishny (1997b), 'Legal Determinants of External Finance', *Journal of Finance* 52 (3), 1131-1150.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and R.W. Vishny (1998), 'Law and Finance', *Journal of Political Economy* 106 (6), 1113-1155.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and R.W. Vishny (2000a), 'Agency Problems and Dividend Policies around the World', *Journal of Finance* 55 (1), 1-33.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and R.W. Vishny (2000b), 'Investor Protection and Corporate Governance', *Journal of Financial Economics* 58, 3-27.

Levine, R. (1997), 'Financial Development and Economic Growth: Views and Agenda', *Journal of Economic Literature* 35, 688-726.

Lieberson, S. (1981), *Language Diversity and Language Contact*, Stanford: Stanford University Press.

Magee, S.P., Brock, W.A., and L. Young (1989), *Black Hole Tariffs and the Endogenous Policy Theory*, Cambridge: Cambridge University Press.

Murphy, K., Shleifer, A. and R.W. Vishny (1991), 'The Allocation of Talent: Implications for Growth', *Quarterly Journal of Economics* 106 (2), 503-530.

Nagypál, E. (2002), 'The Cost of Employment Protection in the Presence of Match-Specific Learning', mimeo, Northwestern University.

Nickell, S.J. and R. Layard (1999), 'Labour Market Institutions and Economic Performance' in Ashenfelter, O. and D. Card (eds.), *Handbook of Labor Economics*, 3, Amsterdam: North Holland.

OECD (2004), *Employment Protection Regulation and Labour Market Performance*, OECD.

Putnam, R.D. (1993), *Making Democracy Work. Civic Traditions in Modern Italy*, Princeton: Princeton University Press.

Shleifer, A. and R.W. Vishny (1997), 'A Survey of Corporate Governance', *Journal of Finance* 52 (2), 737-783.

Zak, P.J. and S. Knack (2001), 'Trust and Growth', *Economic Journal* 111, 295-321.

Table 1: Descriptive statistics

The variables are defined in Table A.1.

	N	Minimum	Maximum	Mean	Std. Deviation
Trust	28	6.800	66.500	35.143	16.306
Employment Protection Legislation	28	.200	3.700	1.968	.846
Average growth of GDP per capita 2000-6	28	.721	4.630	2.386	1.263
Average growth of GDP per capita 1990-2006	28	.642	5.377	2.128	1.020
Anti-self-dealing index	28	.172	.950	.444	.217
Anti-directors-rights index	28	2.000	5.000	3.393	.927
Log of GDP per capita in 1990	28	7.825	10.415	9.457	.746
Log of GDP per capita in 2000	28	7.994	10.531	9.661	.753
Percentage of population belonging to hierarchical religion	25	.300	99.800	54.189	38.516
Linguistic diversity	28	.003	.734	.276	.211
Gini coefficient	28	24.700	51.870	32.440	6.088
Number of lawyers per million inhabitants	27	130.464	3,843.947	1,330.509	1,063.853

Table 2: Correlation matrix

	Trust	Anti-self-dealing index	Anti-directors-rights index	Employment protection legislation	Ln (GDP per capita growth) 1990-2006	Ln (GDP per capita growth) 2000-2006	Number of lawyers per population (m)	Linguistic diversity	Ln (GDP per capita) for 1990	Ln (GDP per capita) for 1990	Percentage of population belonging to hierarchical religion	Gini coefficient
Trust	1.000											
Anti-self-dealing index	-0.008	1.000										
Revised anti-directors-rights index	0.204	0.606	1.000									
Employment protection legislation	-0.227	-0.409	-0.143	1.000								
Ln (GDP per capita growth) 1990-2006	-0.327	-0.036	0.126	-0.063	1.000							
Ln (GDP per capita growth) 2000-2006	-0.138	0.262	0.307	-0.003	0.618	1.000						
Number of lawyers per population (m)	-0.095	0.330	0.072	-0.196	-0.406	-0.318	1.000					
Linguistic diversity	0.123	-0.051	-0.238	-0.021	-0.413	-0.317	0.341	1.000				
Ln (GDP per capita) for 1990	0.698	0.266	0.261	-0.338	-0.747	-0.415	0.218	0.337	1.000			
Ln (GDP per capita) for 1990	0.706	0.328	0.310	-0.340	-0.709	-0.260	0.195	0.312	0.985	1.000		
Percentage of population belonging to hierarchical religion	-0.700	-0.163	-0.375	0.361	0.031	0.095	0.167	0.286	-0.489	-0.473	1.000	
Gini coefficient	-0.519	0.401	-0.111	0.040	-0.205	0.124	0.549	0.199	-0.128	-0.083	0.524	1.000

Table 3: Estimation results from simultaneous-equations system based on average annual GDP growth over 2000-2006

The first four systems of simultaneous equations are based on GDP growth over 2000-2006 and the last four on GDP growth over 1990-2006 Panel A, B, C and D display the results for the equation explaining EPL, investor protection, economic growth and trust, respectively. Panel E specifies the exogenous variables included in the equation explaining trust. The variables are defined in Table A.1. The estimation technique is 3SLS.

	GDP growth over 2000-2006				GDP growth over 1990-2006			
Panel A: Employment protection legislation equation								
Constant	3.653 (0.000)	3.342 (0.000)	3.663 (0.000)	3.281 (0.000)	3.679 (0.000)	3.338 (0.000)	3.686 (0.000)	3.323 (0.000)
Trust	**-0.017** **(0.102)**	**-0.022** **(0.052)**	-0.017 (0.114)	**-0.018** **(0.086)**	**-0.018** **(0.089)**	**-0.023** **(0.043)**	**-0.018** **(0.098)**	**-0.019** **(0.083)**
Anti-self-dealing index	**-2.587** **(0.000)**	**-1.402** **(0.003)**	**-2.648** **(0.000)**	**-1.552** **(0.000)**	**-2.562** **(0.000)**	**-1.320** **(0.001)**	**-2.607** **(0.000)**	**-1.589** **(0.000)**
Panel B: Investor protection equation								
Constant	**1.411** **(0.000)**	**2.385** **(0.019)**	**1.382** **(0.000)**	**2.115** **(0.000)**	**1.435** **(0.000)**	**2.529** **(0.003)**	**1.413** **(0.000)**	**2.092** **(0.000)**
Trust	-0.007 (0.121)	-0.016 (0.189)	-0.006 (0.137)	**-0.012** **(0.094)**	**-0.007** **(0.105)**	-0.017 (0.120)	-0.007 (0.117)	**-0.012** **(0.089)**
Employment protection legislation	**-0.386** **(0.000)**	**-0.714** **(0.032)**	**-0.377** **(0.000)**	**-0.645** **(0.000)**	**-0.390** **(0.000)**	**-0.758** **(0.005)**	**-0.383** **(0.000)**	**-0.629** **(0.000)**
Panel C: Average annual GDP growth (log)								
Constant	**4.690** **(0.000)**	**4.438** **(0.000)**	**4.691** **(0.000)**	**4.661** **(0.000)**	**4.512** **(0.000)**	**4.305** **(0.000)**	**4.512** **(0.000)**	**4.336** **(0.000)**
Trust	**0.002** **(0.003)**	**0.004** **(0.043)**	**0.002** **(0.003)**	**0.002** **(0.037)**	**0.002** **(0.005)**	0.004 (0.155)	**0.002** **(0.005)**	**0.002** **(0.013)**
Employment protection legislation	**0.045** **(0.001)**	**0.129** **(0.036)**	**0.045** **(0.002)**	**0.050** **(0.080)**	**0.063** **(0.000)**	0.134 (0.117)	**0.063** **(0.000)**	**0.107** **(0.000)**
Anti-self-dealing index	**0.134** **(0.002)**	**0.173** **(0.073)**	**0.135** **(0.003)**	**0.089** **(0.061)**	**0.178** **(0.000)**	**0.196** **(0.094)**	**0.179** **(0.000)**	**0.172** **(0.000)**
Log (GDP per capita)	**-0.027** **(0.000)**	**-0.029** **(0.006)**	**-0.027** **(0.000)**	**-0.023** **(0.011)**	**-0.015** **(0.005)**	-0.016 (0.113)	**-0.015** **(0.005)**	-0.007 (0.378)

Table 3 cont'd

Panel D:Trust								
Constant	-15.899 (0.583)	-21.901 (0.456)	-29.146 (0.297)	-53.737 (0.083)	-8.868 (0.782)	-16.907 (0.585)	-24.909 (0.413)	-54.150 (0.108)
Number of lawyers per million inhabitants	0.000 (0.823)	–	0.001 (0.612)	0.002 (0.467)	0.000 (0.960)	–	0.001 (0.776)	0.001 (0.684)
Log (GDP per capita)	**9.643** **(0.001)**	**8.270** **(0.005)**	**11.394** **(0.000)**	**14.258** **(0.000)**	**8.744** **(0.005)**	**7.821** **(0.013)**	**10.788** **(0.001)**	**14.139** **(0.000)**
Linguistic diversity	11.347 (0.145)	10.530 (0.228)	–	-3.382 (0.710)	12.305 (0.212)	10.606 (0.262)	–	-4.000 (0.673)
Percentage of population belonging to hierarchical religion	**-0.157** **(0.011)**	**-0.201** **(0.002)**	**-0.117** **(0.043)**	**–**	**-0.173** **(0.013)**	**-0.207** **(0.003)**	**-0.129** **(0.036)**	–
Gini coefficient	**-1.208** **(0.007)**	-0.474 (0.117)	**-1.312** **(0.006)**	**-1.577** **(0.001)**	**-1.067** **(0.030)**	-0.435 (0.164)	**-1.154** **(0.022)**	**-1.404** **(0.005)**
Panel E: Instruments								
Number of lawyers per million inhabitants	✓		✓	✓	✓		✓	✓
Log (GDP per capita)	✓	✓	✓	✓	✓	✓	✓	✓
Linguistic diversity	✓	✓		✓	✓	✓		✓
Gini coefficient	✓	✓	✓	✓	✓	✓	✓	✓
Percentage of population belonging to hierarchical religion	✓	✓	✓		✓	✓	✓	
Number of observations	24	25	24	27	24	25	24	27

Figure 1: Impact of trust on employment protection

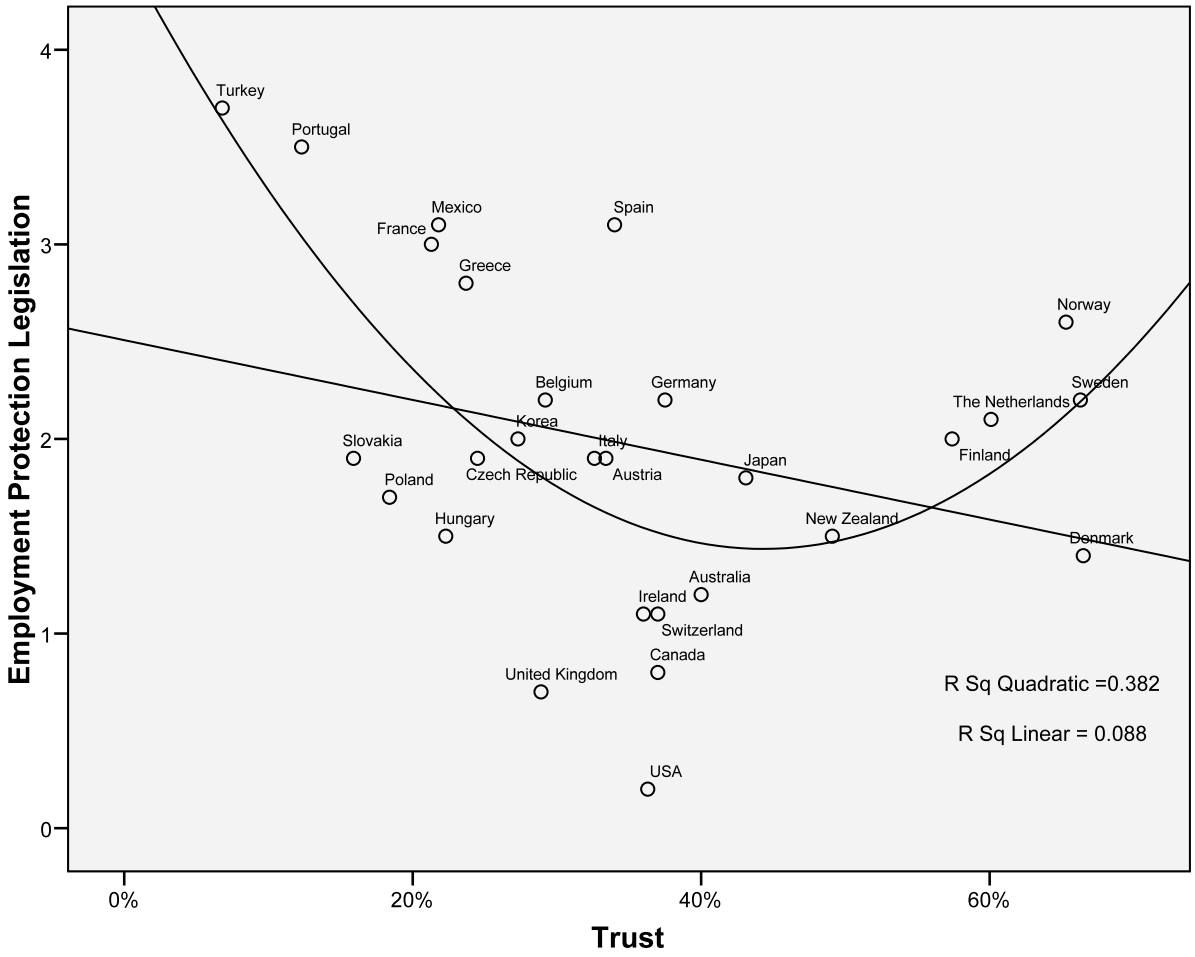


Figure 2: Impact of trust on anti-self-dealing index

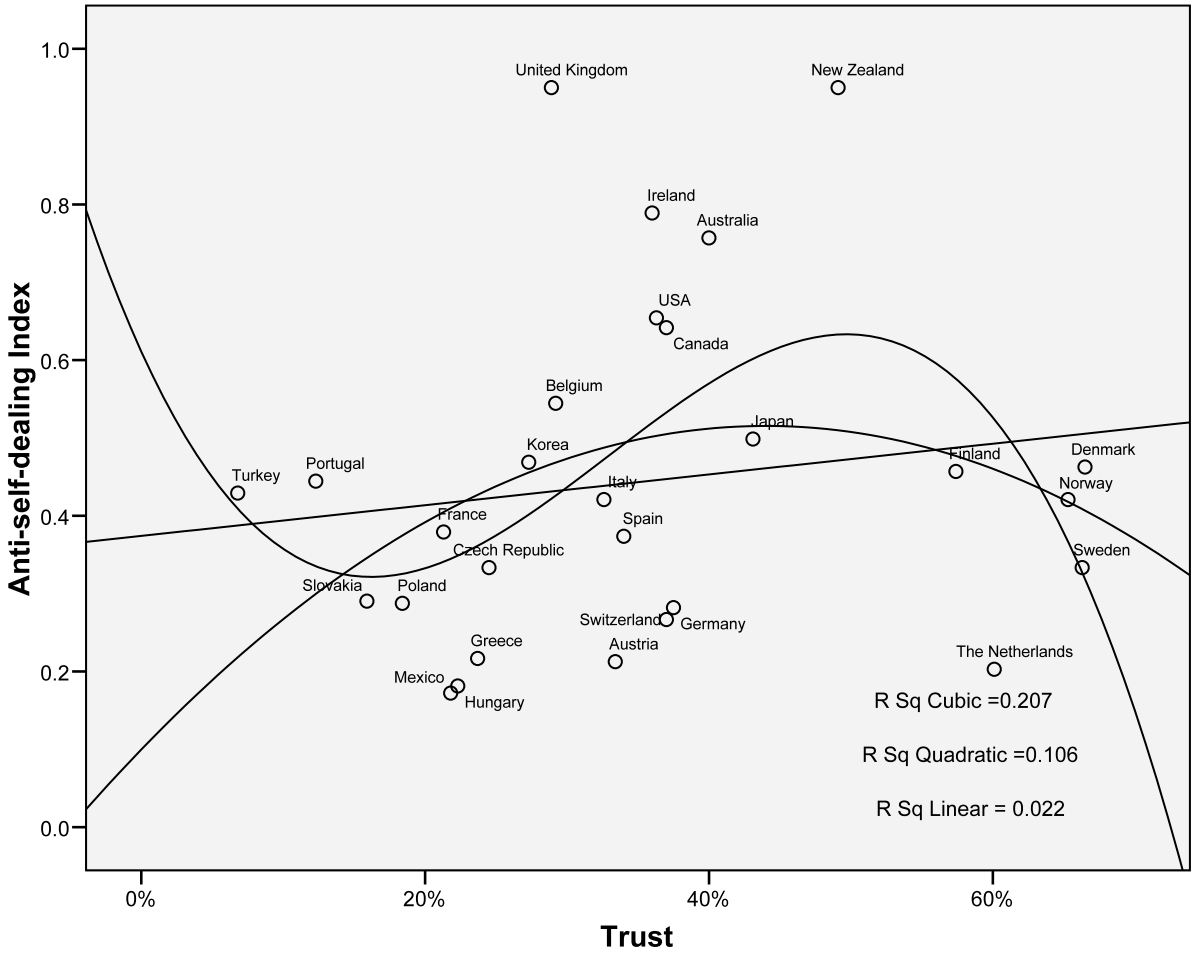
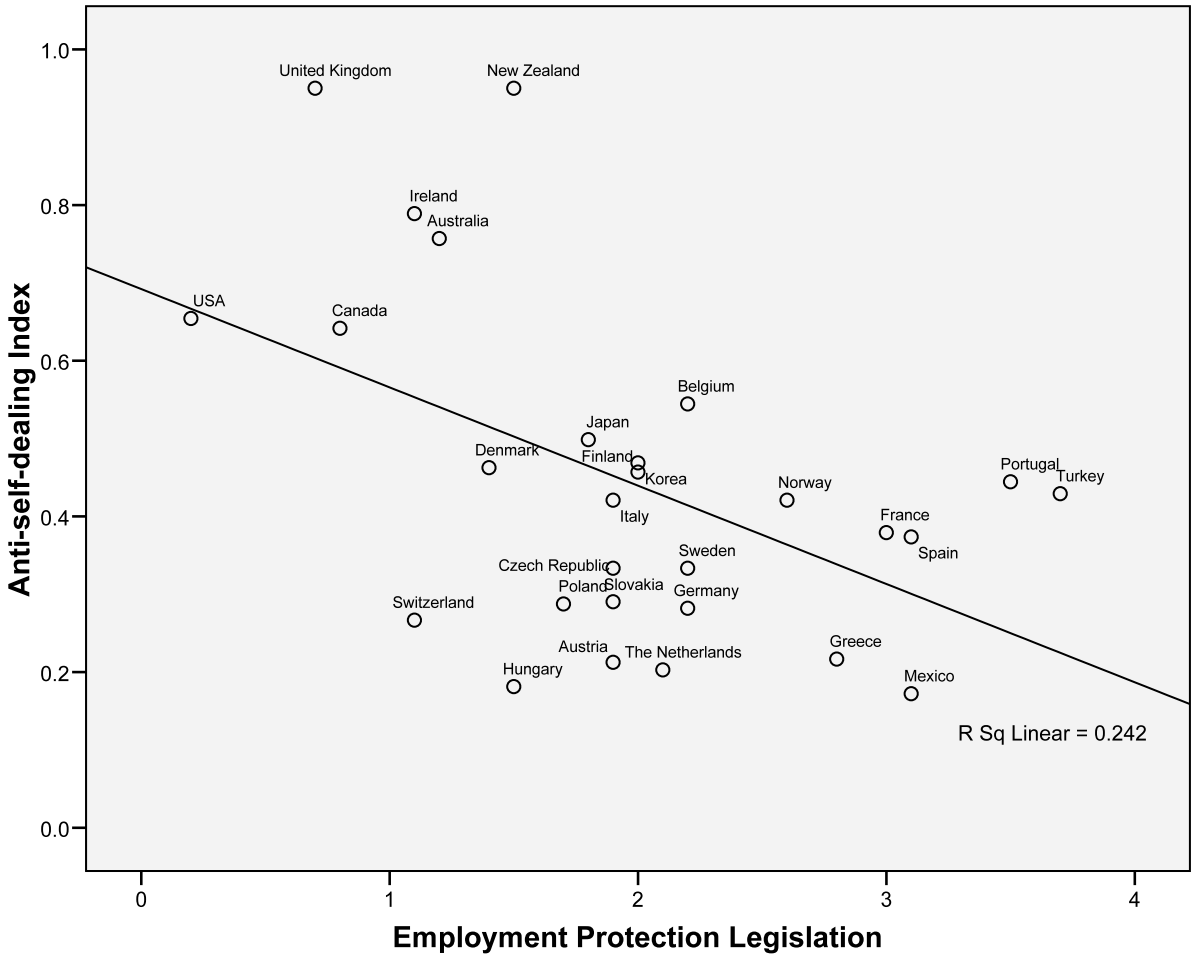


Figure 3: Relation between anti-self-dealing index and employment protection legislation



Appendix

Table A.1: Definition of variables and data sources

Variable	Definition	Source
Employment protection legislation	Index measuring the strictness of employment protection legislation (index ranges from 0 to 6); measured in 2003	OECD Employment Outlook (2004)
Anti-self-dealing index	Counts the number of hurdles that the controlling shareholder has to jump in order to engage in self-dealing; based on legal requirements in place in May 2003	Djankov et al. (2008)
Anti-directors-rights index	The index is the sum of six mechanisms, each of which is assigned a value of 1 if the mechanism increasing shareholder protection exists, and zero otherwise. The mechanisms are: (1) the company law allows shareholders to mail their proxy votes to the firm; (2) shareholders are not required to deposit their shares prior to the general shareholders' meeting; (3) cumulative voting for directors or proportional representation of minorities on the board of directors is allowed; (4) an oppressed-minorities mechanism is in place; (5) the minimum percentage of share capital that entitles a shareholder to call for an extraordinary shareholders' meeting is less than the sample median of 10% and (6) shareholders have pre-emptive right to buy newly issued shares that can be waived only by a shareholders' vote. This right protects the shareholders from an unwanted dilution of their stake.	La Porta et al. (1997b, 1998)
Trust	Percentage of respondents for each country stating that 'most people can be trusted' versus the alternative that 'you can't be too careful in dealing with people'; measured during one of the years during the 1997-2001 period except for Australia (1995), Ireland and Portugal (1990), Taiwan (1994) and Uruguay (1996)	World Values Surveys (WVS)
GDP per capita	Measured in constant year 2000 US dollars	World Development Indicators – World Bank (2008)

Table A.1 cont'd

Number of lawyers per million inhabitants	Number of lawyers divided by the population in millions	Population in millions in 2004 from World Development Indicators – World Bank (2008); number of lawyers is sourced from Council of Bars and Law Societies of Europe (CCBE) for the European countries (incl. Turkey), the American Bar Association for the USA, and various national and international organisations for the other countries
Ethnolinguistic diversity	The index is defined as the probability that any two randomly chosen inhabitants of a country will have different mother tongues (Lieberson (1981)); the index ranges from 0 to 1	Gordon (2005)
Percentage of population belonging to a hierarchical religion	Percentage of population that are Roman Catholic, Eastern Orthodox or Muslim; measured during the early 1990s.	La Porta et al. (1997a)
Percentage of population belonging to the Catholic religion	Percentage of population that are Roman Catholic; measured during the early 1990s.	La Porta et al. (1997a)
Gini coefficient	This is a measure of income inequality; the index ranges from 0 (absolute equality) to 100 (absolute inequality); measured during the mid to late 1990s except for Nepal and Nigeria (2003), Jordan, Latvia and Pakistan (2002), Argentina, Brazil, Bulgaria and Israel (2001), Chile (2000), China and India (2004).	World Development Indicators – World Bank (2008)

european corporate governance institute

about ECGI

The European Corporate Governance Institute has been established to improve *corporate governance through fostering independent scientific research and related activities.*

The ECGI will produce and disseminate high quality research while remaining close to the concerns and interests of corporate, financial and public policy makers. It will draw on the expertise of scholars from numerous countries and bring together a critical mass of expertise and interest to bear on this important subject.

The views expressed in this working paper are those of the authors, not those of the ECGI or its members.

www.ecgi.org

european corporate governance institute

ECGI Working Paper Series in Finance

Editorial Board

Editor
Paolo Fulghieri, Professor of Finance, University of North Carolina, ECGI & CEPR

Consulting Editors
Franklin Allen, Nippon Life Professor of Finance, Professor of Economics, The Wharton School of the University of Pennsylvania & ECGI

Patrick Bolton, Columbia University, ECGI & CEPR

Marco Pagano, Professor of Economics, Università di Salerno, ECGI & CEPR

Luigi Zingales, Robert C. McCormack Professor of Entrepreneurship and Finance, University of Chicago, ECGI & CEPR

Julian Franks, Corporation of London Professor of Finance, London Business School, ECGI & CEPR

Xavier Vives, Professor of Economics and Finance, IESE & CEPR

Editorial Assistants :
Paolo Casini, "G.d'Annunzio" University, Chieti & ECARES,
Lidia Tsyganok, ECARES, Université Libre De Bruxelles

www.ecgi.org\wp