

Discussion Paper

Is Trust in Companies Rooted in Social Trust, or Regulatory Quality, or Both?

May 2018

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Abstract

While trust in the business sector is crucial for well-functioning markets, there is surprisingly little empirical work on its sources. Available research recognizes social trust as a major force explaining confidence in political institutions. Regulation is frequently advocated to foster trust in companies as it is supposed to reduce scope for opportunistic behavior. Based on individual level data from World Values Survey/European Values Studies and economic regulation data from the Economic Freedom of the World-project the paper empirically investigates joint effects of social trust, intensity and quality of regulation on public trust in major companies. Our findings suggest that it is not the intensity of economic regulation per se which matters for trust in companies but that the impartiality with which rules are enforced is decisive, even when we control for social trust. Trust in business can be facilitated by an implicit guarantee of governments to fair and impartial treatment.

Key Words:

Social Trust, Trust in Companies, Economic Regulation, World Values Survey

JEL codes:

D90, L50, P12

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Publication note

A previous version was presented at the 55th Annual Meeting of the Public Choice Society, March 1-3, 2018, Charleston/SC, USA and the 2018 Meeting of the European Public Choice Society, Rome, Italy, April 11-14, 2018. The authors would like to thank all participants of the sessions and especially Christine Ries and Francesco Salustri for helpful comments and suggestions.

1 Introduction

The modern firm is a key institution in market economies. Big companies in particular are quasi-blematic institutions of capitalist systems (*Williamson, 1985*). A minimal public confidence that companies do not cheat, shirk, or act otherwise opportunistically is a prerequisite for a well-functioning market system. Positive public perceptions of firms and trust in major companies are therefore essential for the legitimacy and general acceptance of a market economy order (e.g., *Di Tella & MacCulloch, 2009*). Yet, there is surprisingly little empirical work on the foundations of trust in companies. Research focuses predominantly on the sources of confidence in political and legal institutions. A central finding is that, among other factors, social trust is strongly associated with trust in political institutions, although the particular channels and the direction of causality are not always clear (*Beugelsdijk, 2006; Rothstein & Stolle, 2008; Uslaner, 2008; Grönlund & Setälä, 2012; Sonderskov & Dinesen, 2016; Newton, Stolle & Zmerli, 2018*).

Management science is typically concerned with confidence in particular industries, branches or single companies rather than trust in business in general (e.g., *Ingenhoff & Sommer, 2010; Pirson, Martin & Parmar, 2016*). The Great Recession also spurred research interest in the sources of (dis-) trust in banks and other financial institutions (*Jansen, Morsch & van der Crujisen, 2015; Knell & Stix, 2015; Fungacova, Hasan & Weill, 2017*).

Knowledge about the roots of trust in business is of utmost importance. Distrust is associated with a skeptical view of a capitalist order and a more positive attitude toward market regulations (*Aghion et al., 2010; Pinotti, 2012; Dimitrova-Grajzl, Grajzl & Guse, 2012*). Provided that the general public perceives regulators as benevolent, competent, and more trustworthy than market actors (*Williamson, 1993; Pitlik & Kouba, 2015*), high-quality economic regulation may serve as a tool to increase trust in companies. In this vein, *Anania & Nisticò (2004)* develop a model of a credence goods market and show that quality regulations serve as a substitute for lacking information and trust for consumers. *Carlin, Dorobantu & Viswanathan (2009)* demonstrate in a theoretical contribution that regulation and trustfulness can be substitutes. In an empirical paper, *Berggren & Jordahl (2006)* examine economic freedom as a potential determinant of generalized social trust at the aggregate, national level. By serving as a disciplinary device, enhanced market competition supports trustworthy behavior, and thus can strengthen particularized trust in firms, and supports the emergence of generalized trust between people. Yet, to the best of our knowledge, we are not aware of individual-level studies which consider empirically the quality of economic regulation as a determinant of general public's trust in the business sector as a whole.

The present paper attempts to narrow this research gap by applying a combined micro-level/macro-level approach. In particular, the main question we are interested in is 'Does high-quality economic regulation help in improving trust in the business sector?'¹ In section 2 we present an overview of related empirical literature and derive our main hypotheses. Section 3 describes the data. We employ individual-level data on trust in other people and in companies from the World Values Survey/European Values Study, as well as data on regulatory quality and intensity of regulation from the Fraser Institute's Economic Freedom of the World compilation. In section 4 we present our empirical strategy. Section 5 discusses the results of our analysis. Section 6 concludes.

2 Related empirical literature and hypotheses

2.1 Related empirical literature

We are aware of only a few empirical papers which study sources of trust in companies in general. *Uslaner* (2010) explores the related question of determinants of individuals' perceptions that "business corporations generally strike a fair balance between making profits and serving the public interest." For example, he finds that a more positive view of business is associated with a lower degree of education, and he also reports a close connection of perceptions of business motivations with some general determinants of generalized social trust, i.e., whether hard work offers a guarantee of success, or whether people believe that income inequality is increasing.

Adams, Highhouse & Zickar (2010) analyze the determinants of general distrust in corporations. Based on 161 survey responses they conclude that people who score higher on cynicism, negative affectivity and liberal political attitudes show higher distrust in companies. They also find evidence in favor generalized social trust enhancing trust in companies.

Chan, Lam & Liu (2011) explore micro-level determinants of generalized social trust and of trust in major companies for China and the USA. They use data from the 2000 and 2004 waves of World Value Surveys (WVS) and find that income, gender as well as attitudes towards equality and competition impact on trust in major companies, especially in the USA. In China, household features (single, married, widowed) also play a role. The authors also include a variable "fairness"

¹ Note that we use 'trust in companies' and 'confidence in companies' interchangeably throughout the paper.

in their analysis which can be interpreted as capturing trust in others.² *Chan, Lam & Liu* (2011) find that fairness is positively related with trust in major companies in China as well as in the U.S.

Kim (2012), inter alia, investigates determinants of individual-level trust in multinational corporations. He finds that generalized social trust has a positive connection with trust in multinationals. His analysis covers 10 Asian countries in the year 2003.

Kaya & Walker (2012) analyze individual attitudes toward the impact of multinational corporations on local businesses. Using survey data from the 2003 International Social Survey Program they find that better educated people, those employed in the private sector as well as those without nationalistic tendencies are more likely to perceive multinational corporations as being not harmful to local business.

Pirson, Martin & Parmar (2016) focus on trust in a specific but hypothetical firm rather than on trust in the business sector in general. They apply a factorial vignette approach to generate survey data about hypothetical firms. They find that generalized social trust positively impacts on trust in a specific firm. In addition, the industry the hypothetical firm is operating in matters, with Oil and Gas companies facing lowest levels of trust. The authors show that the perceived trustworthiness of a firm along dimensions like ability, benevolence and integrity enhances trust in a firm. *Pirson, Martin & Parmar* (2017) examine the role of personal values in the formation trust in business of two stakeholder groups, i.e. potential customers and potential employees with the same method.

Summing up, related empirical literature puts a clear focus on individual-level determinants of trust in companies. The political-economy relevant question whether trust in companies can be altered by high-quality economic regulation is unexplored.

2.2 Social trust, trust in political institutions and trust in business

Whereas generalized social trust expresses whether individuals trust other, unknown people, trust (or confidence) in an institution refers to a more or less anonymous organization. Generalized social trust is directed horizontally towards 'equals', while confidence in political institutions refers to a vertical relationship with 'authorities' (*Newton*, 2007). In that context, contrary to trust in business, research on the foundations of trust in political institutions, such as the government, the parliament, the civil service, the central bank, or the courts, has gained

² *Chan, Lam & Liu* (2011) use WVS question: Do you think most people would try to take advantage of you if they got a chance, or would they try to be fair?

increasing interest over the past decades (e.g., *Newton & Norris, 2000; Dalton, 2005; Roth, 2015; Helliwell, Wang & Xu, 2016*).

In general, there are two different views on the proximity and the sources of social trust and trust in political institutions (*Mishler & Rose, 2001; Sonderskov & Dinesen, 2016; Newton, Stolle & Zmerli, 2018*). 'Cultural' theories for the formation of social trust emphasize the importance of early socialization in families, kindergarten and school (*Uslaner, 2008*). Trustful individuals have a more optimistic view of the behavior of others and they, thus, tend to be trustful in most circumstances (*Newton, Stolle & Zmerli, 2018*). Hence, from this viewpoint trust in political institutions is an extension of social trust (*Mishler & Rose, 2001*).

'Experiential' theories stress that confidence in political and legal institutions crucially depends on institutional performance (*Helliwell, Wang & Xu, 2016*).³ Institutional trust is a consequence of fair procedures and good outcomes, and bad performance is a potential source of distrust in the respective organization (*Mishler & Rose, 2001; Pirson, Martin & Parmar, 2016*).⁴ Yet, a positive association of institutional and generalized trust is still compatible with the 'experiential' view: First, institutional performance will be improved by higher social trust as the latter improves cooperative behavior and reduces uncertainty and transaction costs (e.g., *La Porta et al., 1997; Bjørnskov, 2010, 2011*). Second, as stressed by *Rothstein & Stolle (2008)*, effective and fair political and legal procedures may shape the perception of unknown others, i.e. generalized social trust.

Empirical studies frequently observe a positive relationship between social trust and trust in political institutions (*Mishler & Rose, 2001; Rothstein & Stolle, 2008; Zmerli & Newton, 2008*). Yet, it is unclear whether generalized trust impacts on institutional trust, or vice versa, or whether both forms of trust are jointly rooted in unknown personality traits (e.g. *Sonderskov & Dinesen, 2016*).

From the cultural perspective, social trust should be projected onto trust in the business sector, and trust in business would be more or less exogenous to institutional performance. If the relationship to the business sector is not perceived as hierarchical, trust in other unknown people might spill-over to companies more easily. If, on the contrary, the relationship between individuals, as customers, clients or employees, and the business sector is perceived as 'not among equals', with companies ostensibly exercising real power, trust in business may be formed

³ *Rothstein & Stolle (2008)* use the term 'institutional' instead of 'experiential'.

⁴ *Van de Walle & Bouckaert (2003)* argue that causality of institutional trust and performance may also work in the opposite direction.

like trust in political authorities. In this case, attitudes towards the business sector will also be shaped by institutional performance.⁵

All in all, the propensity of people to universally trust companies depends on the transmission mechanism at work. Generalized social trust is expected to be positively associated with trust in companies from cultural and experiential perspectives alike, but performance of the business sector impacts on trust only from the experiential view. Based on these conceptual considerations we derive

Hypothesis 1: Social trust is positively related to public trust in companies.

2.3 Regulation and trust in business

Experiential theory implies that good performance of the business sector enhances trust in companies at large. However, it is quite unclear how the 'collective' performance of the business sector is assessed. As *Baumol (2016)* and *Cohen (2016)* argue, analyzing potential sources of trust in business requires an identification of the obligations that business has to society. Obligations can be evaluated against a process- or a results-oriented benchmark.

The process-oriented view is based on the notion that people judge performance by perceptions of fair treatment and ethical behavior. Corruption, favoritism and administrative slack are frequently associated with low trust in political institutions (e.g., *Clausen, Kraay & Nyiri, 2011; Grönlund & Setälä, 2012*). With respect to the business sector, a similar effect is likely to hold when bribing, fraud, greed and unethical behavior of company managers are perceived to be pertinent (e.g., *Glazer, Kanninen & Poutvaara, 2010; Edelman, 2016*).

Fair treatment and non-opportunistic behavior, in turn, are shaped by the guiding and controlling principles of an institution (*Pirson, Martin & Parmar, 2016*). High-quality regulatory institutions that safeguard against exploitation and unlawful conduct reduce opportunistic and

⁵ That is what *Uslaner (2010, 111)* seems to have in mind when he elaborates on trust in banks in the U.S. that "... people have historically seen banks as neighborhood institutions (less so any more), therefore faith in banks has been higher than confidence in business more generally." One may also speculate that smaller firms are trusted more than bigger or multi-national companies as a consequence of a (gradually) different perception of the relationship as more horizontal (small business) rather than more hierarchical/vertical (large companies).

unfair behavior, and thereby contribute to the formation of public trust in firms (*Anania & Nisticò, 2004; Carlin, Dorobantu & Viswanathan, 2009; Pirson, Martin & Parmar, 2016*).⁶

In a similar notion, *Berggren & Jordahl (2006)* identify two related institutional channels. First, legal institutions that establish and enforce private property rights in a fair and efficient manner generate expectations that people in general do behave trustworthily. Courts may therefore serve as a substitute for reputational mechanisms and promote social trust. Second, repeated (market) interactions in a competitive environment that sanctions defection generates particularized trust in other market actors, which in a further step also promotes social trust. This view is corroborated by experimental studies. For example, *Huck, Lünser & Tyran (2012)* show that competition fosters trust as it gives stakeholders leeway in the decision with who to interact. Competition and freedom of choice exert incentives for trustworthy behavior and increase costs of revealing selfishness.⁷ In addition, one might expect second-order effects, as intense government regulation could also increase suspicion towards the business sector in the population. People may simply interpret regulation as a signal that 'something is going wrong', and thereby reduces trust in companies.

From this viewpoint economic regulation does not unambiguously enhance trust in business. There is good, as well as bad regulation (*Grubel, 2017*). As *Wilkinson (2016)* puts it, competition requires good economic regulations that "... facilitate markets processes through the consistent application of clear law, and an absence of bad regulation, which interferes with productive economic activity." Bad and excessive regulation actually provides incentives for rent-seeking and may on the contrary generate opportunities to companies for misconduct. Regulation may be helpful as well as harmful in generating trust in the business sector.

Consequently, it is not the intensity dimension of economic regulation (i.e., extent of regulation) *per se* which matters for trust in companies. Rather, the impartiality with which rules are enforced is decisive (i.e., the process dimension of economic regulation).⁸ If regulatory institutions primarily serve narrow interests of producers, economic regulation, independent of its intensity or extent, undermines trust in companies.⁹ This implies that only an impartial

⁶ *Shleifer (2004)* discusses examples of business practices that are frequently described as immoral or unethical. He also mentions government regulation as a potential remedy – although he is quite skeptical regarding its prospects of success.

⁷ "[W]ith competition, there are stronger incentives for resisting the short-term temptation of exploiting trading partners." (*Huck, Lünser & Tyran, 2012, p. 205*)

⁸ A similar distinction between intensity and process dimension in the context of the economic growth impact of regulation is made by *Jalilian, Kirkpatrick & Parker (2007)*.

⁹ This reasoning is in line with *Berggren & Bjørnskov (2017)* who argue that rules which are believed to benefit only certain groups find less general acceptance.

enforcement of regulation can foster confidence in the business sector. Based on this discussion we hypothesize

Hypothesis 2: Public trust in companies is enhanced by impartial economic regulation.

Furthermore, from the previous line of reasoning it is conceivable that the effect of impartial regulation on confidence in companies depends on the level of generalized social trust. If there is an effect of impartial regulation on trust in companies, it is possibly more pronounced for people who lack generalized social trust. Confidence in the business sector may then stem from two sources: Individuals who generally trust other people are hardly influenced by impartial regulation in their confidence of the business sector. But people who generally distrust others might have a higher propensity to trust companies if markets are backed by high-quality, impartial regulation. In this sense, economic regulation would serve as a substitute for generalized trust as a source of confidence in companies.

Hypothesis 3: Impartial economic regulation is more important for trust-building in companies for people who distrust unknown others.

2.4 Macroeconomic performance and trust in business

Performance may also be assessed with a results-oriented benchmark. This requires an assessment of economic outcomes of the business sector. From the viewpoint of clients and customers, price and quality of provided goods and services of a company are probably good indicators for the respective company's performance. For shareholders, company performance is probably best approximated by long-run profits and the development of share prices. For employees, salary and working conditions are probably good indicators. All measures are, however, in one way or another 'particularized' and do not capture the factors driving universal attitudes of the public toward business altogether and can hardly be interpreted as indicators for the aggregate performance of the business sector in total. Similarly, scandals may be important (Bowler & Karp 2004). If an institution is plagued by a scandal, an otherwise good performance and high consumer satisfaction may not be sufficient to compensate for the induced trust erosion.

Also, overall economic situation of a country can be an indication of performance of both, political and market institutions. For trust in political institutions the literature on vote-popularity-functions (Nannestad & Paldam 1994, and Lewis-Beck & Stegmaier 2013) suggests that unemployment rates, inflation and GDP growth have significant influence on popularity and electoral success of political office holders. Using data for the U.S., Stevenson & Wolfers (2011) report evidence that trust in institutions such as the executive, the judicial system or Congress depends on over-time development of unemployment rates. They also find that high state unemployment is connected to significant declines of trust in 'big business' and 'major companies', and a similar (albeit insignificant) decline in the perceived honesty of 'business executives'." Employing U.S. data for a lengthy time-period of 40 years, Kenworthy & Owens (2011) report that public attitudes towards business and finance sour during recessions, "but perhaps not as much as we might expect". In cross-country comparisons Stevenson & Wolfers (2011) note that countries which experienced the largest increase of unemployment during the Great Recession also observed the strongest decline of trust in government and in the finance sector. It appears that macroeconomic performance impacts on both trust in political institutions and confidence in the business sector, so we expect

Hypothesis 4: Public trust in companies is enhanced by good macroeconomic performance.

3 Data

3.1 Trust in companies and social trust

The main source for individual level data is the combined World Values Survey/European Values Study (WVS/EVS) data set. WVS/EVS is a global research project that collects data on values and beliefs, as well as their change over time. Since 1981, WVS/EVS surveys have been carried out by a worldwide network of social scientists. The resulting integrated data set covers surveys conducted in 113 countries/regions. For data availability reasons we only use survey waves from 1995 until 2014.

Our dependent variable *trust in companies* indicates individual trust in the business sector, obtained from the survey question "I am going to name a number of organizations. For each one, could you tell me how much confidence you have in them: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all?" Among political institutions, one

item mentioned is 'major companies'. Originally coded on a 4-point Likert-scale, we re-code *trust in companies* to a dummy-variable with value '1' if the respondent's answer was 'a great deal' or 'quite a lot', and '0' otherwise.

Social trust, also measured at the individual level, is a dummy variable that takes value '1' if the interviewed person approvingly answers the value survey statement that 'Most people can be trusted'. If the reply is 'You can't be too careful', the indicator is coded '0'.

3.2 Economic regulation

The process dimension of economic regulation can be assessed in terms of the basic criteria for good governance, i.e. the impartiality of state institutions and its governing processes. The main focus is on absence of corruption, clientelism, patronage, and special favors to particularized interest groups in the process of making and enforcing rules (Rothstein & Teorell, 2008). Therefore, we approximate the impartiality of regulation by the Economic Freedom of the World's (Gwartney, Lawson & Hall, 2016) area 2 summary index "Legal structure and security of property rights" (*EFW Legal Index*). It is a compound indicator derived from various sources¹⁰ covering several aspects of procedural quality, such as judicial independence, impartiality of courts, protection of property rights, integrity of the legal system, or effective enforcement of contracts. The components of *EFW Legal Index* are indicators of an impartial, fair and effective framework for voluntary market interactions. Thus, *EFW Legal Index* is best understood as a procedural norm regarding the exercise of public power, not necessarily linked with the distinct content of policies.

We also control for the extent of regulation, i.e. whether markets are regulated and how much competition is restricted. Intensity is gauged by Economic Freedom of the World's area 5 summary index score on "Regulation" (*EFW Regulation Index*). This index focuses on regulatory restraints that limit the freedom of exchange in credit, labor, and product markets, like price or interest rate controls, administrative requirements, restrictions on starting a business, etc.¹¹ We also use the three sub-indices *Credit Market Regulation*, *Labor Market Regulation* and *Business Regulation* to shed light on the issue which regulation matters (most) for trust in companies.

Both indices are coded on a scale from 0 to 10, higher values indicating higher quality institutions (*EFW Legal Index*) and less restrictions for free exchange on credit, labor, and product

¹⁰ These include International Country Risk Guide, Global Competitiveness Report, and World Bank's Doing Business project.

¹¹ The main underlying data sources are the World Bank's Doing Business Reports, and the World Economic Forum's Global Competitiveness Report plus a number of further data sources, e.g. the IMF.

markets (*EFW Regulation Index*).¹² Until 2000 data are available in five-year intervals and since then annually. Thus, for years 1996 to 1999 we use interpolated values.

3.3 Macroeconomic performance

We rely on two different indicators of macroeconomic performance. We use the 5-year-average growth rate of real GDP per capita (*Avg Economic Growth (5Y)*) from the Penn World Tables 9.0. The annual change in the unemployment rate (*Unemployment Rate (Change)*) is from World Development Indicators and IMF data. It can be assumed that companies are at least partly held accountable for the development of average economic growth unemployment.

3.4 Control variables

The EVS/WVS data set contains variables for gender, age, income level, education level, employment status (employed, self-employed, unemployed, retired), religiousness and religious denomination. These are standard control variables used in related literature using micro-level data (e.g., Kim, 2012; Kaya and Walker, 2012; Pirson, Martin & Parmar, 2016). In addition, we include a variable indicating individual political self-assessment, expecting political left-oriented people to have less trust in companies. With respect to politically 'right-leaning' respondents, the relation to confidence in business is less clear, as some political 'right-wingers' have a strong anti-capitalist attitude. Originally measured on a right-to-left 10-point political scale we created two dummy variables for *left* and *right orientation*, representing more extreme positions (7-10 and 1-4).

Age, income and the respondent's employment status (i.e., employed, unemployed, self-employed, retired) capture possible effects of direct experience with companies in the grouping of determinants outlined by Pirson, Martin & Parmar (2016). Religiousness, religious denomination, education and political orientation may be considered as being channels of third-party accounts about companies which may shape trust in business. Gender captures possible differences in moral judgments of males and females. The prior expectation is that "men will trust business more highly as it is mainly construed as an instrumental endeavor" (Pirson, Martin & Parmar, 2016, p. 10). Finally, we also include the (logarithm of) *GDP per capita* to capture the influence of economic development on *trust in companies*.

¹²A value of 10, however, does not mean that no regulation of markets is in force. A value of 10 signifies, for example, that interest rates are determined primarily by market forces, a low impact of minimum wage, no price controls or marketing boards, and that starting a new business is generally easy (Teorell et al 2017).

Tables A1 – A3 include descriptive statistics for variables used in our analysis. The pairwise correlations between individual level variables are low, a well-established result in related literature (see, e.g., *Newton, 2007*). The variables showing the highest correlations with public trust in major companies are *left* and *right orientation* with a Pearson's correlation coefficient of -0.07 and 0.08.¹³

The various EFW indices are highly correlated. However, the correlation of *EFW Legal Index* (process dimension of regulation) with the indices for the extent of regulation is below 0.5 except with *EFW Business Regulation* (0.76). In addition, *EFW Legal Index* shows a higher correlation with *GDP per Capita* (0.74). Wealthier nations also have higher-quality regulation in force.

4 Empirical methodology

We estimate variants of the following empirical model:

$$P(\text{Trust in companies}_{ijt} = 1) = F(\gamma_t + \alpha_j + \beta_1 \text{Social Trust}_{ijt} + \beta_2 \text{EFW Legal Index}_{jt} + \beta_3 \text{EFW Regulation Index}_{jt} + Z'_{jtk} B_k + X'_{ijtl} \pi_l) \quad (1)$$

F signifies the standard normal cumulative distribution; i = individual, j = country and t = survey year; γ_t and α_j are year- and country-fixed effects¹⁴; *EFW Regulation Index* stands for the regulation summary index as well as its components (*EFW Credit Market Index*, *EFW Labor Market Index* or *EFW Business Regulation Index*); Z'_{jtk} includes variables capturing macroeconomic performance (*Avg Economic Growth (5Y)* and *change of unemployment rate*) as well as *GDP per capita*. X'_{ijtl} contains a battery of individual level variables.

In regressions analyzing potential interaction effects between *Social Trust* and *EFW Legal Index* we add *Social Trust* multiplied by *EFW Legal Index* (*Social Trust X EFW Legal Index*) to equation (1).

Given the hypotheses derived in section 2 and given the discussion of measurement of key variables in section 3, we expect the coefficients on *Social Trust*, *EFW Legal Index* and *Avg Economic Growth (5Y)* to be positively signed. *Change of unemployment rate* and the interaction term (*Social Trust X EFW Legal Index*) are expected to enter equation (1) with a negatively signed coefficient.

¹³ Calculating point-biserial instead of Pearson's correlation coefficients leads to similar results.

¹⁴ In the combined World Values Survey/European Values Study (WVS/EVS) data set individuals are randomly sampled in each survey wave; we thus cannot include individual effects in the model.

The model is estimated using the binary probit estimator. We show p-values based on fully cluster-robust standard errors. Clustering is at the country level. In non-linear models the interaction effect is not equal to the coefficient attached to the interaction term. Thus, its statistical significance cannot be tested using a z-test on this coefficient (e.g., Norton, Wang & Ai, 2004). To cope with this issue, we follow Karaca-Mandic, Norton & Dowd (2012) and calculate the difference in marginal effects of *EFW Legal Index* measured at *Social Trust* = 1 and *Social Trust* = 0.¹⁵

We consider about 60 democratic countries with Freedom House/imputed Polity2 democracy score of 8 and higher (Hadenius & Teorell, 2007) in the analysis. This leaves us with a relevant number of clusters for statistical inference and helps to mitigate concerns about parameter stability across democracies and non-democratic regimes.¹⁶

5 Results

5.1 Baseline results

Table 1 displays our baseline results when we measure macroeconomic performance by *Avg Economic Growth (5Y)*. *Social Trust* has a clear positive partial correlation with *trust in companies*. The coefficient is very stable across the various models estimated. This result is in line with findings of Kim (2012) that trust in Multinational Corporation (MNCs) shows a robust positive correlation with social trust.

-- Table 1 --

Impartiality of regulation procedures, as measured by the *EFW Legal Index*, increases trust in companies for a given intensity level of regulation. Likewise, less intensive regulation, for a given quality of regulation, is conducive for building up trust in companies, as indicated by a positive sign of the *EFW Regulation Index*. We also find that it is the extent of regulation of credit markets (equation 2) and of business regulation (equation 4) which matter for trust in companies, but not labor market regulation (equation 3).

¹⁵ We use Stata's margins – contrast command which calculates standard errors based on the Delta method.

¹⁶ From preliminary regressions for non-democratic regimes, we see that among the variables varying across the jt-dimension it is good macroeconomic performance which matters most for public trust in companies. This finding is at odds with the results presented in section 5 which, in turn, signals the relevance of parameter instability. We speculate that the reasons are grounded in the fact that trust is strongly related to democracy, political rights and civil liberty. Authoritarianism has a strong negative influence on trust (see Stolle, 2002).

Table 1 also reveals that, contrary to findings of *Stevenson & Wolfers* (2011), bad macroeconomic performance does not reduce public trust in companies. Results also indicate that confidence in companies is lower in democracies with higher GDP per capita. This is consistent with *Kim's* (2012) results for trust in MNCs. *GDP per capita* can be interpreted as capturing macroeconomic performance from a long run perspective. Thus, this finding, too, is at odds with the notion that good macroeconomic performance enhances trust in companies.

Turning to individual level variables, estimations reveal that older respondents (*Age3160* and *Age60 and above*) trust companies less than younger people do. This is in line with *Pirson, Martin & Parmar* (2016). Consistent with this finding is that retired people trust companies less than employed persons do. From our results we also infer that both self-employed and unemployed respondents project negative experiences in interactions with major companies onto their trust in these institutions. In addition, more educated people trust less. As asserted by *Uslaner* (2010) this may reflect greater attention of highly educated people to news about firm scandals and unethical behavior of companies in general. The level of trust in major companies is lower for females, which fits *Pirson, Martin & Parmar's* (2016) expectation that men trust profit organizations more than females do.¹⁷

Respondents with a political left-wing orientation trust major companies less than right-wing respondents do. This likely signals the general negative attitude of leftwing voters towards capitalist systems, for which big companies are quasi-emblematic.

Respondents with low income trust less while respondents with high income have a higher trust in companies compared to people with an average income. This might represent the more positive direct experience of high income earners with major companies.

Ceteris paribus, religious persons trust big companies more than non-religious people. This result is in line with *Guiso, Sapienza & Zingales* (2003) who find that religious people generally trust more. With respect to religious denomination we find that people with Roman Catholic, Muslim or Jewish faith trust more. We interpret these results to signal that respondents perceive, to a certain extent, the relationship with big companies as being vertical rather than horizontal. This is because people who are more inclined to accept steep hierarchies (see *La Porta et al.*, 1997, on hierarchical religions) also have higher confidence in major companies.

Table 2 reveals that using *change of Unemployment rate* to measure macroeconomic performance does not alter our conclusions. The coefficient is negative as expected but not statistically

¹⁷ These findings for individual level data are also consistent with results of *Kim* (2012) for determinants of trust in MNCs.

significant. As we lose some countries due to missing unemployment data the major effect is on statistical significance of a few variables, including *EFW Business Regulation* (p-value of 0.21).

-- Table 2--

Table 3 includes some robustness and sensitivity checks. The specification in Column 1 excludes *GDP per capita* which might be causally related to several of our right-hand side variables which complicates the interpretation of coefficients. Excluding *GDP per capita* has only negligible impacts on findings.

Chan, Lam & Liu (2012) show that the degree of a respondent's inequality aversion matters for trust in big companies in the U.S. of America.¹⁸ Variables *left orientation* and *right orientation* partly capture this effect. Column 2 of Table 3 shows results for including variable *Inequality Aversion* in equation (1). As expected, a higher inequality aversion reduces *Trust in Companies* while leaving remaining findings unchanged.

Column 3 displays the results when we substitute the probit-estimator by the ordered probit-estimator and the last column shows outcomes when we model country-specific effects as random. Our findings are robust to these two alternations in the empirical specification.

-- Table 3--

From Table 4 we conclude that a higher quality of regulation does not serve as a substitute for lack of social trust. The difference in the marginal effect of *EFW Legal Index* in case *Social Trust* = 1 and for *Social Trust* = 0 is rather small, positively signed and it falls short of statistical significance at conventional levels. If anything, then impartiality of regulation fosters confidence in the business sector of those who already trust in other people. Non-trusting respondents are not more likely to trust in companies if the quality of the legal framework is better. Impartial regulation thus cannot compensate for lack in generalized social trust.

-- Table 4 --

5.2 Relative trust in companies vs. courts

Many empirical contributions show that legal impartiality is positively associated with confidence in political institutions, especially trust in courts (see *Bradford, Jackson & Hough*, 2018, for a recent overview). Our results indicate that this also happens to be the case for confidence in

¹⁸ *Chan, Lam & Liu* (2012) also include a variable "Competition Harmful" in their regressions. Inclusion of this variable likely leads to reverse-causality in our application with trust in companies as explained variable. We do not consider this variable in the analysis.

major companies. A question, then, is if such high-quality institutions exert a disproportional influence on trust in business as compared to trust in political institutions. To investigate this issue we follow *Fungacová, Hasan & Weill (2017)* and analyze determinants of *Relative Trust in Companies* which is defined as the difference between trust in companies and trust in justice, both on a 1- to 4-point Likert-scale. *Relative Trust in Companies* ranges between +3 and -3 and reflects to which extent people report a higher confidence in major companies as compared to courts.¹⁹

Trust in justice is used as benchmark for two reasons. First, in case we find an insignificant or even significant positive effect of *EFW Legal Index* on *Relative Trust in Companies* this will underscore the importance of impartiality for trust in companies. Second, courts are a "neutral order institution" of the political system rather than "partisan institutions" like governments or parliaments (*Rothstein & Stolle, 2008*). Trust in partisan institutions is possibly biased according to political orientation of the respondent. Hence, confidence in courts is a more objective measure of trust in political institutions. Our results displayed in Tables 5 and 6 are derived using the ordered probit estimator.

-- Table 5 and 6 --

Findings in Table 5 suggest that generalized social trust is more important for the creation of trust in courts than in major companies. The effect on relative trust is statistically significant and negative in all model specifications. Impartiality of political institutions, as measured by the *EFW Legal Index*, does not impact differently on confidence in business and confidence in courts. As confidence in courts crucially hinges upon impartiality the insignificant effect seconds the importance of impartiality of regulation for trust in companies.

Intensity of economic regulation matters more for trust in companies than for trust in courts, as indicated by a positive sign of *EFW Regulation Index*. Taking a closer look at the sub-components of the *EFW Regulation Index* in models (3) - (5), we find that this effect is driven somewhat by deregulation of credit markets and – to a much stronger degree – by deregulation of business. Labor market regulation shows no significant relationship with relative trust in companies.

From the coefficient of *Social Trust X EFW Legal* in Table 6 we additionally infer that for trusting people the effect of impartial regulation on relative trust is smaller than for non-trusting people. Thus, for people who do not trust unknown others, impartiality of the legal system has the same

¹⁹ In a robustness check we define *Relative Trust in Companies* as difference between binary trust in companies and binary trust in justice. This variable ranges between +1 and -1. Results are very similar to those reported in Tables 5 and 6. They are available upon request.

effect on confidence in major companies as it has for trust in courts. However, for trusting people impartiality has a slightly weaker effect, as shown by the negative sign of the interaction variable. Given that impartiality is of central importance for trust in courts, this result is consistent with the notion that to some extent impartiality is a substitute for generalized social trust as a determinant of trust in companies. The positive effect of impartiality of the legal system on relative trust in companies (as compared to courts) is higher for people who tend not to trust anonymous others.

6 Summary and conclusions

Although firms are a key institution in market economies, and public trust in the business sector is crucial for well-functioning markets, there is surprisingly little empirical work on its sources. This study explores the relationships between generalized trust in other people, quality of regulation and trust in major companies. In contrast to related literature, we base our empirical investigation on a mixed level data set, employing individual-level data for generalized social trust and confidence in companies and macro-level data on regulation. This enables us to control for a battery of further individual-level factors, including self-assessed ideological orientation, as potential determinants of confidence in the business sector.

The central idea, derived from theoretical literature on trust and economic regulation, is that high-quality regulation can serve as a substitute for a lack of information and trust in business. We consider two dimensions of economic regulation in the analysis: The procedural dimension is measured by impartiality of regulation as captured by Economic Freedom of the World's Legal index. The quantitative dimension ("extent" or "intensity of regulation") is focused on the severity of regulatory constraints for market competition. We argue that it is not the intensity dimension of economic regulation *per se* which matters for trust in companies but that it is the impartiality with which rules are enforced that is decisive. Data on economic regulation are derived from the Economic Freedom of the World's Regulation index.

Our findings are clearly consistent with the notion that generalized social trust is a robust predictor of trust in companies. We are also able to show that both, impartiality and extent of economic regulation, matter for trust in companies. For any given extent of regulatory provisions, impartiality of regulation increases the public's trust in companies. However, our results also show that less strict economic regulation is conducive for trust in companies. While this finding does not support the idea that more economic regulation helps building trust in companies, it is consistent with the view that market competition serves as a disciplining device and instills incentives to trustworthy behavior of market actors which, in turn, impacts positively on trust in

major firms. This indicates that freedom of competition appears to be more important for the formation of trust than more and intensive regulatory provisions, as already shown on a macro-level in the seminal paper of *Berggren & Jordahl (2006)*.

We find only weak evidence in support for the idea that impartiality of regulation is a substitute for generalized social trust as a determinant of trust in companies. Impartiality appears to foster trust in political institutions as well as confidence in the business sector, regardless of individual trust in other people. However, when compared to the role of impartiality for trust in courts, our findings suggest that for trusting people the effect of impartial regulation on relative trust is smaller than for non-trusting people.

From our empirical investigation we can also conclude that good macroeconomic performance, when measured via GDP per capita, does not increase confidence in companies. This finding stands in contrast to related literature dealing with trust in political institutions. Thus, it seems that political institutions, like governments and parliaments, are primarily blamed for bad macroeconomic performance, not market institutions.

Taken together, the results regarding the relationship of generalized social trust, regulatory policies and public trust in companies signal that generalized social trust spills-over to trust in business. Generalized social trust, in turn, is probably crucially shaped in early life stages. From this one may concur with *Pirson, Martin & Parmar (2016)* and conclude that policy makers do not have much leeway for managing public trust in business.

Some important caveats are to be mentioned. Of course, there is the always apparent issue of causality when it comes to the relationship of trust and regulatory provisions. As shown in related literature, a lack of trust in companies and a lack of generalized social trust both cause a demand for regulation. Note, however, that it is rather unlikely that trust in others or confidence in companies of one particular individual impacts on regulatory policies at the national level. Looking at different individuals with different personal characteristics within countries mitigates a potential reverse causality problem (*Landier, Thesmar & Thoenig, 2008*). Yet, in any case, results have to be interpreted cautiously, as endogeneity cannot be excluded completely.

Also, the extent of regulation, as proxied by the EFW Regulation Index (and its component indices) is more or less a 'count measure' and does not perfectly tell apart 'good' from 'bad' regulatory provisions (*Grubel, 2017; Wilkinson, 2016*). From theory, one would expect good regulation to improve trust in business (as it reduces scope for opportunistic behavior of market actors), whereas bad regulatory provisions to impact negatively on confidence (as the margin for selfish behavior through harmful effects on competition as a corrective force are increased). Our

finding that a lower extent of economic regulation increases trust in companies seems to indicate that the 'bad parts' of regulation are dominant, and rent seeking aspects are more important than 'public interest' aspects – at least for credit regulation and business regulation.

However, our results certainly indicate that institutional reformers actually do have room for manoeuvre in helping companies to improve public confidence in the business sector. Governments can help companies in their attempt to re-gain trustworthiness back to levels before the financial crisis of 2008 by credible implementation of impartial economic regulation, that is, regulation which is not perceived by the public as primarily serving narrow vested interests of specific groups.

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Table 1: Trust in companies: Baseline results with average economic growth rate as indicator for macroeconomic performance

	(1)	(2)	(3)	(4)
Social Trust	0.10*** (0.00)	0.10*** (0.00)	0.10*** (0.00)	0.10*** (0.00)
EFW Regulation Index	0.18*** (0.00)			
EFW Legal Index	0.18*** (0.00)	0.17*** (0.01)	0.17** (0.02)	0.11* (0.09)
EFW Credit Regulation		0.10** (0.01)		
EFW Labor Regulation			0.04 (0.33)	
EFW Business Regulation				0.08* (0.08)
Avg Economic Growth (5Y)	-0.47 (0.69)	-0.04 (0.97)	0.33 (0.82)	0.09 (0.95)
GDP per Capita (log)	-0.52* (0.06)	-0.65** (0.04)	-0.08 (0.81)	-0.02 (0.95)
Religious person	0.06*** (0.00)	0.06*** (0.00)	0.06*** (0.00)	0.06*** (0.00)
Roman Catholic	0.08*** (0.00)	0.08*** (0.00)	0.08*** (0.00)	0.08*** (0.00)
Protestant	0.04 (0.17)	0.04 (0.17)	0.05* (0.07)	0.04 (0.11)
Orthodox	-0.02 (0.71)	-0.02 (0.73)	-0.04 (0.52)	-0.04 (0.57)
Muslim	0.24*** (0.00)	0.24*** (0.00)	0.24*** (0.00)	0.24*** (0.00)
Hindu	0.10 (0.13)	0.10 (0.12)	0.10 (0.13)	0.10 (0.12)
Jewish	0.17** (0.01)	0.17** (0.01)	0.19*** (0.01)	0.19*** (0.01)
Other Religion	0.02 (0.46)	0.02 (0.49)	0.02 (0.52)	0.01 (0.61)
Left Orientation	-0.15*** (0.00)	-0.15*** (0.00)	-0.16*** (0.00)	-0.15*** (0.00)
Right Orientation	0.14*** (0.00)	0.14*** (0.00)	0.13*** (0.00)	0.13*** (0.00)
Low Education	0.03 (0.12)	0.03 (0.11)	0.02 (0.14)	0.02 (0.16)
High Education	-0.03* (0.05)	-0.03** (0.04)	-0.03** (0.04)	-0.03* (0.07)
Low Income	-0.06*** (0.00)	-0.06*** (0.00)	-0.06*** (0.00)	-0.06*** (0.00)
High Income	0.10*** (0.00)	0.10*** (0.00)	0.10*** (0.00)	0.10*** (0.00)
Aged from 31 to 60	-0.08*** (0.00)	-0.08*** (0.00)	-0.08*** (0.00)	-0.08*** (0.00)
Aged 60 and above	-0.06** (0.03)	-0.06** (0.04)	-0.05* (0.07)	-0.05* (0.07)
Children 1 or 2	0.02 (0.22)	0.02 (0.23)	0.02 (0.24)	0.02 (0.23)
Children 3 or more	-0.01 (0.81)	-0.01 (0.77)	-0.01 (0.80)	-0.00 (0.84)
Retired	-0.02 (0.41)	-0.02 (0.38)	-0.03 (0.26)	-0.03 (0.24)
Self Employed	-0.04*** (0.01)	-0.04** (0.01)	-0.05*** (0.00)	-0.05*** (0.00)
Unemployed	-0.06*** (0.00)	-0.07*** (0.00)	-0.06*** (0.00)	-0.07*** (0.00)
Female	-0.02** (0.02)	-0.02** (0.02)	-0.02* (0.06)	-0.02* (0.05)
N	133516	133516	128427	129081

Notes: Probit estimates with year and country fixed effects; regression coefficients shown; standard errors are cluster(country)-robust; number of clusters is 59; p-values in (); * p<0.10, ** p<0.05, *** p<0.01

Table 2: Trust in companies: Baseline results with change of unemployment rate as indicator for macroeconomic performance

	(1)	(2)	(3)	(4)
Social Trust	0.10*** (0.00)	0.09*** (0.00)	0.10*** (0.00)	0.10*** (0.00)
EFW Regulation Index	0.16*** (0.01)			
EFW Legal Index	0.14** (0.03)	0.13** (0.05)	0.13* (0.08)	0.08 (0.26)
EFW Credit Regulation		0.09** (0.02)		
EFW Labor Regulation			0.04 (0.34)	
EFW Business Regulation				0.06 (0.21)
Unemployment Rate (change)	-0.03 (0.12)	-0.03 (0.15)	-0.03 (0.16)	-0.03 (0.26)
GDP per Capita (log)	-0.42* (0.06) (0.02)	-0.49* (0.07) (0.02)	0.08 (0.79) (0.07)	0.11 (0.67) (0.06)
N	129597	129597	124508	125162

Notes: See Table 1: Number of clusters is 56 due to missing data for *Unemployment Rate (Change)*; all individual level variables are included but not shown for brevity;

Table 3: Trust in companies: Further robustness and sensitivity checks

	Excluding GDPcap	Inequality aversion	Ordered Probit	Random Effects
Social Trust	0.10*** (0.00)	0.10*** (0.00)	0.09*** (0.00)	0.10*** (0.00)
EFW Regulation Index	0.13** (0.03)	0.19*** (0.00)	0.15*** (0.01)	0.16*** (0.01)
EFW Legal Index	0.11** (0.03)	0.21*** (0.00)	0.10* (0.09)	0.16*** (0.00)
Avg Economic Growth (5Y)	-1.27 (0.21)	-0.30 (0.81)	-0.53 (0.61)	-0.61 (0.51)
GDP per Capita (log)		-0.57** (0.05)	-0.29 (0.24)	-0.38*** (0.01)
Inequality Aversion		-0.03*** (0.00)		
Religious person	0.06*** (0.00)	0.06*** (0.00)	0.08*** (0.00)	0.06*** (0.00)
Roman Catholic	0.08*** (0.00)	0.08*** (0.00)	0.08*** (0.00)	0.08*** (0.00)
Protestant	0.03 (0.19)	0.03 (0.27)	0.04* (0.08)	0.04 (0.17)
Orthodox	-0.02 (0.74)	-0.03 (0.68)	-0.01 (0.82)	-0.03 (0.68)
Muslim	0.24*** (0.00)	0.25*** (0.00)	0.24*** (0.00)	0.24*** (0.00)
Hindu	0.10 (0.13)	0.10 (0.15)	0.09 (0.11)	0.10 (0.13)
Jewish	0.20** (0.01)	0.18** (0.01)	0.13** (0.04)	0.18** (0.01)
Other Religion	0.02 (0.52)	0.02 (0.33)	0.03 (0.18)	0.02 (0.48)
Left Orientation	-0.15*** (0.00)	-0.14*** (0.00)	-0.15*** (0.00)	-0.15*** (0.00)
Right Orientation	0.14*** (0.00)	0.12*** (0.00)	0.12*** (0.00)	0.14*** (0.00)
Low Education	0.03 (0.12)	0.03* (0.09)	0.04*** (0.00)	0.03 (0.11)
High Education	-0.03** (0.05)	-0.03** (0.01)	-0.02 (0.17)	-0.03* (0.05)
Low Income	-0.06*** (0.00)	-0.05*** (0.00)	-0.05*** (0.00)	-0.06*** (0.00)
High Income	0.10*** (0.00)	0.09*** (0.00)	0.08*** (0.00)	0.10*** (0.00)
Aged from 31 to 60	-0.08*** (0.00)	-0.08*** (0.00)	-0.07*** (0.00)	-0.08*** (0.00)
Aged 60 and above	-0.06** (0.04)	-0.06** (0.03)	-0.05** (0.03)	-0.06** (0.03)
Children 1 or 2	0.02 (0.21)	0.03 (0.20)	0.02 (0.29)	0.02 (0.22)
Children 3 or more	-0.00 (0.83)	0.00 (0.95)	-0.00 (0.90)	-0.01 (0.82)
Retired	-0.02 (0.37)	-0.02 (0.49)	-0.04* (0.08)	-0.02 (0.38)
Self Employed	-0.04*** (0.01)	-0.05*** (0.00)	-0.04** (0.02)	-0.04*** (0.01)
Unemployed	-0.06*** (0.00)	-0.06*** (0.00)	-0.06*** (0.00)	-0.06*** (0.00)
Female	-0.02** (0.02)	-0.02** (0.04)	-0.01 (0.12)	-0.02** (0.02)
Constant	-1.32** (0.01)	2.60 (0.20)		1.62 (0.16)
N	133516	128539	133516	133516

Notes: Probit estimates with year and country fixed effects; regression coefficients shown; standard errors are cluster(country)-robust; number of clusters is 59; p-values in (); * p<0.10, ** p<0.05, *** p<0.01

Table 4: Trust in companies: Interaction impartiality of regulation with social trust

	(1)	(2)	(3)	(4)
Social Trust	0.05 (0.51)	0.05 (0.56)	0.05 (0.53)	0.05 (0.52)
Social Trust X EFW Legal	0.01 (0.60)	0.01 (0.56)	0.01 (0.59)	0.01 (0.61)
Difference in marginal effects	0.0032 [0.0042]	0.0034 [0.0042]	0.0029 [0.0043]	0.0032 [0.0043]
EFW Legal Index	0.18*** (0.01)	0.17** (0.01)	0.11* (0.10)	0.17** (0.02)
EFW Regulation Index	0.18*** (0.00)			
EFW Credit Regulation		0.10** (0.01)		
EFW Labor Regulation			0.08* (0.08)	
EFW Business Regulation				0.04 (0.33)
Avg Economic Growth (5Y)	-0.46 (0.69)	-0.03 (0.98)	0.09 (0.95)	0.33 (0.82)
GDP per Capita (log)	-0.52* (0.06) (0.02)	-0.65** (0.04) (0.02)	-0.02 (0.95) (0.05)	-0.08 (0.80) (0.06)
N	133516	133516	129081	128427

Notes: See Table 1; all individual level variables are included but not shown for brevity; difference in marginal effects shows the difference in the marginal effect of *EFW Legal Index* on *Trust in Companies* with *Social Trust* = 1 and *Social Trust* = 0; standard errors in [].

Table 5: Relative trust in companies over courts

	(1)	(2)	(3)	(4)
Social Trust	-0.11*** (0.00)	-0.11*** (0.00)	-0.10*** (0.00)	-0.10*** (0.00)
EFW Regulation Index	0.07 (0.12)			
EFW Legal Index	0.01 (0.89)	0.00 (0.98)	0.02 (0.73)	-0.01 (0.91)
EFW Credit Regulation		0.05* (0.08)		
EFW Labor Regulation			-0.02 (0.49)	
EFW Business Regulation				0.11*** (0.00)
Avg Economic Growth (5Y)	0.33 (0.68)	0.49 (0.50)	0.53 (0.63)	0.48 (0.66)
GDP per Capita (log)	0.08 (0.69)	-0.01 (0.96)	0.29 (0.32)	0.29 (0.21)
Religious person	-0.01 (0.49)	-0.01 (0.51)	-0.01 (0.32)	-0.01 (0.43)
Roman Catholic	-0.01 (0.74)	-0.01 (0.73)	-0.01 (0.81)	-0.01 (0.75)
Protestant	-0.00 (0.89)	-0.00 (0.86)	-0.00 (1.00)	-0.01 (0.77)
Orthodox	-0.00 (0.99)	-0.00 (0.98)	-0.00 (0.98)	-0.00 (0.97)
Muslim	-0.06 (0.14)	-0.06 (0.13)	-0.05 (0.18)	-0.05 (0.20)
Hindu	0.19*** (0.00)	0.19*** (0.00)	0.20*** (0.00)	0.20*** (0.00)
Jewish	0.04 (0.50)	0.04 (0.53)	0.06 (0.38)	0.06 (0.42)
Other Religion	-0.03 (0.26)	-0.03 (0.25)	-0.03 (0.27)	-0.03 (0.26)
Left Orientation	-0.09*** (0.00)	-0.09*** (0.00)	-0.09*** (0.00)	-0.09*** (0.00)
Right Orientation	0.03* (0.07)	0.03* (0.07)	0.04** (0.05)	0.04* (0.06)
Low Education	-0.05*** (0.01)	-0.05*** (0.01)	-0.05*** (0.01)	-0.05*** (0.01)
High Education	-0.07*** (0.00)	-0.07*** (0.00)	-0.07*** (0.00)	-0.07*** (0.00)
Low Income	-0.02 (0.13)	-0.02 (0.15)	-0.02 (0.14)	-0.02 (0.14)
High Income	0.03*** (0.00)	0.03*** (0.00)	0.03** (0.01)	0.03** (0.01)
Aged from 31 to 60	-0.01 (0.68)	-0.01 (0.67)	-0.00 (0.95)	-0.00 (0.93)
Aged 60 and above	-0.03 (0.15)	-0.03 (0.15)	-0.02 (0.36)	-0.02 (0.33)
Children 1 or 2	0.02 (0.16)	0.02 (0.16)	0.01 (0.25)	0.01 (0.23)
Children 3 or more	-0.01 (0.73)	-0.01 (0.70)	-0.00 (0.95)	-0.00 (0.98)
Retired	0.01 (0.56)	0.01 (0.58)	0.01 (0.69)	0.01 (0.68)
Self Employed	0.00 (0.99)	0.00 (0.96)	-0.00 (0.78)	-0.01 (0.70)
Unemployed	-0.00 (0.98)	-0.00 (0.94)	-0.00 (0.90)	-0.00 (0.83)
Female	-0.02** (0.01)	-0.02** (0.02)	-0.02** (0.04)	-0.02** (0.03)
N	120057	120057	115022	115670

Notes: *Relative trust in companies* is defined as trust in major companies minus trust in courts; the variable ranges from +3 to -3. Results are derived using the ordered probit estimator.

Table 6: Relative trust in companies over courts: Interaction impartiality of regulation with social trust

	(1)	(2)	(3)	(4)
Social Trust	0.10 (0.27)	0.10 (0.28)	0.12 (0.20)	0.12 (0.20)
Social Trust X EFW Legal	-0.03** (0.02)	-0.03** (0.02)	-0.03** (0.01)	-0.03** (0.01)
EFW Legal Index	0.02 (0.79)	0.01 (0.88)	0.03 (0.62)	0.00 (0.98)
EFW Regulation Index	0.07 (0.12)			
EFW Credit Regulation		0.05* (0.08)		
EFW Labor Regulation			-0.02 (0.49)	
EFW Business Regulation				0.11*** (0.00)
Avg Economic Growth (5Y)	0.32 (0.70)	0.47 (0.52)	0.52 (0.64)	0.46 (0.67)
GDP per capita (log)	0.08 (0.69)	-0.01 (0.97)	0.29 (0.31)	0.29 (0.20)
N	120057	120057	115022	115670

Notes: See Table 1; all individual level variables are included but not shown for brevity; difference in marginal effects shows the difference in the marginal effect of *EFW Legal Index* on *Relative trust in companies* with *Social Trust* = 1 and *Social Trust* = 0; standard errors in [].

Appendix

Table A1: Descriptive statistics

Variable	Obs	Mean	Std.Dev	Min	Max
Trust in companies	133,516	0.43	0.50	0	1
Relative Trust	120,057	-0.15	0.96	-3	3
Social Trust	133,516	0.32	0.47	0	1
EFW Regulation Index	59	6.99	0.83	4.53	8.94
EFW Credit Regulation Index	59	8.74	1.15	3.47	10.00
EFW Labor Regulation Index	59	5.90	1.41	2.90	9.01
EFW Business Regulation Index	59	6.39	1.02	3.36	8.82
EFW Legal Index	59	6.96	1.44	3.83	9.49
Unemployment Rate (change)	56	-0.08	1.31	-4.40	6.70
GDP per Capita	59	26983.81	15248.15	1282.19	88383.04
Avg Economic Growth (5Y)	59	0.02	0.02	-0.10	0.09
Religious person	133,516	0.63	0.48	0	1
Roman Catholic	133,516	0.33	0.47	0	1
Protestant	133,516	0.16	0.37	0	1
Orthodox	133,516	0.09	0.28	0	1
Muslim	133,516	0.04	0.20	0	1
Hindu	133,516	0.02	0.14	0	1
Jewish	133,516	0.00	0.06	0	1
Other Religion	133,516	0.11	0.31	0	1
Left Orientation	133,516	0.28	0.45	0	1
Right Orientation	133,516	0.29	0.45	0	1
Low Education	133,516	0.18	0.38	0	1
High Education	133,516	0.27	0.44	0	1
Low Income	133,516	0.29	0.45	0	1
High Income	133,516	0.28	0.45	0	1
Age from 31 to 60	133,516	0.54	0.50	0	1
Age 60 and above	133,516	0.21	0.41	0	1
Children 1 or 2	133,516	0.33	0.47	0	1
Children 3 or more	133,516	0.46	0.50	0	1
Retired	133,516	0.18	0.39	0	1
Self Employed	133,516	0.08	0.28	0	1
Unemployed	133,516	0.08	0.27	0	1
Female	133,516	0.51	0.50	0	1

Sources: Economic Freedom of the World Database: IMF and WDI database, Penn World Tables; combined WVS/EWS database

Table A2: Descriptive statistics – per country

Country	Obs	Trust in Companies				Social Trust				EFW Legal				EFW Regulation			
		Mean	StD. Dev	Min	Max	Mean	StD. Dev	Min	Max	Mean	StD. Dev	Min	Max	Mean	StD. Dev	Min	Max
Albania	863	0.38	0.49	0	1	0.13	0.33	0	1	5.41	0.00	5.41	5.41	6.30	0.00	6.30	6.30
Argentina	1,448	0.30	0.46	0	1	0.17	0.38	0	1	5.43	0.01	5.42	5.45	6.37	0.09	6.28	6.45
Australia	3,643	0.47	0.50	0	1	0.49	0.50	0	1	8.49	0.48	7.77	8.96	7.94	0.42	7.63	8.55
Austria	2,237	0.34	0.48	0	1	0.38	0.49	0	1	8.79	0.43	8.38	9.24	7.02	0.32	6.68	7.33
Belgium	1,397	0.46	0.50	0	1	0.35	0.48	0	1	7.05	0.00	7.05	7.05	7.66	0.00	7.66	7.66
Bulgaria	1,722	0.28	0.45	0	1	0.22	0.42	0	1	5.18	0.32	4.98	5.69	6.91	0.97	5.37	7.61
Brazil	2,438	0.60	0.49	0	1	0.08	0.28	0	1	4.67	0.00	4.66	4.67	4.63	0.11	4.53	4.74
Canada	2,701	0.48	0.50	0	1	0.42	0.49	0	1	8.77	0.52	8.22	9.27	8.24	0.19	8.06	8.45
Switzerland	2,449	0.43	0.50	0	1	0.52	0.50	0	1	8.74	0.26	8.50	9.17	7.86	0.31	7.31	8.05
Chile	2,858	0.48	0.50	0	1	0.19	0.39	0	1	6.80	0.24	6.53	7.16	7.25	0.16	7.04	7.48
Cyprus	2,416	0.46	0.50	0	1	0.11	0.32	0	1	7.11	0.28	6.77	7.43	6.61	0.60	5.86	7.14
Czech	3,585	0.30	0.46	0	1	0.28	0.45	0	1	6.66	0.19	6.41	6.82	6.58	0.62	6.04	7.42
Germany	7,867	0.27	0.45	0	1	0.39	0.49	0	1	8.54	0.55	7.76	9.14	6.34	0.44	5.95	7.13
Denmark	1,336	0.54	0.50	0	1	0.77	0.42	0	1	8.79	0.00	8.79	8.79	8.25	0.00	8.25	8.25
Spain	4,966	0.39	0.49	0	1	0.30	0.46	0	1	7.09	0.35	6.68	7.54	6.84	0.32	6.00	7.01
Estonia	2,763	0.54	0.50	0	1	0.34	0.47	0	1	7.12	0.32	6.55	7.33	7.54	0.32	6.97	7.79
Finland	3,228	0.41	0.49	0	1	0.59	0.49	0	1	9.16	0.28	8.75	9.49	7.42	0.30	6.99	7.83
France	3,405	0.45	0.50	0	1	0.24	0.43	0	1	7.61	0.28	7.34	7.97	7.14	0.08	7.06	7.26
United Kingdom	2,418	0.39	0.49	0	1	0.38	0.48	0	1	8.40	0.52	7.98	9.20	8.29	0.14	8.16	8.50
Ghana	2,135	0.72	0.45	0	1	0.06	0.24	0	1	5.61	0.00	5.61	5.61	6.35	0.19	6.23	6.66
Greece	1,919	0.18	0.38	0	1	0.22	0.42	0	1	5.98	0.06	5.90	6.03	6.04	0.50	5.46	6.47
Croatia	1,113	0.21	0.41	0	1	0.21	0.40	0	1	5.82	0.00	5.82	5.82	7.04	0.00	7.04	7.04
Hungary	2,072	0.28	0.45	0	1	0.25	0.43	0	1	6.33	0.04	6.30	6.39	7.44	0.06	7.40	7.52
Indonesia	1,062	0.46	0.50	0	1	0.45	0.50	0	1	4.43	0.00	4.43	4.43	6.37	0.00	6.37	6.37
India	2,769	0.59	0.49	0	1	0.34	0.48	0	1	5.53	0.35	5.24	6.15	6.14	0.34	5.58	6.43
Ireland	623	0.50	0.50	0	1	0.42	0.49	0	1	7.89	0.00	7.89	7.89	7.77	0.00	7.77	7.77
Iceland	1,503	0.35	0.48	0	1	0.47	0.50	0	1	8.68	0.22	8.45	8.88	7.64	0.03	7.61	7.68
Italy	3,011	0.46	0.50	0	1	0.36	0.48	0	1	6.68	0.75	5.82	7.43	6.39	0.59	5.80	7.14
Japan	2,460	0.45	0.50	0	1	0.42	0.49	0	1	7.80	0.28	7.52	8.18	7.66	0.38	7.22	8.22
South Korea	3,419	0.44	0.50	0	1	0.29	0.46	0	1	6.59	0.23	6.35	6.90	6.62	0.43	6.02	7.01
Lithuania	1,690	0.25	0.44	0	1	0.27	0.45	0	1	6.36	0.18	6.11	6.53	6.15	0.90	5.12	7.16
Luxembourg	1,927	0.41	0.49	0	1	0.32	0.46	0	1	8.57	0.12	8.47	8.71	7.15	0.22	6.98	7.42
Latvia	1,657	0.44	0.50	0	1	0.26	0.44	0	1	6.37	0.22	6.10	6.56	6.47	1.41	4.78	7.65
Mexico	1,934	0.49	0.50	0	1	0.19	0.39	0	1	4.67	0.35	4.25	4.96	6.65	0.12	6.51	6.75
Macedonia	858	0.49	0.50	0	1	0.22	0.42	0	1	5.30	0.00	5.30	5.30	8.11	0.00	8.11	8.11
Mali	364	0.57	0.50	0	1	0.17	0.37	0	1	4.78	0.00	4.78	4.78	6.45	0.00	6.45	6.45
Malta	686	0.56	0.50	0	1	0.24	0.43	0	1	7.68	0.00	7.68	7.68	7.14	0.00	7.14	7.14

Country	Obs	Trust in Companies				Social Trust				EFW Legal				EFW Regulation			
		Mean	StD. Dev	Min	Max	Mean	StD. Dev	Min	Max	Mean	StD. Dev	Min	Max	Mean	StD. Dev	Min	Max
Montenegro	724	0.33	0.47	0	1	0.23	0.42	0	1	6.24	0.00	6.24	6.24	7.80	0.00	7.80	7.80
Netherlands	3,322	0.40	0.49	0	1	0.64	0.48	0	1	8.17	0.10	8.10	8.39	7.59	0.05	7.56	7.70
Norway	2,919	0.56	0.50	0	1	0.73	0.44	0	1	8.96	0.12	8.82	9.12	7.08	0.07	7.00	7.17
New Zealand	1,566	0.46	0.50	0	1	0.60	0.49	0	1	8.94	0.15	8.79	9.13	8.47	0.32	8.19	8.94
Peru	3,154	0.30	0.46	0	1	0.09	0.28	0	1	4.63	0.32	4.23	4.93	6.90	0.38	6.51	7.44
Philippines	1,081	0.59	0.49	0	1	0.09	0.28	0	1	3.94	0.00	3.94	3.94	6.11	0.00	6.11	6.11
Poland	2,474	0.34	0.47	0	1	0.25	0.43	0	1	5.93	0.28	5.63	6.36	7.10	0.24	6.93	7.47
Portugal	1,605	0.51	0.50	0	1	0.18	0.38	0	1	7.26	0.40	6.92	7.72	6.35	0.11	6.22	6.44
Romania	3,362	0.41	0.49	0	1	0.14	0.35	0	1	5.72	0.23	5.47	6.02	6.72	1.13	4.61	7.72
El Salvador	819	0.42	0.49	0	1	0.16	0.37	0	1	4.69	0.00	4.69	4.69	7.40	0.00	7.40	7.40
Serbia	945	0.26	0.44	0	1	0.12	0.33	0	1	4.87	0.00	4.87	4.87	6.84	0.00	6.84	6.84
Slovakia	1,666	0.36	0.48	0	1	0.19	0.39	0	1	6.24	0.12	6.14	6.38	6.65	1.05	5.42	7.55
Slovenia	2,145	0.43	0.49	0	1	0.23	0.42	0	1	6.22	0.09	6.09	6.31	6.80	0.30	6.36	7.06
Sweden	3,478	0.53	0.50	0	1	0.68	0.47	0	1	8.43	0.25	8.23	8.89	7.33	0.49	6.50	7.87
Trinidad and Tobago	1,166	0.35	0.48	0	1	0.04	0.20	0	1	4.57	0.13	4.46	4.72	7.47	0.24	7.20	7.68
Turkey	1,290	0.50	0.50	0	1	0.13	0.33	0	1	5.53	0.00	5.53	5.53	6.51	0.00	6.51	6.51
Taiwan	2,250	0.50	0.50	0	1	0.29	0.45	0	1	6.82	0.10	6.73	6.94	6.74	0.24	6.52	7.01
Ukraine	1,147	0.33	0.47	0	1	0.29	0.45	0	1	5.10	0.01	5.09	5.11	6.30	0.16	6.18	6.52
Uruguay	2,238	0.44	0.50	0	1	0.23	0.42	0	1	5.70	0.29	5.42	6.08	6.48	0.23	6.20	6.75
United States	4,124	0.44	0.50	0	1	0.39	0.49	0	1	7.94	1.00	6.96	9.13	8.15	0.22	7.93	8.41
Venezuela	775	0.56	0.50	0	1	0.13	0.34	0	1	3.83	0.00	3.83	3.83	4.92	0.00	4.92	4.92
South Africa	6,324	0.64	0.48	0	1	0.18	0.38	0	1	6.17	0.35	5.81	6.64	7.08	0.15	6.85	7.22

Table A3: Pairwise correlations (individual level variables)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Trust in companies	1.00																							
Social Trust	0.03	1.00																						
Religious person	0.05	-0.08	1.00																					
Roman Catholic	-0.01	-0.08	0.26	1.00																				
Protestant	0.05	0.10	0.07	-0.30	1.00																			
Orthodox	-0.04	-0.09	0.12	-0.21	-0.13	1.00																		
Muslim	0.04	-0.04	0.09	-0.15	-0.09	-0.06	1.00																	
Hindu	0.04	-0.01	0.04	-0.10	-0.06	-0.04	-0.03	1.00																
Jewish	0.01	0.00	-0.02	-0.04	-0.03	-0.02	-0.01	-0.01	1.00															
Other Religion	0.02	0.04	0.02	-0.24	-0.15	-0.11	-0.07	-0.05	-0.02	1.00														
Left Orientation	-0.07	0.06	-0.12	-0.06	-0.03	-0.01	-0.01	0.02	0.01	-0.02	1.00													
Right Orientation	0.08	-0.01	0.09	0.01	0.04	0.00	0.03	0.00	-0.02	0.03	-0.39	1.00												
Low Education	0.01	-0.10	0.08	0.08	-0.03	-0.03	0.03	0.04	-0.02	0.02	0.00	0.02	1.00											
High Educaion	0.00	0.16	-0.07	-0.07	0.02	0.01	-0.02	-0.01	0.04	0.01	0.04	0.01	-0.28	1.00										
Low Income	-0.03	-0.06	0.03	0.01	0.00	0.01	-0.03	0.02	-0.02	0.01	0.02	-0.02	0.19	-0.19	1.00									
High Income	0.05	0.08	-0.02	-0.01	0.02	0.00	0.00	-0.03	0.01	-0.02	-0.02	0.05	-0.15	0.20	-0.39	1.00								
Age from 31 to 60	-0.01	0.02	-0.01	-0.01	-0.01	0.00	0.00	0.01	0.00	0.00	0.00	-0.02	-0.06	0.04	-0.10	0.09	1.00							
Age 60 and above	-0.02	0.02	0.06	0.05	0.03	0.01	-0.07	-0.04	0.00	0.01	-0.01	0.04	0.21	-0.08	0.14	-0.12	-0.56	1.00						
Children 1 or 2	0.02	-0.01	-0.02	-0.03	-0.02	-0.02	-0.02	0.03	0.01	0.06	-0.01	0.00	0.02	-0.01	-0.02	0.02	0.15	-0.02	1.00					
Children 3 or more	-0.05	0.02	0.07	0.05	0.03	0.05	-0.02	-0.04	-0.02	-0.08	-0.01	0.01	0.05	-0.07	0.02	-0.04	0.06	0.17	-0.65	1.00				
Retired	-0.03	0.00	0.06	0.05	0.03	0.04	-0.06	-0.05	0.00	-0.02	0.01	0.01	0.18	-0.09	0.15	-0.12	-0.35	0.71	0.00	0.13	1.00			
Self Employed	0.01	-0.03	0.03	0.00	0.01	-0.02	0.04	0.05	0.00	0.00	-0.02	0.03	0.02	-0.02	-0.01	0.02	0.10	-0.08	0.02	0.00	-0.14	1.00		
Unemployed	0.00	-0.07	0.02	-0.02	-0.02	0.00	0.03	0.01	-0.01	0.02	0.00	0.00	0.02	-0.09	0.12	-0.09	0.01	-0.11	-0.02	-0.03	-0.14	-0.09	1.00	
Female	-0.01	0.00	0.09	0.04	0.01	0.02	-0.02	-0.03	0.00	0.01	-0.01	-0.03	0.02	-0.01	0.04	-0.02	0.01	-0.01	0.03	0.02	-0.02	-0.08	0.00	1.00

Sources: See Table A1

Table A2: Pairwise correlations (macro level variables)

	1	2	3	4	5	6	7	8
EFW Regulation Index	1.00							
EFW Credit Regulation	0.74	1.00						
EFW Labor Regulation	0.72	0.23	1.00					
EFW Business Regulation	0.61	0.31	0.07	1.00				
EFW Legal Index	0.44	0.34	-0.06	0.76	1.00			
Unemployment Rate (change)	-0.05	-0.12	0.04	-0.03	0.00	1.00		
GDP per Capita	0.45	0.37	0.11	0.50	0.74	0.04	1.00	
Avg Economic Growth	0.02	0.06	0.00	-0.15	-0.25	-0.18	-0.25	1.00

Sources: See Table A1