



# Why does the confidence in companies, but not the confidence in the government, affect the demand for regulation differently across countries?

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Received: 16 September 2021 / Accepted: 8 October 2022  
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## Abstract

In an attempt to contribute to the literature on how and why confidence in market participants and in the government shape the demand for market regulation, this paper contrasts two interpretations. The interpretation implicit in the empirical literature supposes that people trade off market failures for government failures. The paper argues that implicit in the broader public choice literature there is an alternative that emphasizes the nirvana fallacy and leads to the conclusion that people's views on markets and government in general is a determinant of the effect of trust on the demand for regulation. The paper applies a meta-regression analysis to examine the results of country-level regressions with different survey waves of the Integrated Values Surveys. It shows that the effect of the two kinds of trust are asymmetric and that the negative effect of the confidence in companies on the demand for government regulation is larger in countries that score higher on individualism.

**Keywords** Institutional trust · Government intervention · Meta-regression · Regulation

**JEL Classification** D78 · H10 · L50

## 1 Introduction

Whether a government regulates markets in a way which prevents them from working in an efficient way or which, on the contrary, helps them do so, is a crucial question. The actual regulation of markets is the outcome of a process with several players and determinants, of which the citizens' demand is only one. Not an irrelevant one, however, because citizens as voters or as members of ideological pressure groups can shape regulation even in an interest group model. This paper is concerned with the question of how confidence in market actors (major companies) versus the government shapes citizens' demand for a regulation that constrains markets.

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The hypothesis, implicit in the literature that is addressed, is that people compare the expected social costs of market failures, reflected by their trust in companies, and government failures, reflected by their trust in the government. I develop, and give some empirical support to, an alternative interpretation that understands trust differently and assumes that people have a biased view of the social costs of government intervention. As a result, the effect of trust in government and that of trust in market participants are not symmetrical, and the latter is determined by the general views people have on the relationship between society and the individual.

Assuming that the Integrated Values Surveys—the combination of the World Values Survey and the European Values Study—show the views of a representative respondent of a country in a certain year, I will apply a meta-analysis (Stanley & Doucouliagos, 2012) of the country-level regressions of the two types of confidence on the demand for regulation.

The meta-analysis reveals two patterns. (1) The effect of confidence in major companies and of the trust in government is not symmetric; it is only trust in companies that matters. (2) An individualist view of society increases the effect of trust in companies, and this effect is stronger than that of a higher-quality regulation. These patterns, I argue, support the alternative interpretation.

## 2 Does trust create a demand for free markets?

A wide literature on trust has shown (Bjørnskov, 2019) that a high level of trust is associated with several good economic outcomes including a higher-quality regulation. This fact may provide a reason to think that trust is a determinant of the demand for government intervention to constrain markets. Following this idea, there is a branch of the trust literature which focuses on the question of whether higher trust leads to a demand for freer market institutions and whether this demand is materialized in a government regulation that indeed erects fewer barriers to market exchanges.<sup>1</sup>

Two interpretations to explain how the confidence<sup>2</sup> in companies and in the government influence the demand for market regulation<sup>3</sup>—the comparative institutions interpretation (Sect. 2.1) and nirvana fallacy interpretation (Sect. 2.2)—will be contrasted. They differ because they answer the following two questions differently. (1) Does trust concern the intentions of the actors or the expected outcomes of their actions? (2) Do people see the trade-off between government failures and market failures, or do they suffer from a nirvana fallacy instead?

### 2.1 The comparative institutions interpretation

The narrower literature on trust and government intervention maintains what I call the comparative institutions hypothesis, which describes the way people think about the

<sup>1</sup> In my review of the literature I am focusing on the narrow question of how trust and the demand for government regulation are interrelated, and leave a full review of the trust literature to others such as Bjørnskov (2019) or Algan and Cahuc (2014).

<sup>2</sup> The terms trust and confidence are used interchangeably in the paper.

<sup>3</sup> Demand for regulation means a demand for more constraints on market exchanges in this paper. Although it is also interest groups that demand regulation, in the rest of the paper it is the demand of the citizens I mean by a “demand” for it.

question of markets and government as Demsetz (1969) or Djankov et al. (2003) say they *should*. They are supposed to think in a comparative way about government regulation as their trust in major companies expresses their concern for market failures, their trust in the government expresses their concern for government failures and they can see the trade-off between the two. Trust, that is, is understood as being concerned with outcomes.

The conceptual framework of this argument is that of Djankov et al. (2003) in which society chooses that level of regulation and markets which minimizes the perceived social cost of private and public expropriation. As the social marginal cost of private expropriation increases *as compared to* that of public expropriation, people will demand more regulation. An increase in the cost of public expropriation *as compared to* that of private expropriation will increase the demand for regulation.

While the cost of private expropriation can be seen as resulting from market failures, public expropriation is the result of government failures. A thick literature strand initiated by Stigler's (1971) and Peltzman's (1976) classic works<sup>4</sup> has shown that it might be rent-seeking incumbents that demand regulations, not citizens. It might not be for the public interest that elected officials regulate but for some rent or "toll" (Djankov et al., 2002), and elected officials might use regulation as a threat to extract such rents (McChesney 2001). The level of trust in the government is then seen as a measure of how large the cost of such government failures is thought to be, and the trust in companies or trust in general as a measure of how large the cost of market failures is thought to be.<sup>5</sup>

The seminal model of how trust affects the demand for regulation is that of Aghion et al. (2010), in which two equilibria are possible: one with high trust and "civicness" and light regulation, and another one with low trust and "civicness" and high regulation. People with low trust in others want the government to defend them against the "uncivicness" of other people, in which case, however, it does not pay to trust and be trustable (i.e. to be civic).

Aghion et al. (2010) themselves provide evidence in the form of regressions with survey results. Applying somewhat different measures of regulation and the demand for it, so do Pinotti (2012) and Cline and Williamson (2020). Pinotti (2012) shows that people with higher generalized trust also hold the opinion that firms should be given more freedom by the government. Cline and Williamson (2020) do not measure the demand for regulation explicitly but show that regulation (measured by data on the costliness of commercial regulation) is reduced by a higher trust level.

Both Pinotti (2012, pp. 650, 655) and Dimitrova-Grajzl et al. (2012), understand the model of Aghion et al. (2010) as suggesting "trust in people and other economic agents" (Dimitrova-Grajzl et al., 2012, p. 296) or "in market participants" (ibid., p. 293) as a good proxy for the concern about market failures. This does not mean, however, that these authors do not consider the idea that people might be concerned with government failures, too. To account for such concerns, Dimitrova-Grajzl et al. (2012) use the perceived level of corruption, while Pitlik and Kouba (2015) the confidence in government.

<sup>4</sup> A summary with recent applications is given by Shughart and Thomas (2019).

<sup>5</sup> To illustrate that trust in government can play an important role in such comparative thinking consider the conversation between Buchanan, who emphasized government failures, and Musgrave, who put more emphasis on market failures (Buchanan & Musgrave, 1999). "The fundamental break" between Musgrave's and Buchanan's "position," in Buchanan's evaluation, is that Musgrave "trusts politicians; we [Buchanan and the Americans in general] distrust politicians" (ibid. p. 88). Buchanan, that is, wants less government intervention *because* he trusts the government less.

Identifying general trust with market failures, however, Pitlik and Kouba (2015) say, is mistaken. Why would “most people” whom a respondent says “can be trusted” include market actors but exclude people in the government? Indeed, social trust constrains government failures (Cline et al., 2022) as well, making trust and regulation substitutes. One should not, Pitlik and Kouba (2015) show, confuse social trust with confidence in companies, which Leibrecht and Pitlik (2020) confirm by showing that trust in major companies is shaped by social trust only to a limited extent.

In the comparative institutions view, as I have tried to show, trust in companies and trust in the government have symmetric effects on the demand for regulation. Both an increase in the former and a decrease in the latter will increase it.

Not all the facts are in line with this interpretation, however. The findings of Pitlik and Kouba (2015) reveal that the effect of relative trust on the demand for intervention is driven by the confidence in major companies, while confidence in the government matters much less, which is a similar result to that of Dimitrova-Grajzl et al. (2012), according to whom the perceived level of corruption does not matter that much. Dimitrova-Grajzl et al. (2012) explain this weaker effect of the concern for government failures by Di Tella and MacCulloch’s (2009) “unpleasant capitalist” hypothesis, which says that since corruption is attributed to “capitalists,” a stronger perception of it makes people want to “punish” them with more regulation.

The idea that generalized trust is not necessarily the same as a measure of concerns over market failures, or that not all government intervention is thought to be a cure for market failures, is confirmed by Daniele and Geys (2015), who find that support for the welfare state is not only associated with generalized trust but is caused by it. This confirms the earlier findings of Bergh and Bjørnskov (2011) that trust correlates with the actual size of the government.

## 2.2 The nirvana fallacy interpretation

As an alternative to the comparative institutions interpretation, what I call the nirvana fallacy view sees trust as concerned with intentions and emphasizes the ignorance about the costs of government failures.

Trust, according to Bjørnskov (2019, p. 631, my italics), is “an assessment of the basic honesty of most other people—that is, their likelihood of behaving honestly despite not being incentivized to do so by public policies or institutions.” It is concerned with intentions, not with results. Trust in market participants is thus an expectation of how the actors intend to behave, while market failures refer to the unintended outcomes of their behavior.<sup>6</sup>

Having low trust in companies is then not the same as expecting large market failures. “Government” or “regulation” and “market” can be seen as two ways to provide incentives for the same players. The idea that in some institutional contexts the consequences will be different from the intentions is one of the core ideas of economics<sup>7</sup>—Adam Smith’s invisible hand, which implies that “the normatively relevant properties of markets emerge indirectly—as a result of features of the institutional setting rather than the motives of agents” (Brennan, 2008, p. 488).

<sup>6</sup> The difference between these two possible understandings of trust is also emphasized by Hwang (2017).

<sup>7</sup> “The most radical idea in the *Wealth of Nations* that breaks the seemingly inevitable link between innate group abilities and outcomes is that of unintended general equilibrium” (Easterly, 2021, p. 8).

It is even possible to demand more markets because of a distrust in market actors. This is, indeed, the way in which the representatives of the “doux commerce” idea argued (Storr & Choi, 2019; Hirschman, 2013). Adam Smith also did not trust market participants, saying that “[t]he interest of the dealers ... is always in some respects different from, and even opposite to, that of the public” (Smith 1904, p. 250). If one recognizes the spontaneous order nature of the market, a higher trust in market participants will not obviously increase the scope of government demanded.

It is, however, difficult to see the difference between the intentions and the unintended consequences of markets for anyone who does not have some knowledge of economics. As a result, people tend to be ignorant of the possibility of unintended beneficial consequences, and instead they tend to nurture what might be called a spontaneous order fallacy. People are found to have an antimarket bias (Caplan, 2007, pp. 30–36), implying that “[t]hey focus on the *motives* of business, and neglect the discipline imposed by competition” (ibid., p. 30, italics in the original), or they think of the market as zero-sum rivalry instead of as a positive-sum cooperation (Rubin, 2019), or that they are wrong in looking at the “mundane morality” of the market as antagonistic to the “traditional morality” of the small group (Clark & Lee, 2017).

The divorce between intentions of market players and the consequences of their actions is a part of a vision that is costly to learn. In Sowell’s (2007) understanding, it is precisely the importance of intentions for social phenomena which distinguishes between two opposing visions: while in the unconstrained vision “the intentions that guide those [people’s] capabilities are especially important,” the constrained vision is characterized by a “lack of correspondence between intention and effect, for the systematic benefits of capitalism were no part of the intention of capitalists” (Sowell, 2007). Being ignorant of this lack of correspondence, people tend to see markets as more costly with less trustable market players and therefore tend to demand more regulation.

Does that mean that trust in the government does not matter? Not necessarily, but considering the nirvana fallacy might make us answer that question with a yes. The nirvana fallacy (Demsetz, 1969; Boettke et al., 2007) says that people are not able to see the trade-off between market failures and government failures. Rather they have a “bifurcated view” of human behavior (Tullock et al., 2002, pp. 5–6) and suppose behavioral asymmetry (Brennan, 2008).

It requires costs to learn to see government failures as a cost of regulation, which is shown by the fact that even professional economists thought for a long time that only market failures are sufficient reasons for more government intervention (Shughart & Thomas, 2019). The inability to see the trade-off between the two types of market failures usually comes in the form of ignoring government failures: “The feeling that the government should ‘do something’ has seldom been based on a comparison of what actually happens when government does and when it does not ‘do something’” (Sowell, 2009, p. 13).

As Stigler’s famous remark (Gwartney, 2013) suggests, with a nirvana fallacy we need only to listen to the first of two singers to declare the second the winner of a singing contest. The nirvana fallacy prevents us from associating our trust in the government with its ability to fix market failures. With the nirvana fallacy the desired level of government intervention remains unrelated to the actual costs of trying to reach that level. A lower or higher trust in the government is concerned with the intentions of the government to intervene to the extent one thinks it should.

The conclusion is that if people understand trust as above, then because of the nirvana fallacy they will not demand more or less regulation from a more or less trustable

government, but because of the spontaneous order fallacy they will want less intervention to regulate a market with more trustable companies.

### 3 Cross-country predictions

Both interpretations explored above imply cross-country predictions for the effect of trust in companies or the effect of trust in the government on the demand for regulation. We have already seen one: according to the comparative institutions view, the trust in companies and the trust in government have symmetric effects on the demand for regulation, while the nirvana fallacy view denies this and concludes that trust in the government has no effect.

#### 3.1 Predictions of the comparative institutions view

According to the comparative institutions interpretation, the quality of government should matter for effect of trust on demand for regulation. Such predictions are explicitly mentioned in the literature reviewed in Sect. 2.2. Dimitrova-Grajzl et al. (2012, pp. 300–301) find that the trust in market participants has a stronger effect on the demand for intervention in the country group in which corruption is lower. A better government, their explanation goes, is needed more when market participants are trusted less. Di Tella and MacCulloch (2009, pp. 302–303) show, quite similarly, that the effect of the perception of corruption on the demand for regulation is higher in the country group with less regulation in place.

Although these results do not come from systematic cross-country regressions, they indicate that the comparative institutions view predicts that with a more limited government, the effect of the trust in market players, understood as the perceived social costs of market failures, will be higher. Limited government will not necessarily mean a smaller government but a government that will be captured by special interest groups with a lower probability, and the correction for market failures will bring fewer government failures as a result.

#### 3.2 Predictions of the nirvana fallacy view

The nirvana fallacy view emphasizes the role of visions (Sowell, 2007) or shared mental models (Denzau & North, 1994), which are costly to learn but which help perceive reality especially in radically uncertain and complex situations. The demand for regulation, understood as the opposite of a demand for markets, is shaped by such mental models. Mental models or “cultures” might not be easily ranked across countries, if at all (Lavoie & Chamlee-Wright, 2000), but some dimensions of these models such as that of individualism–collectivism (Gorodnichenko & Roland, 2012) might be, and often are, compared.

A stronger general preference for markets and yet a stronger effect of trust on it on the margin can be understood in terms of such individualist mental models as compared to a more collectivist one. Buchanan (2020), for example, arguing similarly to more recent cultural psychology (Gorodnichenko & Roland, 2012), identifies the moral order as that individualist ideal in which “participants treat each other as moral reciprocals but do so without any sense of a shared loyalty to a group” (Buchanan, 2020). Moral community, on the other hand, is the communitarian ideal, meaning that “the individual members of the group identify with the collective unit, the community” (ibid.). Then, “it may be possible

to characterize different societies in terms of the importance of moral community ... as a more or less communitarian or less or more individualistic” (ibid., emphasis in original)

Holding different ideals of cooperation, however, will imply different ideals of punishment for those members that are seen to behave unfairly. For the individualist, who thinks in terms of a moral order, there is no justification for being unfair to one member of the group; such behavior requires resentment. For the communitarian, however, being unfair to one member of the group might be justifiable as necessary for the community’s sake; resentment at unfairness is not that straightforward. Buchanan (2020) draws these conclusions for the resentment against the government. But as we know from Leibrecht and Pitlik (2020) that companies are seen as hierarchies, the same argument may be made with major companies in mind, with the resentment being the regulation of firms by the government. People with a more individualist mindset will not just want less regulation but will be more responsive to the perceived intention to disrupt the market order.

In Sect. 2.2 I argued that because of the nirvana fallacy and what I called the spontaneous order fallacy it is the confidence in companies that reflects what people think of as the price of a wider scope of markets. With this in mind, the above argument can be given a simple economic understanding. If the freedom provided by markets has an intrinsic value to the citizen, then she will be willing pay for it by accepting that a lower level of regulation is more costly, with its cost being what she so perceives. It is trust in companies that can be seen as the price of regulation, as lower trust means a higher expected cost of freer markets. The trust level determines the level of regulation demanded, but the demand is shaped by a general preference over markets versus government.

Considering that regulation is a discrete choice (especially in the surveys that are used in the literature reviewed above), and the confidence in companies ( $t \geq 0$ ) is the perceived price of regulation, assume that the regulation level demanded by<sup>8</sup> individual  $i$ ,  $r_i$ , can be either low (0) or high (1) such that

$$r_i(t) = 0 \text{ if } t > t_i \text{ and } r_i(t) = 1 \text{ if } t \leq t_i, \quad (1)$$

where  $t_i$  is the “reservation price” of regulation. The lower it is, the higher is individual  $i$ ’s willingness to pay for a less regulated market. The demand for regulation of the representative individual will then be a distribution function (Jaffe et al., 2019),

$$r(t) = 1 - F(t), \quad (2)$$

where  $F(t)$  is the distribution function of  $t_i$ s:  $F(t) = P(t_i \leq t)$ .

Under some reasonable assumptions, a stronger preference for free markets also means a more “trust-elastic” demand. Assume that  $t_i$ s are uniformly distributed over the interval  $[t_m - \delta, t_m + \delta]$ ,  $t_m \geq \delta > 0$ . A lower  $t_m$  means a stronger preference for free markets because it shows that the willingness to accept regulation is lower on average. This distribution then implies an effect of confidence that is higher (more negative) with a stronger preference for free markets. The “trust elasticity” of the demand for regulation becomes

$$\frac{tr'(t)}{r(t)} = \frac{t(-1/2\delta)}{1 - [t - (t_m - \delta)]/2\delta} = -\frac{t}{t_m + \delta - t}, \quad t \leq t_m + \delta, \quad (3)$$

whose absolute value is higher if  $t_m$  is lower.

<sup>8</sup> More precisely, it is what she thinks is demanded by society.

## 4 A meta-regression analysis

The data used to run the regressions are obtained from the Integrated Values Surveys (IVS), a combination of all waves of the European Values Study (EVS, 2021) and the World Values Survey (Haerpfer et al., 2021). The starting assumption of the empirical investigation is that the regressions which are run with individual survey data on different beliefs describe the way the representative respondent thinks in a given year and a given country.

The cross-individual regressions thus uncover the representative respondent's "model" as regards how trust in companies and governments affects the desired level of intervention. If one has the coefficients of the model of as many countries (and survey waves) as the availability of the data allows, one can apply the methods of meta-regression analysis (Stanley & Doucouliagos, 2012) to see whether the cross-country pattern of these coefficients supports either of the two interpretations above.

### 4.1 Country-level regressions

The cross-individual regressions are ordinary least squares estimations of the equation

$$\text{int}_{i,j} = \beta_{0,j} + \beta_{M,j}\text{TM}_{i,j} + \beta_{G,j}\text{TG}_{i,j} + \mathbf{X}_{i,j}\boldsymbol{\beta}_{1,j} + u_{i,j} \quad (4)$$

for each country-wave ( $j$ ). In Eq. (4) the variable  $\text{int}_{i,j}$  is the demand for interventionism (regulation) by individual  $i$  in country-wave  $j$ , which, following Pitlik and Kouba (2015), is the average of three variables,<sup>9</sup> each of which runs between 1 (most market-friendly) and 10 (least market friendly), and expresses the respondent's opinion on (1) private versus state ownership of business, (2) the responsibility of the individual versus the government, and (3) whether competition is good. These three variables are those in the IVS that reflect the opinion on markets and are available for a number of waves. The dependent variable is the simple average of these three, which is then standardized by country-wave.

The main independent variables are  $\text{TM}_{i,j}$  and  $\text{TG}_{i,j}$ , the confidence in major companies and in the government. Originally, both run between 1 (a great deal of confidence) and 4 (none at all).<sup>10</sup> The scales are reversed and the values are then standardized for country-waves. A higher value of both means more confidence. These variables are chosen for two reasons. One is my intention to contrast the two hypotheses, and as detailed in Sect. 2.1, the literature I am engaged with makes it clear which variable should be used. Second, out of the several institutional trust variables in the IVS these two have the most to do with the views on two different players. Other confidence variables refer to the broader political sphere (such as the parliament) or the civil society (such as churches).

The vector  $\mathbf{X}_{i,j}$  includes the standardized measure of social trust, dummies for ten brackets of self-reported income, three levels of education, a female dummy, a dummy for being younger than 40 years old, dummies for three levels of education, and dummies for being self-employed or unemployed. In picking the independent variables<sup>11</sup> for the country-level regressions, I followed Pitlik and Kouba (2015). The only exception is education, which has been shown to affect thinking about markets by, for example, Caplan (2007, pp.

<sup>9</sup> The variables are coded E036, E037, and E039 in the IVS.

<sup>10</sup> The two questions are coded E069\_11 and E069\_13 in the IVS.

<sup>11</sup> See Tables 5 and 6 in the Appendix for some descriptive statistics of the variables in Eq. (4).



**Table 1** A summary of coefficients estimated with Eq. (4)

Coefficient	Wave	Obs.	Mean	SD	Min.	Max.	<i>p</i> -value <sup>a</sup>
$\beta_{M,j}$	2	3	-0.032	0.079	-0.089	0.060	0.271
$\beta_{G,j}$			0.010	0.012	-0.008	0.015	0.328
$\beta_{M,j}$	3	44	-0.061	0.093	-0.222	0.137	< 0.001
$\beta_{G,j}$			-0.002	0.102	-0.248	0.178	0.440
$\beta_{M,j}$	4	28	-0.036	0.084	-0.196	0.150	0.014
$\beta_{G,j}$			0.012	0.097	-0.180	0.245	0.241
$\beta_{M,j}$	5	76	-0.080	0.080	-0.366	0.165	< 0.001
$\beta_{G,j}$			-0.010	0.106	-0.301	0.249	0.716
$\beta_{M,j}$	6	59	-0.054	0.079	-0.295	0.099	< 0.001
$\beta_{G,j}$			0.016	0.092	-0.279	0.224	0.085
$\beta_{M,j}$	7	79	-0.063	0.074	-0.268	0.093	< 0.001
$\beta_{G,j}$			-0.003	0.093	-0.307	0.307	0.588

<sup>a</sup>*p*-value of the *t*-test of mean = 0 against the alternative of mean < 0 for  $\beta_{M,j}$  and of mean > 0 for  $\beta_{G,j}$  as suggested by the comparative institutions hypothesis. The means are weighted, and *t*-values are calculated from a random-effects model (Borenstein et al., 2010)

50–93). To account for the effects of country-specific and wave-specific factors, country-wave dummies are also included.

Seeing data availability for the dependent and independent variables, Eq. (4) can be estimated for 289 country-waves, which include 113 different countries in six waves. The summary statistics of the  $2 \times 289$  coefficients of interest that result from these 289 regressions are summarized in Table 1. The  $R^2$ s of the regressions have a mean of 0.08, and run between 0.007 and 0.213.

Table 1 summarizes the coefficients derived from the regressions. The means are weighted with the reciprocal of the error variance, while *p*-values are calculated from a “random-effects” model as suggested by the meta-analysis literature (Stanley & Doucouliagos, 2012, pp. 46–48; Borenstein et al., 2010).

The results in Table 1 show that the two coefficients in question do not behave in the same way. The coefficient of the confidence in companies has a consistently negative mean, whereas the coefficient of the confidence in government is much smaller and its sign is not consistently positive.<sup>12</sup> These results give more support to the nirvana fallacy view than to the comparative institutions view.

The economic significance of these effects is not large at first sight but it is better seen when compared to the effect of another variable. On average, the effect of a one-standard-deviation difference of the confidence in companies has an effect as great as the difference between someone with only secondary education and someone with some higher education.

<sup>12</sup> Taking the usual 5% significance as a criterion, the coefficient  $\beta_{M,j}$  is significantly different from zero in 139 cases and significantly negative in 125. The coefficient  $\beta_{G,j}$  is significantly nonzero in 123 cases and positive—which is its expected sign according to the comparative institutions hypothesis—in 57.

**Table 2** Institutions, culture and the effect of confidence in major companies

	(1)	(2)	(3)	(4)	(5)	(6)
Wave	3	4	5	6	7	3–7
<i>Panel A: institutional measure: regulatory quality</i>						
rq	−0.090*** (0.034)	−0.056 (0.039)	−0.025* (0.013)	−0.005 (0.015)	−0.006 (0.011)	−0.019** (0.008)
idv	0.102 (0.121)	0.030 (0.154)	−0.092** (0.043)	−0.187** (0.063)	−0.162*** (0.039)	−0.122*** (0.026)
Obs.	20	7	56	33	52	168
Countries	20	7	56	33	52	63
Adj. $R^2$	0.318	0.095	0.400	0.323	0.475	0.365
<i>Panel B: institutional measure: economic freedom</i>						
efw	−0.027* (0.014)	0.009 (0.021)	−0.014 (0.013)	−0.002 (0.018)	0.001 (0.011)	−0.009 (0.006)
idv	−0.056 (0.078)	−0.246** (0.087)	−0.122*** (0.041)	−0.194*** (0.058)	−0.176*** (0.035)	−0.152*** (0.023)
Obs.	30	16	56	33	52	189
Countries	30	16	56	33	52	64
Adj. $R^2$	0.220	0.475	0.348	0.321	0.471	0.359

Random-effects meta-regression estimations with cross-country data. rq: regulatory quality, idv: individualism/collectivism, efw: economic freedom of the world index. In column 6, survey wave dummies are added as independent variables. The estimation in column 6 also includes two observations from wave 2, with which a within-wave regression cannot be run. \*: significant at 10%; \*\*: 5%; \*\*\*: 1%. Standard errors are in parentheses

## 4.2 A meta-regression analysis of country-level coefficients

The next question is whether the cross-country differences in the  $\beta_{M_j}$ s can be explained by cross-country differences in government quality or individualism in a way suggested by the hypotheses in Sect. 3. To check this, I will regress the betas summarized in Table 1 on measures of institutions and culture. As I regard the country-level regressions as describing the model of a representative respondent, I apply meta-regression analysis by considering the two types of coefficients from each regression run in the form of Eq. (4) as a result of a study.

Meta-regression analysis has its own methods of estimations, of which I choose to apply a random-effects meta-regression (Harbord & Higgins, 2008). A random-effects meta-regression analysis accounts for the heterogeneity of the effects across studies which I can assume exist with “studies” being regressions for different countries in different waves. Stanley and Doucouliagos (2012, pp. 82–84) do not suggest using a random-effects model because the publication selection bias makes the random effects dependent on the standard errors. This argument does not apply for what may be called

my “pseudo meta-regressions”, since the country-level coefficients are not published separately from the meta-regressions.<sup>13</sup>

Table 2 shows these regressions. The independent variables are well-known measures of institutions and individualism. To proxy institutions I use two measures. The first is one of the six measures of the world governance indicators of the World Bank (Kaufmann & Kraay, 2020). As the six measures are highly correlated (Langbein & Knack, 2010), the results would not be very different if another one of the six were used. Talking about regulation, the reason I use the measure called regulatory quality seems straightforward. It measures the perceptions of a wide range of respondents about “ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development” (Kaufmann et al., 2010). I see it as a proxy for how limited government failures are.

One problem with the world governance indicators is, however, that they are too broad, and it is hard to know what they measure. “Good governance” can be partially shaped by the mental model as well, whose measure I also include as independent variable (Licht et al., 2007). As an alternative, I use the summary measure of economic freedom (Gwartney et al., 2020), which is more concerned with specific policies and therefore a more transparent measure, and basically evaluates the extent to which markets are free and government is constrained in a country. In addition to the rule of law, it requires a small government, stable money, free foreign trade, and light regulation of finance, labor and business.<sup>14</sup> Both measures of institutions are calculated as the average of the 5-year time period that ends in the year of the dependent variable.

Individualism versus collectivism (*idv*) is one of the components of Hofstede et al.’s (2012) dimensions of culture, also widely used by economists (Gorodnichenko & Roland, 2012). A higher score means greater emphasis in people’s views on the responsibility of the individual for taking care of himself or herself and his or her immediate family.<sup>15</sup>

Table 2 shows five cross-country regressions for five different waves of the IVS, while column 6 pools the waves and adds wave dummies as independent variables. As I argued in Sect. 3, the two different interpretations make different predictions for the effect of trust in companies on the demand for regulation. The comparative institutions interpretation predicts that higher-quality government makes the effect of the trust in companies stronger (more negative), while the nirvana fallacy view predicts that it is a more individualist mindset that makes it so.

The results in Table 2 rather support the nirvana fallacy view. First, either the measure of institution or the measure of individualism is significant at the 5% level with the expected sign. The two exceptions are column 2 in Panel A and column 1 in Panel B of Table 2. In all the other ten cases, the dependent variables explain 32 to 48% of the variances of the effect of confidence on companies.

Second, although it is not true that for each column of the two panels of Table 2, individualism is significant statistically and regulatory quality or economic freedom is not, it is rather the measure of individualism that the scales tend towards. This is especially so if the two panels of Table 2 are compared. Regulatory quality is significant at

<sup>13</sup> In addition, the regressions that follow have been run with ordinary and weighted least squares, and—when applicable—random-effects panel regressions, which did not change the main conclusions.

<sup>14</sup> See Gwartney et al. (2020, pp.1–8) for a detailed description of the measure of economic freedom.

<sup>15</sup> The original score (0–100) is divided by 100 to avoid very small coefficients.

**Table 3** Instrumental variables estimations

	(1)	(2)	(3)
Indep. var.	rq	efw	idv
<i>Panel A: second-stage results</i>			
rq/efw/idv	-0.053*** (0.009)	-0.064*** (0.011)	-0.185*** (0.023)
Obs.	163	185	185
Countries	60	61	61
Dep. var.	rq	efw	idv
<i>Panel B: first-stage results</i>			
idv.	1.740*** (0.212)	1.514*** (0.231)	
statehiste	1.838* (1.007)	1.316 (1.179)	
statehiste sq.	-4.196** (1.708)	-3.403* (1.894)	
French leg. or.	-0.416*** (0.111)	-0.366*** (0.121)	
law comp.			-0.093*** (0.015)
land			0.236*** (0.013)
imp. of the clan			-0.040** (0.017)
Hansen J <i>p</i> -value	< 0.01	< 0.01	0.690
<i>F</i> -stat	58.49***	26.54***	177.13***
Adj. <i>R</i> <sup>2</sup>	0.457	0.382	0.690

rq: regulatory quality, idv: individualism/collectivism, efw: economic freedom of the world index, statehiste: extended state history index, French leg. or.: French legal origin dummy, law comp.: composite index of law in ancient times, land: index of private property of land in ancient times, imp. of the clan: index for clan strength in ancient times. Survey wave dummies are added as independent variables in each column. \*: significant at 10%; \*\*: 5%; \*\*\*: 1%. Standard errors are in parentheses

the 5% level twice and individualism is found to be so four times in Panel A, whereas in Panel B economic freedom is never significant but individualism is five times so.

For the economic significance of the effect of individualism, consider column 6 of Panel A of Table 2. A one-standard-deviation increase in individualism (0.239), roughly the difference between the US (0.91) and Germany (0.67), is predicted to decrease the effect of the confidence in major companies by 0.029, while a one-standard-deviation increase in control of corruption, roughly the difference between Denmark (1.69) and Slovakia (0.87) in the 7th wave, is predicted to decrease it by 0.016. These two decreases add up to roughly 60% of the standard deviation of  $\beta_{M,j}$ .

Running the same regressions with  $\beta_{G_j}$  as independent variable does not let us see any pattern. The dependent variables do not affect it at the usual statistical significance level, and they have virtually zero explanatory power.<sup>16</sup>

## 5 Instrumental variables and robustness

In this section I will address some of those concerns<sup>17</sup> that one might have after reading the regression results in Sect. 4.2. The most difficult of these concerns is the question of whether it is indeed more individualism or better governance that makes the demand for government regulation more sensitive to trust in companies. First, it might be something in the deeper roots of economic development that causes all three to be correlated. Second, since the institutional measures and the index of individualism are correlated, what seems to be two causes might really just be one. The negative coefficients in Table 2 might show that regulatory quality is driven by individualism or vice versa.

In Table 3 I use instrumental variables to run the regressions such as those in column 6 of Panels A and B of Table 2 but with only one of the two key independent variables. The reason I include only one is to try to reject the hypothesis that it is only individualism that matters. If individualism itself is a relevant and valid instrument of regulatory quality and economic freedom, but individualism as the sole explanatory variable could not have relevant and valid instruments, we could reject the hypothesis that it is only individualism that matters.

To instrument regulatory quality and economic freedom, I use four variables in columns 1 and 2 of Table 3. The first is of course the individualism measure itself. The second and the third are the state history index and its squared values from Borcan et al. (2018). Looking for the deep determinants of good government, they construct an extended state history index,<sup>18</sup> which quantifies the extent to which the territory of a present-day country has had a centralized and autonomous government since 3500 BCE. In addition, they show (ibid., pp. 20–33) that the index is in a “hump-shaped” relationship with modern economic development, which is why its squared value is also included as an instrumental variable in Table 3. The fourth variable is a dummy that accounts for whether or not the legal origin of the country in question is French. The variable is from La Porta et al. (2008), who review the literature on legal origins, which shows that legal origin is a determinant of the quality of regulation.

The first-stage *R*-squares and the *F*-statistics in columns 1 and 2 in Panel B of Table 3 show that these instrument are relevant. The very small *p*-values of the Hansen J test imply, however, that the over-identification hypothesis can be rejected, which means that the instruments are not correctly excluded from the second-stage regression. That is, we cannot say that they affect the dependent variable exclusively through regulatory quality or economic freedom.

<sup>16</sup> These results are available from the author.

<sup>17</sup> I would like to thank the anonymous referees for improving the paper by raising some of them.

<sup>18</sup> Of the several indices Borcan et al. (2018) construct, I use the normalized aggregate state history score calculated for the period 3500 BCE–2000 CE discounted by 1%, since all my observations are from after 1990

**Table 4** GDP and alternative measures of individualism as additional independent variables

	(1)	(2)	(3)	(4)	(5)	(6)
rq	-0.020* (0.011)		-0.040*** (0.012)		-0.021* (0.012)	
efw		-0.009 (0.008)		-0.019** (0.008)		-0.010 (0.010)
RGDP p. c.	0.012 (0.012)	0.000 (0.009)	0.028 (0.025)	0.007 (0.012)	0.010 (0.013)	-0.004 (0.011)
idv	-0.122*** (0.027)	-0.152*** (0.024)				
aut./embed.			-0.016*** (0.005)	-0.020*** (0.005)		
social duty					-0.029*** (0.005)	-0.030*** (0.005)
Obs.	168	189	163	178	120	118
Countries	63	64	58	58	84	83
Adj. $R^2$	0.360	0.355	0.256	0.251	0.507	0.493

Random-effects meta-regression estimations; wave dummies are included. rq: regulatory quality, efw: economic freedom of the world index, RGDP p. c.: natural log of GDP per capita, idv: individualism/collectivism, aut./embed.: autonomy/embeddedness. \*: significant at 10%; \*\*: 5%; \*\*\*: 1%. Standard errors are in parentheses

When it is individualism that is instrumented (column 3 in Table 3), the exclusion restriction cannot be rejected, however. Roland (2020) show that individualism today strongly correlates with several historical variables, which he constructs to quantify the extent to which ancient communities were exposed to markets. The more they were exposed to it, the more individualist they are today. In column 3 I use those three variables that Roland (2020, p. 495) show are jointly significantly regressed on individualism. These variables describe the extent to which (1) present-day countries used to have a formalized legal system protecting property rights and contracts, (2) private property rights of, and markets for, land existed and were secured, and (3) family (clan) relationships used to be important. As shown by the first-stage statistics in column 3 of Table 3, these instruments are relevant and valid.

The results of column 1 and 2 are therefore technical rejections of the hypothesis that individualism matters only as much as it affects regulatory quality. The results in column 3 cannot reject the hypothesis that development, as broadly understood as these historical instrumental variables allow, affects the dependent variable only through individualism.

To check the robustness of the results in Sect. 4.2 Table 4 extends the random-effects meta-regression of column 6 of Table 2. First, it adds the natural log of real GDP per capita (at 2017 prices and measured in US dollars at purchasing power parity [PPP] exchange rates) from the Penn World Table (Feenstra et al., 2015).<sup>19</sup> RGDP

<sup>19</sup> It is expenditure-side real GDP at chained PPPs or RGDP<sup>c</sup> in the Penn World Table's jargon. Since the Penn World Table data do not cover the year 2020 I use 2019 for these cases to avoid losing too many observations.

per capita is included to account for the claim that the effect of culture might just approximate that of economic development. A comparison of column 6 of Table 2 and columns 1 and 2 of Table 4 show that the results are not much different when RGDP per capita is among the independent variables: its own coefficient is insignificant statistically, and the coefficient of the other two variables do not change much. Hofstede's measure is significant in both cases and it has a larger effect when the institutional explanatory variable is economic freedom, which is not significant.

Columns 3 and 4 of Table 4 replace Hofstede's individualism with an alternative measure of it. The variable autonomy/embeddedness comes from the Schwartz Values Survey (Schwartz, 2006, 2008a), which differentiates between "three bipolar dimensions of culture," of which I use autonomy (affective and intellectual) versus embeddedness. Embeddedness means that "people are viewed as entities in the collectivity. Meaning in life is expected to come largely through social relationships ... important values ... are social order, respect for tradition, security, and wisdom" (Schwartz, 2008). The opposite is of course autonomy, which seems to be akin to Hofstede's individualism. The measure used in Table 4 is the first principal component of the three variables, intellectual autonomy, affective autonomy, and embeddedness, with a higher value indicating higher autonomy and less embeddedness.

Schwartz's measure is available for fewer countries than that of Hofstede, which is why the sample size in columns 3 and 4 of Table 4 differ from that in columns 1 and 2. This alternative measure is significant statistically at the 5% significance level, but it allows the two measures of institutions to be so as well.

To try yet another measure of individualism, I composed one from the IVS data. Starting from the Buchananite view of the individualism–communitarianism scale (Buchanan, 2020) mentioned in Sect. 3.2, the principal concept to be quantified is the identification with, or the loyalty to, the group one lives in. The less individualistic (and the more communitarian) the individual is, the more willing he or she is to incur some cost for what is deemed to be the objective of the group. I call this motive social duty and measure it with three questions<sup>20</sup> from the IVS that ask for the respondent's opinion on (1) whether work is a duty to society, (2) whether it is a duty to society to have children, and (3) whether it is a child's duty to take care of ill parents. These are the variables that are available for a number of countries and reflect the extent to which people think they "owe" to the community and its interest even trumps their own. The answers to all three questions can run on a five-point scale. I take the share of those who agree or strongly agree with the statements implicit in the questions for each country and wave. The variable that I call social duty in Table 4 is the first principal component of the three,<sup>21</sup> and is scaled in such a way that a higher value represents more individualism.

As seen in columns 5 and 6 of Table 4, the social duty measure is also significant, both with the regulatory quality and with the economic freedom measure, and

<sup>20</sup> Questions C039, D026\_03, and D026\_05.

<sup>21</sup> It explains 62.1% of the total variance.

its explanatory power is not less, although it is not available for as many observations as the other two measures of individualism. In sum, the inclusion of GDP and of other measures of individualism does not change the conclusion that, even if institutions are accounted for, individualism has an explanatory power over the cross-country difference in the effect of trust in companies on the demand for regulation.

The second robustness check addresses the problem that the results above might just be an artifact that arises because categorical data are treated as if they are continuous in estimating Eq. (4). To address this claim I transformed the main variables into binary ones and reran Eq. (4) as a logistic regression.

The results that are not presented in detail here do not change the main messages: (1) The coefficients are statistically significantly affected by individualism versus collectivism, autonomy versus embeddedness, or social duty. (2) They are usually not affected by the measure of regulatory quality or economic freedom.

## 6 Conclusion

The demand for government regulation, survey data show, depends negatively on the confidence in major companies. Why is that? The usual explanation is that a lower trust in companies means that people expect greater market failures and therefore want the government to regulate more. Such a model should also predict, however, that less trust in the government implies that less regulation is desired. But that does not hold in the data.

The proposition this paper has argued for, and given some empirical support to, is that we might find a better explanation by assuming that people see trust as referring to intentions and that they are ignorant of the costs of government intervention (nirvana fallacy) as well as of the way the market divorces intentions from results.

The main finding of the regressions is that the effect of trust in companies on the demand for regulation is stronger in countries with a population that scores higher on the measures of individualism. This finding does not mean that “culture” determines the level of regulation demanded. According to the results, being ranked higher on the individualism scale does not tell us how much government intervention to want; it is one of the factors that shape the way we think about how much we want. It is one of the determinants of the demand for regulation, properly understood, not that of the quantity demanded directly.

## Appendix 1: Summary statistics

See Tables 5, 6 and 7.



**Table 5** Summary statistics for the country-level regressions

Variable	Mean	SD	Min.	Max.
Int (st.)	-0.003	0.999	-5.007	5.465
Int (binary)	0.473	0.499	0	1
Trust(st.)	0.010	1.001	-1.852	6.757
Trust (binary)	0.273	0.446	0	1
TM (st.)	0.009	0.994	-3.450	3.159
TM (binary)	0.455	0.498	0	1
TG (st.)	0.006	0.996	-5.433	3.835
TG (binary)	0.444	0.497	0	1
Gender	0.509	0.500	0.000	1.000
Young	0.496	0.500	0.000	1.000
Income2	0.094	0.292	0.000	1.000
Income3	0.126	0.332	0.000	1.000
Income4	0.140	0.347	0.000	1.000
Income5	0.178	0.382	0.000	1.000
Income6	0.132	0.338	0.000	1.000
Income7	0.108	0.310	0.000	1.000
Income8	0.070	0.256	0.000	1.000
Income9	0.035	0.183	0.000	1.000
Income10	0.033	0.179	0.000	1.000
Edu2	0.457	0.498	0.000	1.000
Edu3	0.303	0.459	0.000	1.000
Selfempl	0.112	0.316	0.000	1.000
Unempl	0.092	0.290	0.000	1.000
Countries	113			
Country-waves	289			
Observations	346,032			

**Table 6** Observations by waves for the country-level regressions

Wave	2	3	4	5	6	7
Year(s)	1990	1995–1999	1999–2003	2004–2009	2010–2016	2017–2020
Count.	3	44	28	76	59	79
Obs.	3,590	42,436	26,396	93,330	72,651	107,629

**Table 7** Summary statistics for the meta-regressions in Table 2, 3, and 4

Var	Mean	SD	Min	Max	Countries	Obs.	Table
$\beta_{M,j}$	-0.076	0.076	-0.295	0.128	63	168	2, 4
rq	0.765	0.830	-1.343	2.169			
idv	0.441	0.239	0.060	0.910			
RGDP p. c.	10.021	0.789	7.340	11.479			2
$\beta_{M,j}$	-0.078	0.075	-0.295	0.084	64	189	2, 4
efw	7.178	0.940	4.360	8.878			
idv	0.443	0.238	0.060	0.910			
RGDP p. c.	9.916	0.878	7.251	11.479			
$\beta_{M,j}$	-0.079	0.074	-0.295	0.084	60	163	3
rq	0.778	0.823	-1.343	2.169			
idv	0.442	0.241	0.060	0.910			
Statehiste	0.273	0.163	0.033	0.660			
Statehiste sq.	0.100	0.104	0.001	0.436			
French leg. or.	0.417	0.494	0	1			
$\beta_{M,j}$	-0.079	0.074	-0.295	0.084	61	185	3
efw	7.177	0.948	4.360	8.878			
idv	0.444	0.239	0.060	0.910			
Statehiste	0.276	0.167	0.033	0.660			
Statehiste sq.	0.104	0.106	0.001	0.436			
French leg. or.	0.432	0.497	0	1			
$\beta_{M,j}$	-0.077	0.078	-0.295	0.0150	61	185	3
idv	0.446	0.238	0.060	0.910			
law comp.	0.079	0.972	-2.343	1.123			
land	0.023	0.945	-1.671	1.589			
imp. of the clan	-0.067	0.936	-1.139	2.013			
$\beta_{M,j}$	-0.075	0.082	-0.366	0.137	58	163	4
rq	0.684	0.871	-2.031	2.158			
RGDP p. c.	9.968	0.789	6.697	11.157			
aut./embed.	0.084	1.511	-3.360	3.135			
$\beta_{M,j}$	-0.075	0.081	-0.366	0.137	58	178	4
efw	7.129	1.038	3.590	8.878			
RGDP p. c.	9.908	0.873	6.059	11.157			
aut./embed.	0.054	1.519	-3.360	3.135			
$\beta_{M,j}$	-0.066	0.075	-0.268	0.093	84	120	4
rq	0.590	0.937	-1.581	2.169			
RGDP p. c.	10.011	0.807	7.845	11.565			
Social duty	0.000	1.365	-2.418	3.143			
$\beta_{M,j}$	-0.067	0.076	-0.268	0.093	83	118	4
efw	7.268	0.773	5.268	8.878			
RGDP p. c.	10.000	0.800	7.845	11.479			
Social duty	0.014	1.372	-2.418	3.143			

**Acknowledgements** This paper was supported by the Hungarian National Research, Development, and Innovation Office (Project No.: K-120686). I also thank three anonymous referees and the participants of the research workshop at my home institution for their constructive suggestions. All the errors that remained are mine.

**Funding** Open access funding provided by University of Debrecen.

**Availability of data and materials** The data that support the findings of this study are available from the corresponding author, upon request.

**Code availability** Codes are available upon request from the corresponding author.

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