

# Free to Trust? Economic Freedom and Social Capital

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We present new evidence on how generalized trust is formed. Unlike previous studies, we look at the explanatory power of economic institutions, we use newer data, we incorporate more countries, and we use instrumental variables to handle the causality problem. A central result is that legal structure and security of property rights (area 2 of the Economic Freedom Index) increase trust. The idea is that a market economy, building on voluntary transactions and interactions with both friends and strangers within the predictability provided by the rule of law, entails both incentives and mechanisms for trust to emerge between people.

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## 1. Introduction

Social capital, defined here as generalized trust,<sup>1</sup> has several advantageous consequences. Numerous studies suggest that social capital in some form is beneficial for economic growth (Putnam 1993; Fukuyama 1995; Knack and Keefer 1997; La Porta et al. 1997; Dasgupta and Stiglitz 2000; Glaeser et al. 2000; Zak and Knack 2001; Knack and Zak 2002; Beugelsdijk, de Groot, and van Schaik 2004; Bengtsson, Berggren, and Jordahl 2005), but also, to mention some other areas, for trade (Greif 1989; Woolcock 1998, p. 158; den Butter and Mosch 2003), happiness (Uslaner 2002, ch. 8; Bjørnskov 2003), democratic stability (Inglehart 1999; Uslaner 2003, p. 177), political and civic involvement (Knack and Keefer 1997, p. 1255; La Porta et al. 1997), crime prevention (Wilson 1987), and health (Putnam 2000, pp. 226–35; Rose 2000). With that many advantages – perhaps within reach – the issue of how social capital is and can be generated was bound to arise.

The present query adds to the emerging literature that tries to explain how social capital is formed. One strand of that literature, called “society-centered” by Hooghe and Stolle (2003, p. 3), focuses on the role culture and social interactions, such as membership in voluntary associations, play.<sup>2</sup> Another strand, to which we belong and which is still, in its empirical parts, quite novel, attempts to locate the determinants of social capital – interpreted as generalized trust – in contemporary institutional factors and policies.<sup>3</sup> Most of the studies in this literature have not really looked at factors relating to *economic* institutions and policies, with the exception of the institutions of the rule of law and perhaps also income equality. We consider this a major shortcoming. Hence, we look at a wider group of economic institutions and policies that are connected to each other: size of government, legal structure and security of property rights, access to sound money, freedom to exchange with foreigners, and regulation of credit, labor,

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<sup>1</sup> On the definition of social capital, see e.g. Coleman (1990), Putnam (1993), Fukuyama (1995), Levi (1998), Paldam (2000), Zak and Knack (2001, p. 306), Rothstein and Stolle (2002, 2003), and Hooghe and Stolle (2003, p. 2).

<sup>2</sup> Putnam (1993) and Fukuyama (1995) can be said to belong to this strand.

<sup>3</sup> The need for more and the importance of “institution-centered” research in the study of social capital is stressed by e.g. Levi (1998), Sobel (2002, p. 147), Hooghe and Stolle (2003, pp. 7–8, 240), and Uslaner (2003, p. 172 ff.).

and business (the five areas of the Fraser Institute's Economic Freedom Index, EFI). Our general hypothesis is that there is a positive effect of economic freedom on trust.<sup>4</sup>

Arguments to the contrary have been proffered, e.g. that commercialism erodes civic assets such as social capital (for a survey, see Hirschman 1982) and that even if there is an element of trust in commercial activities, it does not extend to other contexts (see e.g. Uslaner 2000, pp. 5, 141–48). One could also cite Coleman (1990, p. 317) who characterizes social capital as a public good being produced suboptimally in markets; but here the effect is still thought to be positive, albeit insufficient. In the end, it is an empirical issue whether economic freedom is beneficial or detrimental for the development of trust and to what degree.

We run cross-country regressions, encompassing 51 or 52 countries (depending on the model specification) to explain trust in 1995 or 2000. The EFI is used as a measurement of the degree to which a country's economy is free, and the variable Generalized trust from the new version of the World Values Survey is used to measure social capital. Our results indicate that especially one area of economic freedom – Legal structure and security of property rights (EFI<sub>2</sub>) – promotes trust. But we also find that Access to sound money (EFI<sub>3</sub>) and Regulation of credit, labor, and business (EFI<sub>5</sub>) sometimes have a positive, statistically significant effect (depending on the model specification).

One of our contributions to the literature consists of paying particular attention to the methodological problem of causality, which is unresolved in previous studies.<sup>5</sup> We try to come to terms with the issue of whether EFI<sub>2</sub> influences trust by using instrumental variables.

## 2. Some Trust-Building Market Mechanisms

One can distinguish between particularized trust and generalized trust.<sup>6</sup> To put it briefly, the former entails trusting people you know or know something about; the latter trusting most

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<sup>4</sup> Cf. Bruni and Sugden (2000), where the views of David Hume and Adam Smith to this effect are presented.

<sup>5</sup> This is a major problem for the existing empirical literature, as pointed out by e.g. Durlauf (1999, 2002), Zack and Knack (2001, p. 314), and by Hooghe and Stolle (2003, p. 244): “[E]vidence for causality remains tenuous.”

<sup>6</sup> Knack and Keefer (1997) use the related terms specific trust and anonymous trust, whereas Uslaner (2002, ch. 2) prefers the somewhat-less-related terms strategic trust and moralistic trust.

(but not all) people you do not know or know anything about. Hence, particularized trust has to do with past experience with concrete persons: you know that some people can be trusted because they have been honest and have fulfilled their promises.<sup>7</sup> Through this knowledge, transaction costs relating to the persons you trust are reduced, which stimulates further exchange.

It is quite easy to see how particularized trust can arise in a free economy.<sup>8</sup> There is both an *incentive* and *mechanisms* for trust to emerge between economic actors. The incentive stems from the fact that producers strive towards high long-term profits and that trustworthiness is generally conducive to the generation of such profits. All else equal, a product or service that consumers perceive to be offered in conjunction with an assurance of implicit or explicit contract adherence meets higher demand than a product or service without such an assurance. Likewise, customers must make it credible that they are able to fulfill their side of the bargain and provide payments in a reliable manner. Generally, this could be described as a willingness both by producers and consumers to secure outcomes that are mutually beneficial and to avoid suboptimal outcomes in which cheating occurs due to a lack of trust (Klein 2002, pp. 172-73; Güth and Ockenfels 2003).

There are different mechanisms for assuring that others find a person or a firm trustworthy. The more actual or potential competition there is between economic actors, the better these mechanisms work. They all basically relate to having, obtaining, or sharing information – naturally when actors are identifiable but also, in many cases, in many-person settings with a high degree of (albeit not complete) anonymity between actors.<sup>9</sup> Some mechanisms relate to direct knowledge about a person or a firm, oftentimes stemming from extended, continuous dealings. Such dealings are facilitated by such things as brand names and franchise operations, which enable consumers to shop for the same product or service in manifold places with just about the same assurance of trustworthiness. Other mechanisms relate

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<sup>7</sup> See Yamagishi and Yamagishi (1994), Offe (1999), Klein (2000, p. 1 ff.) and Hardin (2002).

<sup>8</sup> By a “free economy” we mean an economy characterized by a relatively small government, the rule of law and private property rights, monetary stability, free trade and free capital flows, and a relatively low degree of regulation.

<sup>9</sup> The existence of competition is important because it implies that actors are subject to a disciplinary mechanism as other actors (unlike in, say, a Prisoners’ Dilemma) can select with whom to interact – based on the available information. On this point, see Tullock (1985) and Hörner (2003), who provides a formal analysis.

to indirect knowledge about the economic history and status of a person or a firm, obtainable from e.g. seals-of-approval firms, credit-card companies, consumer groups, authorities, and credit-information companies. There are also middlemen that create a bridge of trust between two traders (Landa 1994), as well as word of mouth (Alexander 1987) and other reputational mechanisms. Reputation as a central mechanism for obtaining socially desirable behavior has been discussed frequently in the classical economics literature, as evinced by e.g. Smith (1978, p. 538): “A dealer is afraid of losing his character, and is scrupulous in observing every engagement. When a person makes perhaps 20 contracts in a day, he cannot gain so much by endeavouring to impose on his neighbours, as the very appearance of a cheat would make him lose.”<sup>10</sup>

Given the manifold existence of particularized trust in a free economy, it is not unreasonable to think that there is also a great deal of generalized trust flourishing in such a setting. Why can this be expected to be the case?

A well-functioning free economy has as distinguishing features the rule of law and the protection of private property rights. These institutions reinforce a climate of trust in making sure that breakers of contracts and rules are brought to justice. As Rothstein (2000) puts it:

In a civilized society, institutions of law and order have one particularly important task: to detect and punish people who are “traitors”, that is, those who break contracts, steal, murder and do other such non-cooperative things and therefore should not be trusted. Thus, if you think (i.e., if your cognitive map is) that these particular institutions do what they are supposed to do in a fair and effective manner, then you also have reason to believe that the chance people have of getting away with such treacherous behavior is small. If so, you will believe that people will have very good reason to refrain from acting in a treacherous manner, and you will therefore believe that “most people can be trusted.”<sup>11</sup>

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<sup>10</sup> Cf. Hume (1978, p. 522). For a further treatment of this topic, see Klein (1997, 2000, 2002), with e.g. more detailed examples of assurance mechanisms; Curzon Prize (1997) discusses similar mechanisms in the context of international trade. Cf. Coleman (1990) and McCloskey (1994, p. 186). For a game-theoretic approach, see Binmore (1992, pp. 347–82).

<sup>11</sup> Cf. Misztal (1996), Cohen (1997), Levi (1998), Offe (1999), Alesina and Ferrara (2002), Rothstein and Stolle (2002), and Rothstein (2003). The latter outlines a related mechanism. It is not only because people know that treacherous behavior will be punished and that it is therefore rare that they trust others; through the existence of what they

Furthermore, Güth and Ockenfels (2003) demonstrate, by means of an evolutionary model, that if anonymous interaction prevents a detection of what type of person one is potentially dealing with, then legal institutions may play a decisive role for the formation of trust. They point out that courts can promote trust and thus serve as a substitute for reputation and other such mechanisms, especially in more anonymous contexts.

This points at an institutional determinant (among others) of generalized trust and yields the following hypothesis: The stronger the rule of law and the protection of property rights (the basis of a market economy), the higher the degree of generalized trust, all else held constant.<sup>12</sup>

A high-quality legal framework, then, seems able to bring about generalized trust directly. But it may also do so indirectly, and in two ways, by stimulating market activities that bring about mechanisms that help establish particularized trust that extends into generalized trust.<sup>13</sup>

On the one hand, as noted by Güth and Ockenfels (2003), these mechanisms can *themselves* be seen as alternatives to a high-quality legal system: they are informal institutions that help people trust others generally because they know that treacherous people are likely to have been recorded in some formal or informal way and that this also has a deterring effect on opportunists. This refers to the ability to find information (through established organizations or through reputational mechanisms) about others even when one has had no previous contact or when no further contact is necessarily envisaged. Klein (2000, p. 110 ff., 2002) describes how “a system of seals of approval” or “a flowing patchwork of reputational nexuses” tends to develop which then renders trust the natural outlook of most people.

On the other hand, particularized trust *itself* may extend into generalized trust. Putnam (1995, p. 169) refers to this as “the transitivity of trust.”<sup>14</sup> How so? When one repeatedly trusts

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perceive to be an impartial and fair judicial system, they also know that others do not bribe, threaten or in other ways corrupt this sphere of government. This insight generates generalized trust as well.

<sup>12</sup> Ho and Weigelt (2002) show experimentally that even without any formal mechanisms or little (if any) informal sanctions, there is evidence of trusting behavior among strangers. About 20 per cent of their population displayed such trust. A real-life setting, like a market economy, does have both formal mechanisms and informal sanctions – and hence, more such trust is to be expected.

<sup>13</sup> Uslaner’s (2000) objections to the contrary; but cf. Dasgupta (1988, pp. 64–5): “In dealing with someone you learn something not only about him, but also about others in his society,” Wilson (1998, p. 42 ff.) and Putnam (2000, pp. 288-9). In the end, this is an empirical question, the answer to which we will return.

people one has some knowledge about, one may develop a trustworthy outlook on other people as a matter of habit and unreflected internalization.<sup>15</sup> Or one may make a rational decision to internalize moral principles to govern one's choices. This latter idea has been developed by Gauthier (1986), to the effect that constrained maximization, i.e. maximization that precludes opportunistic behavior on the condition that others can be identified somewhat reliably as planning to avoid such behavior as well, yields higher individual and social net benefits.<sup>16</sup> Clearly, this is not to say that a habitual trustor or a constrained maximizer is an automaton that indiscriminately trusts everyone in every situation in a gullible fashion. Rather, it means that one acts on the presumption that others are trustworthy unless there are distinct signs to the contrary.

Such an ability to roughly assess the character of others is made possible by what Gauthier (1986, p. 174) refers to as the *translucency* of individuals (not as strict a requirement as transparency). There is evidence to the effect that people do indeed possess such an ability. Frank (1993) shows that involuntary "telltale signs" such as facial expressions and voice tone reveal intentions (albeit imperfectly) and make cooperation possible. Orbell and Dawes (1991), like Gauthier (1986), focus on translucency that enables actors to detect and interpret behavioral cues that reveal the intentions of a prospective partner.<sup>17</sup>

Macy and Sato (2002) present a comparison of trust levels in Japan and the U.S. and point out that some social-capital theories would predict the former level to be higher than the latter.

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<sup>14</sup> As pointed out by Bruni and Sugden (2000), Hume (1978, p. 501) develops the argument that reputational effects can be transmitted from one context (respect for property) to another (promise-keeping).

<sup>15</sup> Cf. Hume (1975, p. 283), Karlson (1993, p. 93 ff.), and Vanberg (1995, p. 97 ff.). A precise mechanism along such lines for particularized trust to turn into generalized trust (or, as the authors call it, universal trust) is outlined in Macy and Skvoretz (1998). They use an evolutionary computational model to show how cooperation can emerge between strangers even without formal or informal social controls. Norms for trusting strangers emerge in local settings, in exchanges between neighbors, and spread through "weak ties" to outsiders.

<sup>16</sup> Straightforward maximizers can be blocked from interacting with the constrained maximizers through this possibility of identification. A somewhat related study, by Glaeser et al. (2000) finds that generalized trust, as revealed in one of their experiments, is influenced by past experiences. A person who had benefited from the generosity of an anonymous stranger or who had not lost something in the mail recently was willing to pay a larger amount of money for having an envelope containing ten dollars dropped at a public place with her address written on it.

<sup>17</sup> For further experimental evidence, see Ockenfels and Selten (2000) and Bolton, Katok, and Ockenfels (2001).

The reason is that Japan is a more close-knit and collectivist culture with denser networks. However, laboratory and survey studies show that the Americans trust each other more than the Japanese. A computational model indicates that higher (but not too high) social mobility in the U.S. may explain this fact, as people thereby learn how to interact effectively with newcomers. Americans tend not to focus on social or physical proximity as much but assess others on the basis of “telltale signs of character.” They proceed to trust if those signs indicate an honest interest in cooperation. Interestingly, high economic freedom implies an absence of impediments against mobility. Lastly, there are also evolutionary arguments about how a capacity to detect simulated reciprocal altruism has developed (Trivers 1971).

The conjectures thus explicated can be summarized as in Figure 1.

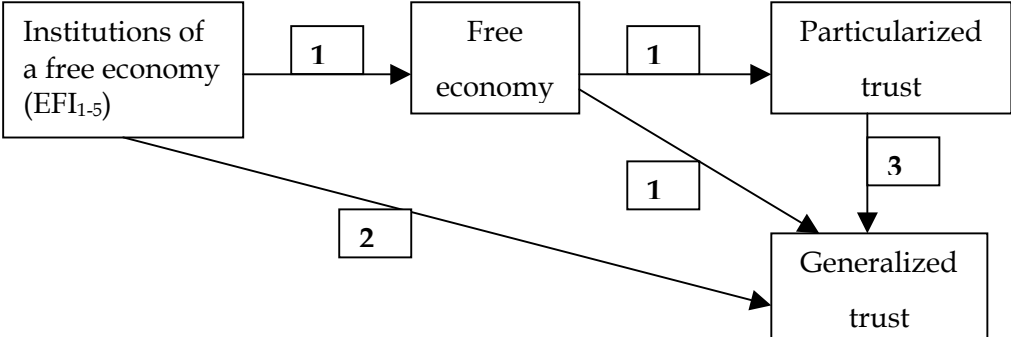


Figure 1. Trust in a Free Economy

First, there is a link from the institutions of a free economy, which make an actually free economy possible, to particularized *and* generalized trust, and the number 1 denotes the incentive and the mechanisms (the generation of information, aided by competition) that generate trust. Second, there is a direct link from the institutions of a free economy, in particular the legal structure and protection of property rights (EFI<sub>2</sub>), to generalized trust, for the reason expressed in the Rothstein quote above, here denoted by the number 2. Third, there is an additional, indirect mechanism for generalized trust to emerge in a free economy, denoted by the number 3, viz. the rational adoption of constrained maximization, in the sense of Gauthier,



or the not-so-conscious adoption of an internalized, habitual trusting outlook on people in general.<sup>18</sup>

What, more precisely, can be expected, on theoretical grounds, of the relationship between the five areas of economic freedom, on the one hand, and social capital *qua* generalized trust, on the other? *Size of government* ( $EFI_1$ ) indicates the extent to which countries rely on individual choice and markets rather than the political process to allocate resources. When government spending increases relative to voluntary spending, government decision-making is substituted for personal choice and economic freedom is reduced, making market transactions, with their trust-enhancing qualities, more difficult. On the other hand, some government expenses (e.g. on the judicial system, police, defense, infrastructure, and education) can be expected to yield more trust. The net effect is unclear. *Legal structure and security of property rights* ( $EFI_2$ ) is essential for the formation of trust in providing a necessary framework for voluntary transactions to take place with confidence, by restricting the use of coercion. Interacting freely with others, and developing trust in them, hinges on being able to rely on a just and impartial system of protective government. *Access to sound money* ( $EFI_3$ ) refers to monetary stability and predictability that enable people to “trust” the value of money, which can be expected to be conducive to engaging in voluntary transactions and the usage of contracts. This usage, in turn, can generate trust through people being more prone to contract with others and, thereby, becoming willing and learning to have confidence in others (illustrated by the number 3 in Figure 1). *Freedom to exchange with foreigners* ( $EFI_4$ ) could reduce trust through the segmentation of society thought by some (Hirschman 1982; Bauman 1998) to follow from globalization. However, a positive effect is envisaged in the Montesquieuean *doux commerce* thesis, to the effect that trade and commerce has a civilizing effect on manners and mores: people who trade with strangers realize that they can be trusted too. Again, the net effect is unclear. Lastly, *Regulation of credit, labor, and business* ( $EFI_5$ ) might promote trust if it raises the costs of opportunistic behavior on the part of economic actors; but it might just as well have the opposite effect, by interfering, sometimes in arbitrary ways, with the performance of voluntary transactions, by restricting competition (central for trust-building market mechanisms), and by providing incentives for

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<sup>18</sup> The whole perspective presented here is akin to that of Ratnapala (2003), who introduces the term “moral capital” and pays particular attention to its evolutionary character and how it is stimulated by commerce given the existence of formal legal institutions that codify rules of procedural justice.

rent-seeking (see e.g. Stigler 1988). An unclear net effect obtains here as well. This is summarized in Table 1.

**Table 1.** Hypotheses on the Relationship between the areas of EFI and Trust

Type of economic freedom	Expected effect	Motivation
EFI <sub>1</sub> Size of government	-/+	hinder trust-building market mechanisms through taxation; provide trust-enhancing goods such as judicial system and education
EFI <sub>2</sub> Legal structure and security of property rights	+	provide assurance that opportunists are punished
EFI <sub>3</sub> Access to sound money	+	stimulate voluntary contracts and the trust that stems from such voluntary activities
EFI <sub>4</sub> Freedom to exchange with foreigners	-/+	make citizens segmented and suspicious; make citizens realize that others are capable of displaying the same good behavior as domestic people
EFI <sub>5</sub> Regulation of credit, labor, and business	-/+	could dampen opportunistic behavior; could hamper competition and breed rent-seeking

### 3. Empirical Strategy and Data

Our empirical strategy consists of testing whether the five areas of economic freedom affects Trust in a statistically significant manner, and of using instrumental variables in order to see if there is some exogenous influence of EFI<sub>2</sub> Legal structure and security of property rights on Trust.

Our views, as developed in the preceding section, are not uncontroversial. For example, it has been argued that trust leads to higher legal quality rather than the other way around. Uslaner (2002, pp. 218–9) boldly claims that “[t]rusting societies develop strong legal systems that gain the confidence of citizens. The opposite dynamic – strong legal systems leading to greater trust – does *not* hold.” (Italics in original.) Along similar lines, La Porta et al. (1997) find that Trust affects “the efficiency of the judiciary” in a positive and statistically significant way (however, only OLS and one control variable, GNP per capita, are used), and Bjørnskov (2004) finds that Trust exerts a positive and statistically significant influence (at the 10 per cent level)

on  $EFI_2$ . The recurring claim in these studies is that an efficient legal system is easier to establish and maintain in countries where people trust each other.<sup>19</sup> We consider this story questionable. Trust may be a valuable asset in the process of political decision-making, but there is also less need for a well-functioning legal system in high-trusting countries. Many legal systems also originate from times when the political process was considerably less democratic than today. Arguably, generalized trust is less important when a small elite makes political decisions. In the end the question is an empirical one, and we think that our instruments do well compared with previous attempts.

We follow articles by Hall and Jones (1999) and Acemoglu, Johnson, and Robinson (2001) that have popularized a group of historical and geographical variables as instruments for economic institutions, such as the security of property rights. Hall and Jones (1999) observe that some historical and geographic features of a country influence productivity exclusively through their impact on the institutional and political environment. Following their study we use the distance from the equator (Latitude), the fraction of the population speaking English (Engfrac) or a major European language (Eurfrac) as instruments for  $EFI_2$ .<sup>20</sup> We also add two variables capturing colonial origin (UK colony and Spanish colony, discounted by the number of years since independence) to our set of instruments.<sup>21</sup> While we cannot be completely certain that such instruments are otherwise unrelated to Trust, they have (to our knowledge) never been

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<sup>19</sup> On the more general argument that trust yields superior government performance (rather than the other way around), see e.g. Putnam (1993), Rice and Sumberg (1997), Knack (2002), and Uslaner (2002, ch. 7). Knack (2002, p. 772) argues that there are three major ways in which social capital can improve government performance: "First, it can broaden governmental accountability, so that government must be responsive to citizens at large rather than to narrow interests. Second, it can facilitate agreement where political preferences are polarized. Third, it is associated with greater innovation in policymaking in the face of new challenges." However, these factors may not be particularly relevant in the context of *judicial* performance, specifically.

<sup>20</sup> Unfortunately we cannot follow Acemoglu, Johnson, and Robinson (2001) and use settler mortality as an instrument. Our sample is already small and it would be reduced to only 26 countries if we did so. While we must admit that Latitude is a more problematic instrument than settler mortality, it is comforting that the two variables are strongly correlated, as Acemoglu, Johnson, and Robinson note.

<sup>21</sup> Note that in several of the former British colonies, such as Ghana, India, Malta, Nigeria, Pakistan, and Uganda, very few people speak English.

suggested as explanations of Trust, and we definitely consider it worthwhile to make use of them in order to delve deeper into the neglected causality issues.<sup>22</sup>

Among the variables in our data set are measures of trust and economic freedom for 51 or 52 countries, depending on the empirical specification. We present the variables by dividing them into six groups:

- Trust: the percentage of respondents in each country agreeing with the statement “most people can be trusted” rather than with the alternative “you can’t be too careful in dealing with people” (earlier versions of the WVS) or “you need to be very careful in dealing with people” (the latest, fourth version of the WVS).<sup>23</sup> The WVS has been conducted in 1981, 1990–91, 1995–96, and 1999–2002 (see Inglehart et al. 2000, 2004). For each country, we use the first non-missing value in the two latest versions of the WVS. We include additional values for Greece from the Eurobarometer survey and for New Zealand from a government survey<sup>24,25</sup>
- Economic freedom: the five areas of the Fraser Institute’s Economic Freedom of the World Index, *viz.* EFI<sub>1</sub> Size of government, EFI<sub>2</sub> Legal structure and security of property rights, EFI<sub>3</sub> Access to sound money, EFI<sub>4</sub> Freedom to exchange with foreigners, and EFI<sub>5</sub> Regulation of credit, labor, and business. All variables of the EFI range from 0 (“no economic freedom”) to 10 (“full economic freedom”). We use values from 1990. The index is presented in Table A1 in the Appendix and, in further detail, at

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<sup>22</sup> Knack and Keefer (1997) do not use instrumental variables when trying to explain trust. Interestingly, in a footnote (p. 1262) they report results from a growth regression in which latitude is used as an instrument for trust. But they do not include their institutional variables “Executive constraints” or “Independence of courts” in that regression.

<sup>23</sup> We do not think this change is of any importance for our study. Furthermore, Glaeser et al. (2000) report that the quoted question from the WVS in fact measures *trustworthiness* rather than *trust*. However, for our purposes this will be of minor concern as long as trust and trustworthiness are correlated positively across countries.

<sup>24</sup> See Zak and Knack (2001, p. 307).

<sup>25</sup> The questions were virtually identical in all these surveys. Whilst we cannot rule out a framing effect – i.e. that the replies to the identical questions differed because of differences between the surveys overall – we think this risk is small. In the WVS itself there is a similar, small risk that the comparability between countries is not perfect, stemming from the fact that the questions are asked in different languages which may entail different interpretations of certain terms (such as “most people”).

<<http://www.freetheworld.com>>. de Haan and Sturm (2000) and Paldam (2003) consider the EFI to be a good indicator of institutional development and quality.

- Instruments for  $EFI_2$  Legal structure and security of property rights: the distance from the equator (Latitude), the fraction of the population speaking English (Engfrac) as their mother tongue, or who speaks a major European language (Eurfrac), as well as dummy variables for colonial origin (UK colony and Spanish colony) discounted by the number of years since independence.
- Control variables: PPP-adjusted gross domestic product per capita in 1990 (GDP90), the share of people who has completed secondary school (Schooling), the Gini coefficient of income inequality 1980–95 (Gini), religious fractionalization (Fractionalization), the share of the population belonging to a hierarchical religion, defined as Catholicism, Islam or Christian Orthodox (Religion), and the share of people younger than 35 (Young).

The six control variables have generally been found to be related to Trust. Income (GDP90) raises Trust according to empirical studies by Knack and Keefer (1997) and Zak and Knack (2001). In Zak and Knack's theoretical model, trust is defined as time not spent verifying the actions of others. For someone who earns lots of money, it is more attractive to work and trust than taking the time to verify. Education (Schooling) fosters Trust according to several studies (Knack and Keefer 1997; Schneider et al. 1997; Rothstein and Stolle 2002, 2003; Knack and Zak 2002). Apart from the effects of learning and socialization, education can also be positively related to Trust since it proxies wages and subjective rates of time preferences (as noted by Zak and Knack 2001). Two measures of social distance (Gini and Fractionalization) are included since familiarity seems to breed trust. The empirical studies to this effect include Knack and Keefer (1997), Glaeser et al. (2000), Zak and Knack (2001), Alesina and La Ferrara (2002), Uslaner (2002, 2003), and Knack and Zak (2003). Following La Porta et al. (1997), we also control for hierarchical religions (Religion) suspecting that Catholics, Muslims, and followers of the Orthodox Church are less willing to trust people in general. Finally, we include the age variable Young. Putnam (1995) and others have reported that young Americans are dramatically less trusting than their elders. However, Rothstein and Stolle (2002, 2003) find that among Swedes the reverse is true.

Some further clarifications, descriptive statistics, and sources of the variables are given in Table A2 in the Appendix. Values for  $EFI_2$  and Trust are listed in Table A3 in the Appendix.

#### 4. Results

We run cross-country regressions for the 1990s to investigate the following: which kind of economic freedom correlates with Trust?; and can economic freedom be explained by history and geography and if so, can we use such circumstances to investigate the impact of economic freedom on Trust?<sup>26</sup>

##### *The Five Areas of the EFI*

One of the advantages with using the EFI is that we can systematically investigate if certain economic institutions are more important for the formation of Trust than others. Judging from Knack and Keefer (1997) and Zak and Knack (2001), as well as from our own theoretical considerations, we would especially expect area 2 Legal structure and security of property rights to be most closely related to Trust, and this is confirmed when we regress Trust on the five areas of the EFI.

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<sup>26</sup> Throughout the investigation we get very similar results if we instead use data on trust that exclude the latest version of the WVS together with EFI data from 1985.

**Table 2.** Explaining Trust with the Five Areas of the EFI

	1	2	3	4	5	6
EFI <sub>1</sub> Size of government	-1.107 (1.308)	0.353 (1.213)				
EFI <sub>2</sub> Legal structure and security of property rights	3.498** (1.545)		3.335** (1.583)			
EFI <sub>3</sub> Access to sound money	1.689* (0.874)			1.854** (0.877)		
EFI <sub>4</sub> Freedom to exchange with foreigners	-0.232 (1.519)				1.730 (1.502)	
EFI <sub>5</sub> Regulation of credit, labor, and business	3.933 (2.462)					4.336** (1.981)
GDP90	-0.734 (0.596)	0.723 (0.461)	0.352 (0.476)	0.194 (0.504)	0.455 (0.513)	0.028 (0.550)
Schooling	0.252 (0.206)	0.129 (0.217)	0.213 (0.212)	0.059 (0.208)	0.121 (0.213)	0.189 (0.208)
Gini	-0.422* (0.249)	-0.578** (0.244)	-0.580*** (0.213)	-0.256 (0.229)	-0.620*** (0.229)	-0.611*** (0.215)
Fractionalization	-15.275* (8.040)	-18.438** (8.820)	-18.851** (8.286)	-19.949** (8.356)	-18.228** (8.657)	-18.233** (8.274)
Religion	-0.167*** (0.061)	-0.230*** (0.064)	-0.212*** (0.062)	-0.227*** (0.062)	-0.221*** (0.063)	-0.211*** (0.062)
Young	0.305 (0.305)	0.209 (0.272)	0.557* (0.300)	0.059 (0.263)	0.252 (0.265)	0.007 (0.274)
R-squared	0.67	0.56	0.59	0.58	0.57	0.59
# countries	51	51	52	52	51	52

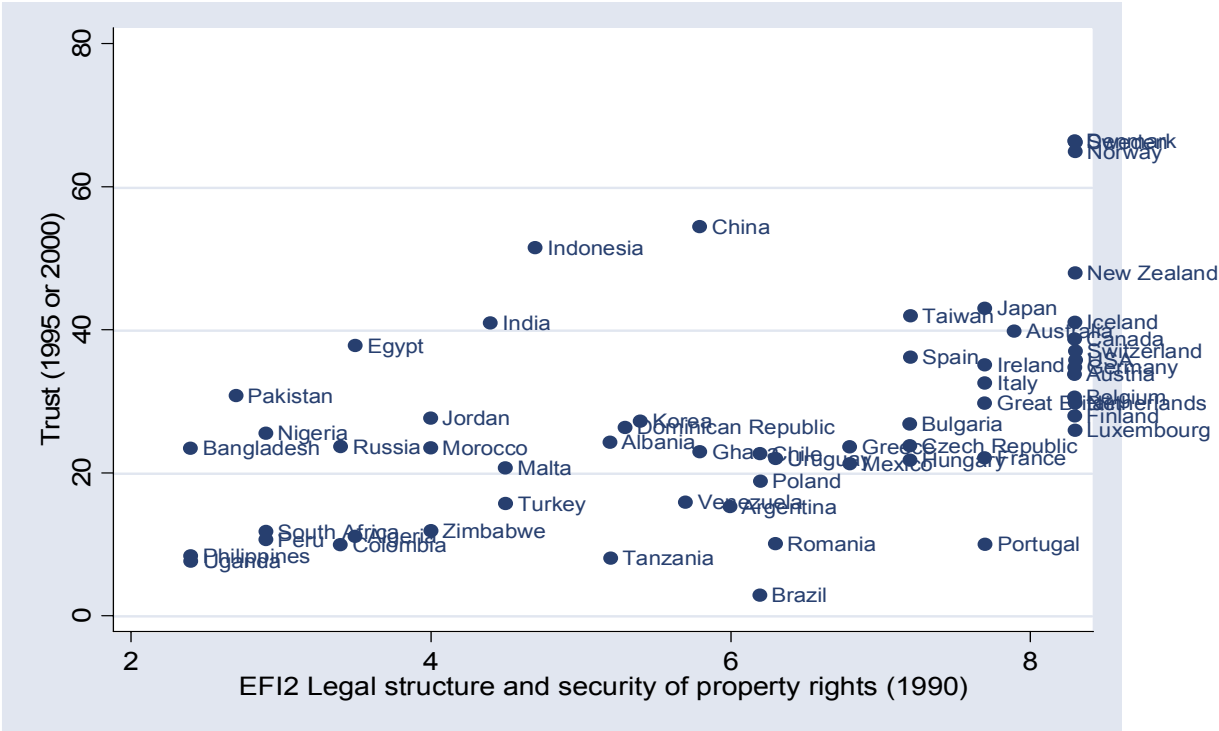
The dependent variable is Trust; for each country the last non-missing of the 1995 and 2000 observations. EFI<sub>1-5</sub> are values from 1990. The regressions include a constant term. Standard errors in parentheses. \* indicates statistical significance at the 10 percent, \*\* at the 5 percent level, and \*\*\* at the 1 percent level.

Column 1 reveals that two areas of the EFI display statistically significant coefficients: EFI<sub>2</sub> Legal structure and property rights (at the five percent level) and EFI<sub>3</sub> Access to sound money (at the ten percent level). The former coefficient is about twice as large as the latter, suggesting that an increase in the quality of the legal structure of one unit entails an increase in Trust of 3.5 percentage points. As the five areas of the EFI are added individually to the control variables, in columns 2–6, both EFI<sub>2</sub> Legal structure and property rights and EFI<sub>3</sub> Access to sound money are

statistically significant (at the 5 percent level). EFIs Regulation of credit, labor, and business, which is statistically significant at the 10 percent level. Economic institutions are related to the prevalence of Trust.

Most control variables enter with the expected signs. Especially Fractionalization, economic inequality (Gini), and Religion appear to decrease trust.

For several reasons, we will in the following concentrate on the second area of the EFI (see Table A4 in the Appendix for a more detailed specification of this variable).  $EFI_2$  has the largest of the statistically significant coefficients in the first column of Table 2. Figure 2 plots Trust and  $EFI_2$ , depicting a positive relationship. Moreover, the empirical importance of  $EFI_2$  confirms the relevance of variables such as independence of courts, which Knack and Keefer (1997) find to be strongly related to Trust. By focusing on  $EFI_2$  we are able to relate to previous studies. The final reason for working with  $EFI_2$  is that Hall and Jones (1999) and Acemoglu, Johnson, and Robinson (2001) have popularized a group of historical and geographical variables as instruments for economic institutions, such as the security of property rights.





## *Instrumenting Legal Structure*

In this section we use instrumental variables to isolate the link from Legal structure and security of property rights to Trust. Our five instruments for  $EFI_2$  are Latitude, Engfrac, Eurfrac, UK Colony, and Spanish Colony. We confirm the relevance of our instruments by letting them explain  $EFI_2$  in a multiple regression. The coefficient of determination is then 0.64, increasing to 0.81 if we include the six control variables that were used to explain Trust in Table 2.<sup>27</sup> Identification, i.e. the exclusion of the instruments in the second stage regression, is harder to establish. Assuming that the instruments are not otherwise – either directly or by correlation with some omitted variables – related to Trust seems somewhat heroic, but neither is it obvious that there must be a hidden link between Trust and such basic country characteristics. To reduce any remaining correlation between  $EFI_2$  and the error term we include the same control variables as in Table 2. In any case the instruments pass Sargan's test of overidentifying restrictions, i.e. we cannot reject that the additional instruments are exogenous, given that one instrument is truly so. Obviously this does not resolve the causality issues, but however preliminary our analysis, treating  $EFI_2$  as endogenous takes the investigation a step forward.

Table 3 compares OLS and 2SLS estimation results when  $EFI_2$  Legal structure and security of property rights is the only included area of the EFI. The estimated impact of  $EFI_2$  on Trust is larger, albeit not statistically significant, when  $EFI_2$  is instrumented with basic country characteristics. Thus OLS does not seem to overestimate the impact of  $EFI_2$  on Trust. In fact, the exogeneity of  $EFI_2$  is not rejected by a Durbin-Wu-Hausman-test, suggesting that the more efficient OLS estimates might be preferable.

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<sup>27</sup> The fit is substantially lower if we regress the other four areas of the EFI on the same instruments.

**Table 3.** Legal Structure and Security of Property Rights and Trust: OLS and 2SLS

	OLS	2SLS
EFI <sub>2</sub> Legal structure and security of property rights	3.335** (1.583)	5.130 (4.537)
GDP90	0.352 (0.476)	0.119 (0.733)
Schooling	0.213 (0.212)	0.271 (0.255)
Gini	-0.580*** (0.213)	-0.618** (0.235)
Fractionalization	-18.851** (8.286)	-18.393** (8.476)
Religion	-0.212*** (0.062)	-0.201*** (0.068)
Young	0.557* (0.300)	0.734 (0.518)
R-squared	0.59	0.57
# countries	52	52

The dependent variable is Trust; for each country the last non-missing of the 1995 and 2000 observations. The values of EFI<sub>2</sub> are from 1990. In the second column (2SLS), EFI<sub>2</sub> is instrumented by Latitude, Engfrac, Eurfrac, UK colony, Spanish colony, and the six control variables given in the table. The first stage estimates are reported in Table A5 in the Appendix. Standard errors in parentheses. The regressions include a constant term.. \* indicates statistical significance at the 10 percent, \*\* at the 5 percent, and \*\*\* at the 1 percent level.

## 5 Concluding Remarks

It has been argued that social capital, interpreted as generalized trust, has many beneficial effects, e.g. on economic growth, trade, political involvement, health, happiness and other important goals. By regarding trust as at least partly a function of institutions and policies, we make use of the Economic Freedom Index to see whether the core elements of market economies help form trust. It turns out that in particular one such element does, *viz.* Legal structure and security of property rights (EFI<sub>2</sub>) – an important insight, not least for developing nations lacking in this particular institutional area. That EFI<sub>2</sub> stimulates Trust is easy to understand. By providing a legal system and by exercising it in an impartial, just, and general manner,

economic actors know that voluntary contracts are enforceable and can be relied upon. This enables them to trust other actors more directly; but there is also an indirect effect in that the economic process of exchange, with its incentives and mechanisms for dispositions of trust to emerge, is stimulated.

Access to sound money (EFI<sub>3</sub>) also turns out to be positively related to Trust, albeit to a smaller degree, as is Regulation of credit, labor, and business (EFI<sub>5</sub>), at least in one empirical specification.

In conducting our study, we have made use of new data on Trust from the World Values Survey that enable us to include more countries than previous studies, hence improving the quality of the results.

The empirical literature on social capital suffers from certain methodological problems, one being the unclear causality between (in our case) EFI<sub>2</sub> and Trust. We try to pay particular attention to this issue by using instrumental variables. Our findings suggest that there is a role for institutional design in building trust.

**Appendix**

**Table A1.**The Areas, Components, and Subcomponents of the Economic Freedom Index

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1 Size of Government: Expenditures, Taxes, and Enterprises
A General government consumption spending as a percentage of total consumption
B Transfers and subsidies as a percentage of GDP
C Government enterprises and investment as a percentage of GDP
D Top marginal tax rate (and income threshold to which it applies)
2 Legal Structure and Security of Property Rights
A Judicial independence: The judiciary is independent and not subject to interference by the government or parties in disputes
B Impartial courts: A trusted legal framework exists for private businesses to challenge the legality of government actions or regulation
C Protection of intellectual property
D Military interference in rule of law and the political process
E Integrity of the legal system

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### 3 Access to Sound Money

- A Average annual growth of the money supply in the last five years minus average annual growth of real GDP in the last ten years
- B Standard inflation variability in the last five years
- C Recent inflation rate
- D Freedom to own foreign currency bank accounts domestically and abroad

### 4 Freedom to Exchange with Foreigners

#### A Taxes on international trade

- i Revenue from taxes on international trade as a percentage of exports plus imports
- ii Mean tariff rate
- iii Standard deviation of tariff rates

#### B Regulatory trade barriers.

- i Hidden import barriers: No barriers other than published tariffs and quotas
- ii Costs of importing: The combined effect of import tariffs, licence fees, bank fees, and the time required for administrative red-tape raises costs of importing equipment by (10 = 10% or less; 0 = more than 50%)

#### C Actual size of trade sector compared to expected size.

#### D Difference between official exchange rate and black market rate

#### E International capital market controls

- i Access of citizens to foreign capital markets and foreign access to domestic capital markets
  - ii Restrictions on the freedom of citizens to engage in capital market exchange with foreigners - index of capital controls among 13 IMF categories.
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## 5 Regulation of Credit, Labor, and Business

### A Credit Market Regulations

- i Ownership of banks: Percentage of deposits held in privately owned banks
- ii Competition: Domestic banks face competition from foreign banks
- iii Extension of credit: Percentage of credit extended to private sector
- iv Avoidance of interest rate controls and regulations that lead to negative real interest rates
- v Interest rate controls: Interest rate controls on bank deposits and/or loans are freely determined by the market

### B Labor Market Regulations

- i Impact of minimum wage: The minimum wage, set by law, has little impact on wages because it is too low or not obeyed
- ii Hiring and firing practices: Hiring and firing practices of companies are determined by private contract
- iii Share of labor force whose wages are set by centralized collective bargaining
- iv Unemployment Benefits: The unemployment benefits system preserves the incentive to work
- v Use of conscripts to obtain military personnel

### C Business Regulations

- i Price controls: Extent to which businesses are free to set their own prices
- ii Administrative conditions and new businesses: Administrative procedures are an important obstacle to starting a new business
- iii Time with government bureaucracy: Senior management spends a substantial amount of time dealing with government bureaucracy
- iv Starting a new business: Starting a new business is generally easy
- v Irregular payments: Irregular, additional payments connected with import and export permits, business licenses, exchange controls, tax assessments, police protection, or loan applications are very rare

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Source: Gwartney and Lawson (2003, pp. 8–9)

**Table A2.** Variable Specifications and Descriptive Statistics

Variable	Definition	# obs	Mean	Std dev	Min	Max	Sources
Trust	Percent trusting most people, the last non-missing of the 1995 and 2000 observations	52	28.58	15.09	3	66.5	WVS, ZK
EFI <sub>1</sub>	Size of government, in 1990	51	4.97	1.59	1.2	8.3	GL
EFI <sub>2</sub>	Legal structure and security of property rights, in	52	6.15	1.99	2.4	8.3	GL

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	1990 (in 1995 for Russia)							
EFI <sub>3</sub>	Access to sound money, in 1990	51	6.44	2.70	0	9.7	GL	
EFI <sub>4</sub>	Freedom to exchange with foreigners, in 1990 (in 1995 for Russia)	51	6.27	1.65	2.3	8.9	GL	
EFI <sub>5</sub>	Regulation of credit, labor, and business, in 1990	52	516	1.05	2.5	6.8	GL	
GDP90	PPP-adjusted GDP per capita in 1990 (in 1991 for Bulgaria and Russia)	52	9.65	6.71	.60	23.00	PWT	
Schooling	Percent who have completed secondary school in the total population	52	16.28	10.66	1.3	44.4	BL	
Gini	Gini index of income distribution: average over the observations closest to 1980, 1990, and 1995 (the earlier observation in case of a tie). We only use observations that are included (i.e. coded "accept", "nn", or "est"). When there are different measures to choose between, we choose household over person and net income over gross income.	52	36.39	8.94	22.45	58.69	DS	
Fractionalization	Index of religious fractionalization	52	0.41	0.25	0	0.86	A	
Religion	Percent Catholic + percent Muslim + percent Christian Orthodox, in 2000	52	59.24	37.00	0.57	104.37	WCD	
Young	Percentage of a country's population younger than 35 years	52	59.11	12.32	44.4	82.6	USBC	
Latitude	Absolute value of the distance from the equator (degrees)	52	35.49	16.83	1	64	PT, CIA	
Engfrac	Fraction of a country's population that speaks English as a native language	52	0.10	0.28	0	0.97	PT, E	
Eurfrac	Fraction of a country's population that speaks English, French, German, Portuguese, or Spanish	52	0.38	0.45	0	1	PT, E	
UK colony	Dummy variable (equal to one if the country is a former UK colony) * [250 - (1996 - year of independence)]/250	52	0.17	0.32	0	0.92	PT	
Spanish colony	Dummy variable (equal to one if the country is a former colony of Spain or Portugal) * [250 - (1996 - year of independence)]/250	52	0.06	0.14	0	0.79	PT	

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WVS = World Values Survey (Inglehart et al. 2000, 2004); ZK = Zak and Knack (2001); GL = Gwartney and Lawson (2003) <<http://www.freetheworld.com>>; PWT = Heston et al. (2002); BL = Barro and Lee (2000); DS =

Deining and Squire (1996) <<http://www.worldbank.org/research/growth/dddeisqu.htm>>; A = Alesina et al. (2003); WCD = World Christian Database <http://www.worldchristiandatabase.org/wcd/>, population from Heston et al. (2002); USBC = U.S. Bureau of the Census, International Data Base <<http://www.census.gov/ipc/www/idbpyr.html>>; PT = Persson and Tabellini (2003); CIA = The World Factbook <<http://www.cia.gov/cia/publications/factbook/>>; E = Ethnologue: Languages of the World <<http://www.ethnologue.com/web.asp>>.

The components of the five areas of the EFI are specified in Table A1 in this Appendix.

The components of the EFI, as well as weighting schemes, have changed in the various editions that have been published. Hence, when comparing studies, one needs to be careful to clarify which editions are used.

**Table A3.** Data for EFI<sub>2</sub> and Trust

Country	EFI <sub>2</sub>	Trust
Denmark	8.3	66.5
Sweden	8.3	66.3
Norway	8.3	65
China	5.8	54.5
Indonesia	4.7	51.6
New Zealand	8.3	48
Japan	7.7	43.1
Taiwan	7.2	42
India	4.4	41
Australia	7.9	39.9
Canada	8.3	38.8
Egypt	3.5	37.9
Switzerland	8.3	37
Spain	7.2	36.2
USA	8.3	35.8
Ireland	7.7	35.2
Germany	8.3	34.8
Austria	8.3	33.9
Italy	7.7	32.6
Pakistan	2.7	30.8
Belgium	8.3	30.7
Netherlands	8.3	29.8
UK	7.7	29.8
Finland	8.3	28

Jordan	4	27.7
Korea	5.4	27.3
Bulgaria	7.2	26.9
Dominican Republic	5.3	26.4
Czech Republic	7.2	23.9
Greece	6.8	23.7
Russia	3.4	23.7
Bangladesh	2.4	23.5
Ghana	5.8	23
Chile	6.2	22.8
France	7.7	22.2
Uruguay	6.3	22
Hungary	7.2	21.8
Mexico	6.8	21.3
Poland	6.2	18.9
Venezuela	5.7	15.9
Turkey	4.5	15.7
Argentina	6	15.4
Zimbabwe	4	11.9
South Africa	2.9	11.8
Algeria	3.5	11.2
Peru	2.9	10.7
Romania	6.3	10.1
Colombia	3.4	10
Portugal	7.7	10
Philippines	2.4	8.4
Uganda	2.4	7.6
Brazil	6.2	3

**Table A4.** Components of and Sources for EFI<sub>2</sub> Legal Structure and Security of Property Rights

Components	Sources
A Judicial independence.the judiciary is independent and not subject to interference by the government or parties in disputes.	World Economic Forum (2000, 2003)
B Impartial courts: a trusted legal framework exists for private businesses to challenge the legality of government actions or regulation.	World Economic Forum (2000, 2003); Kaufmann, Kraay, and Zoido-Lobaton (2002)



C Protection of intellectual property	World Economic Forum (2001, 2003)
D Military interference in rule of law and the political process	PRS Group (various issues); Kaufmann, Kraay, and Zoido-Lobaton (2002)
E Integrity of the legal system.	PRS Group (various issues)

Source: Gwartney and Lawson (2003, pp. 25-26)

**Table A5.** First-Stage Regression in Table 3 (EFI<sub>2</sub> 1990)

	Coefficient (std. error)
GDP90	0.092* (0.046)
Schooling	-0.017 (0.021)
Gini	0.002 (0.026)
Fractionalization	-0.671 (0.843)
Religion	-0.010 (0.006)
Young	-0.099*** (0.032)
Latitude	-0.005 (0.017)
Engfrac	-0.338 (0.711)
Eurfrac	1.076** (0.503)
UK colony	0.235 (0.648)
Spanish colony	-1.181 (1.301)
R-squared	0.81
# countries	52

\* indicates statistical significance at the 10 percent, \*\* at the 5 percent, and \*\*\* at the 1 percent level.

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