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Values and norms matter: on the basic determinants of long-run economic development

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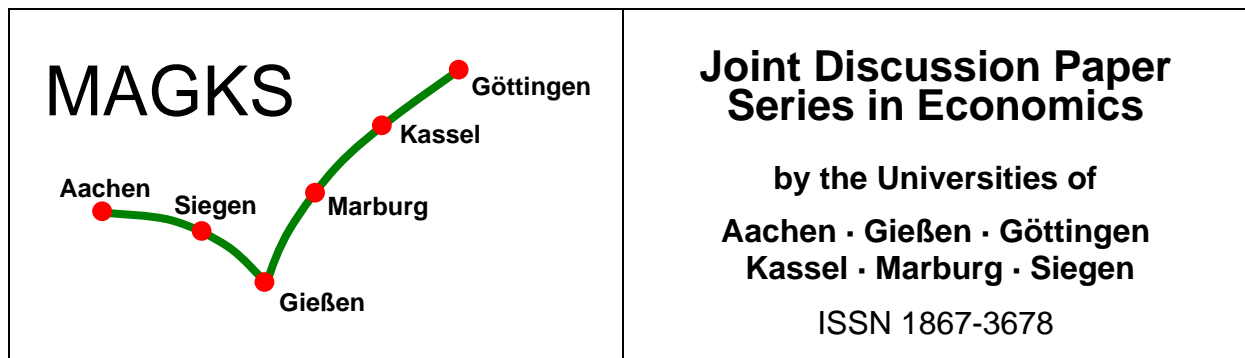
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Long-Run Economic Development**

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Values and Norms Matter – On the Basic Determinants of Long-Run Economic Development*

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Abstract

Over the last couple of decades, it has become a commonplace to claim that “institutions matter” for economic development. Yet, institutions are not exogenous but the result of human action. It is argued here that the values and norms held by substantial parts of society’s members are an important determinant of its institutions. It is further argued that values and norms have both a direct and an indirect effect on economic development: the direct effect materializes because the values and norms also contain the work ethic which, if transformed into behavior, should have direct consequences on economic development. The indirect effect is conjectured to work via the relevant institutions: if institutions are important for economic development and institutions are influenced by the values and norms, then this is a more indirect channel through which values and norms can display their impact.

JEL classification: O43, E19, E66, O11, O12, O17, Z13.

Key Words: Institutions, Values and Norms, Democracy, Rule of Law, Culture, Social Capital, Civil Society, Economic Development, Total Factor Productivity

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„...the causes of the wealth and poverty of nations – the grand object of all enquiries in Political Economy“

Malthus to Ricardo in a letter from 1817.¹

1 Introduction

Just a couple of decades ago, most economists took pride in not resorting to factors like culture or institutions when explaining economic growth. This has dramatically changed. Rodrik, Subramanian & Trebbi (2004) claim, e.g., that “institutions rule” and argue that institutions dominate alternative explanations for long-run economic performance such as geography or economic integration. With regard to constitutions (often interpreted as the most basic layer of formal institutions), Persson & Tabellini (2003) show that a number of constitutional rules (e.g. referring to the voting system) have far-reaching consequences on various economic variables, including total factor productivity.

Representatives of related research programs have made similar claims: Putnam (1993) claims that the degree of civil society is an important long-run determinant for a number of outcome variables. Social capital researchers usually claim that the level of trust as well as the degree to which citizens participate in voluntary associations are important determinants of economic development.

These developments are important for understanding the causes of the wealth and poverty of nations. Yet, we need to dig deeper into these causes. After all, institutions are not exogenously given but rather the outcome of (collective) choice. We thus need to explain why some societies choose welfare-enhancing institutions, whereas others seem to be stuck with inefficient ones. In this paper, we argue that the values and norms held by substantial parts of a society’s members are an important determinant of its institutions. We further conjecture that values and norms exert both a direct and an indirect effect on economic development: the direct effect materializes e.g. because values and norms also contain the work ethic which, if transformed into behavior, should have direct consequences on economic development. The indirect effect is conjectured to work via the relevant institutions: if institutions are important for economic development and institutions are influenced by the values and norms, then this is a more indirect channel through which values and norms can display their impact.

We did find that many of our proxies for values and norms have either a direct or an indirect

¹ Quoted from Landes (1999).

effect on total factor productivity which is our proxy for economic development. Some proxies have either a direct or an indirect effect, others show both direct and indirect effects. The degree of social capital seems to be an important intermediary determinant for economic development, in that many of the indirect effects are expressed via social capital.

The paper is organized as follows: the next section contains our theoretical conjectures. Section three serves to discuss possibilities to put the theoretical conjectures to an empirical test. Section four presents the estimation approach – as well as the data – used. Section five is a discussion of the results and in section six some open questions are shortly mentioned.

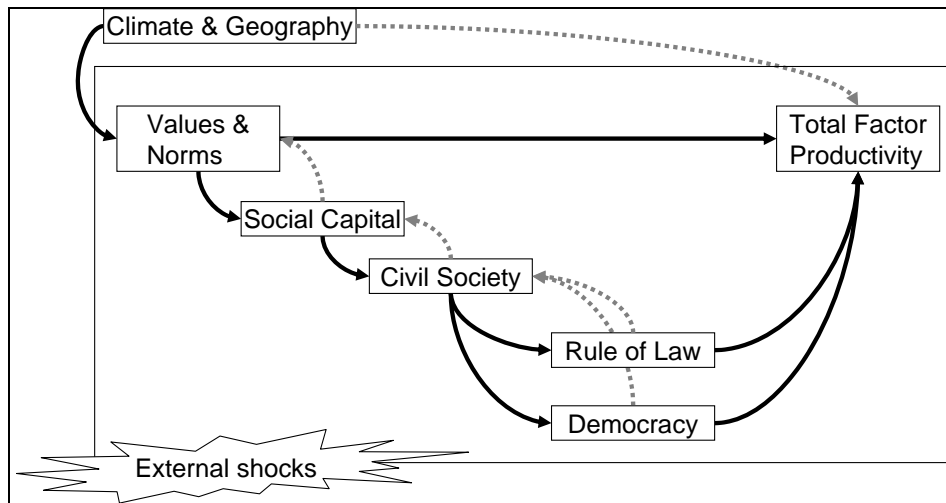
2 Theory

It is the aim of this paper to go beyond the current wisdom of institutional economics. The New Institutional Economics has been a huge success and we simply assume that “institutions matter”. Although there is lots of evidence in favor of this assumption, it is by no means universally accepted². For lack of space, we simply go with the assumption that institutions do matter.

We define institutions as commonly known rules used to structure recurrent interaction situations that are endowed with a sanctioning mechanism whose application is threatened in case the rule part is not complied with. Both the rule of law as well as constitutional democracy (our two proxies for institutions) are, strictly speaking, not institutions because they are made up of dozens or even hundreds of different institutions. In order to keep things simple, we propose to call them institutional systems assuming that there is a minimum amount of internal consistency among the many single institutions. In Figure 1, the assumption that institutions matter is reflected by the arrows from the *rule of law* and *democracy* to the box *economic outcomes*.

² See, e.g., McArthur & Sachs (2001) responding to Acemoglu, Johnson & Robinson (2001).

Figure 1



The most important trait of the rule of law is that the law is to be applied equally to all persons (*isonomia*), government leaders included. It is therefore also called *government under the law*. No power used by government is arbitrary, all power is limited. Drawing on Kant (1797/1995), laws should normatively fulfill the criterion of universalizability, which has been interpreted to mean that the law should be (1) general, i.e., applicable to an unforeseeable number of persons and circumstances, (2) abstract, i.e., not prescribing a certain behavior but simply proscribing a finite number of actions, (3) certain, (anyone interested in discovering whether a certain behavior will be legal can do so with a fairly high chance of being correct and can furthermore expect that today's rules will also be tomorrow's rules) and (4) justifiable in rational discourse between any persons³.

Hayek (1960: 227) has argued that the rule of law would necessarily imply a market economy (i.e. secure private property rights and the freedom of contract), since decisions by the government about who is to produce what in what quantities cannot be subsumed under general rules but imply the arbitrary discrimination between persons. Individual liberty is exempt from arbitrary interference by government – or other powerful groups – only if it is secured by an effectively enforced rule of law. Logically, a rule-of-law constitution does not imply that the political system will be democratic. That is why we deal separately with constitutional democracy.

The concept of constitutionalism was developed primarily by settlers in the British colonies of North America. It links the rule of law with the notion of a written constitution in which the

³ A number of institutional provisions typically support the rule of law. Among the most important ones are the separation of powers, the prohibition of retroactive legislation, the prohibition of expropriation without just compensation, habeas corpus, and other procedural devices such as protection of confidence, the principle of the least disruptive intervention, the principle of proportionality, and the like.

basic procedures that government is to use are laid down. Constitutionalism is thus a normative concept not to be confused with the *de facto* constitution used by any society, which has achieved a minimum amount of order to produce and finance public goods.

A constitution can be defined as the rules based on which a society makes its decisions concerning the provision and financing of public goods. Democracies are called constitutional if the domains to which majoritarian procedures may be applied are limited. A democratic constitution contains specific procedures concerning the choice (and the substitution) of those who are to make decisions concerning the provision of public goods and who have the power to tax even those who are not in favor of a specific bundle of public goods to be provided.

Market economies are based on a specific concept concerning the role of the individual: the individual is the only “unit” that can think and act responsibly and that is capable of pursuing goals responsibly. This position is often subsumed under the heading of ‘methodological individualism’. Market economies are further based on the presumption of (individual) freedom in the sense of “*a condition ... in which all are allowed to use their knowledge for their purposes, restrained only by rules of just conduct of universal application ...*” (Hayek (1973: 55)). These concepts form the basis for guaranteeing private autonomy, which in the economic sphere translates into the freedom to contract. The freedom to contract only makes sense if private property is secure and widely respected. The freedom to contract can furthermore only enhance overall welfare if contracts voluntarily entered into are subsequently adhered to. We have thus arrived at Hume’s three fundamental laws of culture: “*the stability of possession, of its transference by consent, and the performance of promises*”⁴. Functionally, the provisions hitherto mentioned could be said to solve the problem of who has the competence to decide the use of factors and goods in a market economy.

The coordination of individual decisions that will most likely not be compatible with each other *ex ante*, is brought about by competition and the price system. If the questions concerning competence are answered in the way just outlined, competition cannot be used as an instrument to achieve specific goals defined by a central authority, but must be modeled as an open process whose specific results are systematically unpredictable. This trait is best captured by the title of Hayek’s seminal paper, “*Competition as a discovery procedure*”⁵. This understanding of competition also points to the fact that competition helps market actors to discover new knowledge, e.g. in the form of technical progress. If innovations are successful,

⁴ Hume (1740/1990: 526).

⁵ Hayek (1978).

they will most likely draw some demand away from competing suppliers, which may lead to a certain devaluation of their property rights. The existence – and acceptance – of such pecuniary externalities is a necessary condition for sustained economic growth.

But the functions of competition do not stop here. If a similar product is offered by more than one supplier or if there is even the possibility of new entrants into the market, the probability of substitution gives buyers more power over suppliers. The permanent threat of suppliers to be negatively sanctioned by the other market-side, including the threat of being forced out of the market entirely, produces positive incentives for suppliers. When property rights enable entrepreneurs to appropriate the profits from their economic activities, entrepreneurs have every reason to behave innovatively.

Empirically, there is little doubt that a rule of law is correlated with high income levels. The relationship from democracy to income and growth is less clear. In fact, a debate concerning the more plausible direction of causality (from democracy to growth or from growth to democracy) was kicked off by Lipset (1959) and has not been settled until today⁶. What is clear, however, is that different countries realize vastly different levels of both the rule of law as well as of constitutional democracy.

Representatives of political economy have recently proposed a number of explanations based on the power of the ruling elite⁷. According to these approaches, both institutional systems are the consequence of the (relative) power that the ruling class enjoys. Various versions of this approach exist: Barzel (1997) has, e.g., argued that strong elites will more readily enter into institutional arrangements that constrain governments if they are strong. Only strong regimes are able to reap the additional benefits accruing from the increased levels of credibility that follow from these institutional systems. Voigt (1999) has argued that government strength as well as the number of veto players is crucial for institutional development: if some groups have the capacity to prevent a cooperation rent from being produced, then these groups will become part of a “factual social contract”. The higher the number of these groups, the more general will the rules be – in other words: the higher the likelihood to observe the rule of law.

Bargaining for fundamental institutional change with the current ruling elite presupposes the ability of groups to act collectively. It seems plausible to suppose that it is easier for organized groups than for unorganized individuals to act collectively because organized groups have al-

⁶ Sunde (2006) is a recent survey of the main arguments, while Acemoglu, Johnson, Robinson & Yared (2007) represents the most recent argument against a causal effect from growth to democracy.

⁷ See for example Acemoglu & Robinson (2006).

ready solved the problem of collective action. Olson (1965) has shown that many potential interest groups never manage to become effective interest groups because they are unable to solve the problem of collective action, which is basically a free rider problem⁸. Robert Putnam (1993) argues that the performance of democratic institutions does not only hinge upon their formal set-up but also upon civic traditions. His argument could be read as being in direct opposition to Olson's: the larger the number of voluntary associations, the higher the degree of civiness and thus the performance of democratic institutions⁹.

Figure 1 shows that we hypothesize the capacity to act collectively (which is called *social capital* or *civil society* there) to have an impact on the institutional systems realized. But social capital (or civil society) is for its part the (collective) result of individual behavior. We conjecture that the quality as well as the quantity of social capital that can be found anywhere is determined, or at least heavily influenced, by the values and norms prevalent in a society.

The political economy approach of endogenizing institutional systems can also be thought of as a “top down” approach. This can be complemented by a “bottom up” approach which draws directly on values and norms held by individuals. Since this approach is rather novel, we describe it in a little more detail here.

Values have been defined as “... *conceptions of the desirable, influencing selective behavior*” (International Encyclopedia of the Social Sciences). A cluster of values will also be called a value-system. Norms for conduct can be distinguished from values:

“Values are not the same as norms for conduct. ... Values are standards of desirability that are more independent of specific situations. The same value may be a point of reference for a great many specific norms; a particular norm may represent the simultaneous application of several separable values” (ibid.).

The values and norms prevalent in a society are an important determinant of the running cost

⁸ In his *Rise and Decline of Nations*, he argues that within stable regimes, ever more latent interest groups will manage to become manifest interest groups (Olson (1982)). Ever more interest groups will be successful in their rent seeking endeavors which will lead to stagflation, rigidities and reduced economic growth. Olson is not directly concerned with the rule of law but his analysis bears direct implications on our topic: the larger the number of organized interest groups, the higher the probability that the rule of law will suffer due to privileges granted to specific groups. As long as interest groups are not inclusive of the interests of all citizens (or “super-encompassing” as Olson later [McGuire & Olson (1996)] wrote), their existence has to be evaluated negatively. By focusing on the intended consequences of collective action, Olson arrives at the conclusion that interest groups are a threat to the rule of law.

⁹ Not every organization will have such beneficial effects, however: only horizontally organized associations will foster cooperation and trust. Putnam's argument is based on the concept of Civil Society which can be traced back to Ferguson (1988) and Tocqueville (1840/1945). Its adherents claim that a balance of power between government on the one side and a number of voluntary associations on the other would be possible (for an overview, see Gellner (1994)). Although Putnam does not deal with the consequences of civil associations' activities on the possibility to sustain a rule of law-constitution, a causal relationship can easily be established: the larger the number of associations, the higher the chance that a relevant number will protest if government tries to renege upon the constitution.

of institutional systems. Remember that institutions are endowed with the threat of sanction in case of non-compliance with the rule component. If sanctioning relies exclusively on the state (the police, prosecutors etc.) and is not complemented by enforcement from within society, running institutional systems is a lot more costly than if most (or even all) enforcement is done without having to rely on the visible hand of the state. The cost of running institutional systems will, in turn, be crucial for their sustainability over time.

Formulated in terms of a hypothesis:

Institutional systems largely compatible with the prevalent values and norms of a society are more likely to survive than institutional systems largely incompatible with the prevalent values and norms..

This implies that – at least in the long run – there would be a close correspondence between values and norms on the one hand and institutional systems on the other (since institutional systems incompatible with the prevalent values and norms are likely to disappear).

Yet, it would be naïve to attribute prevalent institutional systems exclusively to values and norms. Actors commanding power can incur heavy costs to keep institutional systems alive although they are incompatible with the prevalent values and norms. The conjecture is, hence, that the political economy approach and the values and norms approach are not mutually exclusive but that they both play a role. Economic development depends both on values and norms conducive to it (both directly and indirectly, see Figure 1) and on those preconditions usually considered within political economy approaches.

There is a plethora of potentially relevant political economy factors and instruments to suppress individual freedom and, hence, to prevent values and norms held by individuals to translate into behavior: the military, the police, the capacity to restrict access to necessary resources and so on. To keep the theory simple, we propose to follow Hayek (1973: 55) and argue that economic development will be faster in situations “... *in which all are allowed to use their knowledge for their purposes, restrained only by rules of just conduct of universal application ...*”. Economic development depends on the degree of freedom that individual actors experience. Formulated as a hypothesis:

Economic development is conjectured to be fastest when favorable values and norms are complemented by a high degree of freedom secured via the institutional system.

It would, of course, be interesting to inquire more deeply into the functional relationship between these two causes. This will, however, not be pursued here. Instead, we propose to dig a

bit deeper into the question of which values and norms have positive effects on economic development (both directly and indirectly).

The fundamental hypothesis underlying our “list of favorable values and norms” is that economic systems that are based on individual liberty have proven to provide the greatest chance to enhance individual wealth. The list names some of the attitudes that seem to be either necessary for or favorable to growth in an economic system based on individual liberty. These attitudes would have to be backed by a value-system and its corresponding norms:¹⁰

(1) It is the individual actor who is responsible for decision-making, for carrying out the decisions and for reaching – or not reaching – his goals.

If success in life is, however, perceived of as being largely out of the individual's control and seen as being determined by God, destiny or some organic entity, we would not expect a market economy that is based on private autonomy and that depends on entrepreneurial spirit to develop. The view of the individual who is responsible for the actions committed is a necessary prerequisite for the establishment of private property rights because conceptually, it is them that grant the individual actor the chance to incorporate the benefits arising as a consequence of her actions as well as attribute to her the responsibility to bear the costs.¹¹ It is conjectured that the view of the individual as being largely responsible for his own fate displays a direct as well as an indirect effect: individuals with such norms will try to be better off economically (direct effect) but will also be actively involved in establishing institutions granting them the individual freedom that they strive for. In a similar manner, Casson (1993: 424-425) points out the importance of an “atomistic morality” for long-run economic development, emphasizing individual rights rather than social obligations.

(2) Individuals who are doing exceptionally well economically are perceived as role models rather than being looked at enviously.

This implies that the perceived inequality of economic outcomes is accepted as long as it is legally attained. This is not to imply that inequality either of property or of income is necessarily a prerequisite for a market economy and economic growth¹². It is conjectured that such norms display a positive direct effect whereas the indirect effect appears more uncertain: ac-

¹⁰ In a slightly different form, the following list first appeared in Voigt (1993). Some theory on this can also be found in Casson (1993).

¹¹ Hofstede (1997: 51) describes individualistic societies as “societies in which the ties between individuals are loose: everyone is expected to look after himself or herself and his or her immediate family.”

¹² Hofstede (1997: 164 f.) introduces the dimension “Confucian dynamism” that bears resemblance with these norms. What he has in mind is the degree to which a society encourages (and rewards) group members for good performance.

cepting large inequality could mean that individuals do not actively try to establish rules treating everybody equally, in other words, this norm could be a hindrance for the establishment of the rule of law.

(3) Individuals are geographically and socially mobile.

Geographic mobility is a favorable attitude because it enables the mobile factors to combine their inputs with other – immobile – factors. High geographical mobility ensures the possibility of putting the factors to their most valued use. In order to enhance market systems, this attitude must also be shared by those who are immobile, i.e. those at the ‘recipient end’. If they share a militant aversion against strangers – for example because they constitute a source of competition on the labor-market possibly leading to lower wages – potential economic growth will not be realized.

Social mobility includes upward as well as downward mobility. It is favorable to market systems if people moving up the social ladder are not looked at enviously but are rather perceived as role models. Downward social mobility should ideally not be accompanied by stigmatizing those who have moved down the social ladder.

(4) Individuals do not share a militant aversion against anything unknown.

Market economies thrive on the basis of competition and competition means that innovative behavior is rewarded. But innovations can also occur with regard to political institutions. It is, hence, argued that values and norms trying to conserve the status quo are not conducive to economic development. It is conjectured that there is a direct effect as well as an indirect effect¹³. The direct effect is, e.g., expected to work via the propensity to act as a “consumption pioneer” whereas the indirect effect materializes because such societies are not only likely to experiment with political institutions but also to find those that are more conducive to aggregate welfare.

(5) Equal treatment of all persons.

Traditionally, many societies have made important distinctions between natives and foreigners, between believers and infidels, between men and women. The higher the degree to which such unequal treatment is backed up by corresponding values and norms, the lower the chances for economic development as this unequal treatment implies that human capital is mi-

¹³ Hofstede (1997: 109 ff.) introduces a dimension that he calls “uncertainty avoidance” which depicts the extent to which individuals follow norms that reduce uncertainty. This dimension is very similar to what we have in mind.

sallocated or not used at all. Again, we would expect both a direct and an indirect effect: the direct effect will work through the more efficient allocation of talent whereas the indirect effect is conjectured to work via better political institutions making the efficient allocation of human capital easier.

(6) Values and norms encouraging involvement in community affairs.

These norms could be beneficial for the development of political institutions if they help the relevant populations to overcome the problem of collective action. They might display a more important effect if they come along with norms solving – or at least reducing – the free rider problem. This effect is conjectured to materialize primarily indirectly.

(7) Refusal to accept hierarchies

This norm is conjectured to be important for the way people interact in society. It can relate to all sorts of hierarchies, including firms but also the state. If hierarchies – and the orders issued by them – are accepted without discussion, this would seem to make survival for autocrats easier. It is, hence, conjectured that a high propensity will most likely be connected with undemocratic political institutions. The direct effect is not as clear-cut: on the one hand, a certain degree of accepting superiors' decisions is necessary for firms to function effectively. On the other hand, hierarchies require new ideas and proposals for their development. At the extreme, one could think of values and norms not accepting any hierarchies whatsoever. This could imply that firms would be far below optimum size and would, hence, have a negative direct effect¹⁴.

(8) Individuals share some 'lesser virtues' such as being honest, being on time, not cheating on each other etc.

If a person can reasonably expect that another person unknown to her will e.g. stick to his promises, this will greatly decrease the costs of transacting thus making exchange less complicated and less costly¹⁵. Other values and norms conducive to economic development include thriftiness, diligence and tidiness. All these virtues should display a direct effect. A certain degree of thriftiness is a necessary condition for economic development, without it, no investment is possible. A high degree of thriftiness can therefore also be interpreted as a forward-looking attitude or future-orientation.

¹⁴ Hofstede (1997: 23 ff.) introduces the dimension “power distance” closely resembling the aspects discussed here.

¹⁵ See e.g. Casson (1993: 425-427).

Of course, some of the attitudes described as favorable to an economic system based on decentralized co-ordination are not backed up by corresponding norms in societies that have long been coordinated in this way. It seems to be essential, however, that the people who do share the above-mentioned attitudes are not hindered actively by those parts of the population who do not share them. In other words: it might not be necessary that the listed attitudes are actively backed up by corresponding norms (and values) but that there are no norms that punish those who share them. Thus, if there are umbrella-norms which secure that people who do behave according to some of the above-mentioned attitudes will be sanctioned because they break some traditional norm, prospects for economic growth are predicted to be pretty slim.

3 Possibilities to Put the Theory to an Empirical Test

We are interested in the determinants of long-run economic development. Our conjecture is that it is not primarily elites that determine development but that the values and norms held by substantial groups of society also play an important role. In order to test this hypothesis, it would be ideal to have indicators for the values and norms held in various countries a long time ago, say around 1900. In this section, we discuss possibilities to put the theory to an empirical test. Due to lack of available data, only a fraction of the possibilities discussed can be pursued in this work.

Since the value-system offers the individual a reference-system that helps her to determine the things she does and helps her to order things in an otherwise unordered world, it is unlikely that a person will frequently change parts of her value-system or even the entire system. In other words: values are assumed to be relatively time-invariant. They should be primarily determined during a person's childhood¹⁶. Indicators for the prevalent values in a society would therefore have to be found in the values that children are taught. We think that a society's fairy-tales that have often endured over decades or even centuries would be the most reliable indicator because they have come to reflect the shared value-system of a society. Different from fairy-tales, newly released children's books might also reflect the aspirations and dispositions of their authors and might therefore, especially in totalitarian states, reflect more the values of the nomenclature than those of the people. Unfortunately, we will not be able to draw extensively on fairy-tales as an indicator in this paper as comparative research into fairy-tales has not compared the values and norms emphasized by various fairy-tales.

¹⁶ For evidence on this, see Goodnow (1997) and Knafo & Schwartz (2004).

A second indicator reflecting the values shared in a society might be found by analyzing its religion. This approach can be traced back to Max Weber who analyzed many religions with regard to their ‘economic ethics’ which he understood as “...*not the ethical theory of theological compendia ... but the practical impulses for action that are based on the psychological and pragmatic connections of the religion*”¹⁷. It might be argued that the economic ethics of the respective religions had become largely irrelevant because people had long ceased to be religious. Yet, economic ethics can continue to influence the behavior of people long after they have ceased to view themselves as religious.

A mapping between the economic ethics of religions and values and norms would be ideal. Additionally, a number of issues ought to be reflected in any indicator: the intensity of religious beliefs could be important. People never attending any religious ceremonies might be less guided by values and norms than people regularly doing so. This could well be reflected in their behavior. We are here not only interested in the effect of religions on individual behavior but also on collective outcomes. This implies that the ratio of people following a certain religion should be controlled for. It would, hence, be ideal to use information on the intensity of religious beliefs from some 100 years ago. Unfortunately, we did not find any such data for a large number of countries¹⁸.

A third possible indicator could rely on public opinion polls that contain questions concerning the prevalent values. One problem with such surveys is that they might reflect the attitudes and dispositions that the interviewees think they should have or that they think the group of people that they most identify with would have. Yet, highly professional survey organizations know how to deal with these issues and the responses can tell us quite about the values and norms that real people hold. Previous work by Granato, Inglehart & Leblang (1996) has used this approach, though with an emphasis on growth rather than levels of development. In a recent work closer to this one, Licht, Goldschmidt & Schwartz (2007) use survey data collected by Schwartz (2004)¹⁹ to correlate cultural dimensions with “*the rule of law, corruption and democratic accountability*” (p. 659). We expand the framework of Licht et al. (2007) by (1) using a greater diversity of value dimensions and (2) employing a more general estimation approach.

¹⁷ Weber (1921/1980: 238).

¹⁸ A number of recent studies have found various effects attributed to religions. For an overview, see McCleary & Barro (2006) and Barro & McCleary (2003).

¹⁹ We do not employ the Schwartz data in this study. Evidence by Pryor (2007) and Pryor (2008) suggests that the WVS data and the Schwartz data are similar.

4 The Estimation Approach

The main focus of this paper is on long-term development – and not on short-term growth. This is why we are interested in explaining income levels rather than growth rates. After all, income levels are nothing but aggregate growth rates over a very long time. As our assumption is that institutions matter, we are interested in isolating their effects from the effects of the other factors contributing to growth – and income. This is why we use the Solow-residual as the dependent variable²⁰.

Hall & Jones (1999) conjecture that “social infrastructure” is crucial to explaining variation in total factor productivity (TFP) across countries. Their proxies for social infrastructure include law and order, bureaucratic quality, risk of government repudiation of contracts, the degree of (perceived) corruption but also the openness of an economy to international trade. We propose to start where Hall and Jones ended. They are, of course, aware of the possibility that beneficial social infrastructure might for its part be the result of high incomes, i.e. of reverse causality. To control for that possibility, they rely on an instrumental variables approach using a country’s latitude as well as the degree to which European languages as spoken as native languages as instruments.

Our analysis adapts their central idea that total factor productivity is mainly determined by social infrastructure, but with several modifications. Firstly, we explicitly allow both Social Capital (CIVIL) and Values and Norms (VN) to influence economic performance (TFP), the former indirectly, the latter directly and indirectly (see Figure 1). We thus model Values and Norms as exogenous and Social Capital as endogenous. We justify the former assumption by the relative time-invariance of our proxies for Values and Norms²¹. The latter assumption implies that we are now dealing with three instead of Hall and Jones’ two simultaneous structural equations: the first determines TFP, the second determines institutional quality and the third determines Social Capital. Considering any of the three equations separately would lead to serious endogeneity problems, which is why we estimate them simultaneously²². Note that we explicitly allow for Values and Norms to influence economic performance directly and indirectly.

²⁰ The Solow residual is the fraction of output that cannot be explained by the endowment with capital and labor.

²¹ See Inglehart & Baker (2000). For further evidence, see Guiso, Sapienza & Zingales (2005) and Schwartz, Bardi & Bianchi (2000). Finally, Pryor (2007) and Pryor (2008) provide evidence that economic systems (i.e. systems of institutions) are determined by values rather than the other way around.

²² This is in contrast to an approach with separate estimations, such as in Andonova, Zuleta & Castillo (2007).

$$TFP_i = \alpha_1 + \beta_1 \cdot VN_i + \gamma_1 \cdot INST_i + \delta_1 \cdot X_i + \varepsilon_i \quad (1)$$

$$INST_i = \alpha_2 + \beta_2 \cdot VN_i + \gamma_2 \cdot CIVIL_i + \delta_2 \cdot Y_i + \mu_i \quad (2)$$

$$CIVIL_i = \alpha_3 + \beta_3 \cdot VN_i + \delta_3 \cdot Z_i + \nu_i \quad (3)$$

Where i indexes countries, TFP is total factor productivity, VN is a proxy for values and norms, $INST$ is an indicator of institutional quality, $CIVIL$ is our Social Capital indicator and X , Y and Z are control variables. We cannot estimate equations (1), (2) and (3) separately with OLS because we have to assume that $INST$ and $CIVIL$ are correlated with the respective error term. One solution to this is an instrumental variables approach.

Note that we explicitly include the proxy for Values and Norms in all three structural equations in order to allow for direct as well as indirect effects on economic performance. Identification of our structural parameters hinges on the number of purely exogenous variables we include in the control vectors. Thus, in our first step, we determine which exogenous variables tend to explain TFP , $INST$ and $CIVIL$ best, respectively. Using the Bayesian Information Criterion (see Raftery (1995)), we establish the respective 3x1 vector of control variables that is most probable to explain variations in TFP , $INST$ and $CIVIL$. Table 1 lists all instruments used²³.

In the next step, we estimate equations (1), (2) and (3) simultaneously using 3 stage least squares. This involves utilizing all purely exogenous variables in our system as instruments for all endogenous variables and estimating each structural equation using the instrumented values of the endogenous variables on the right-hand side with Generalized Least Squares (see Greene (2003: 405-407))²⁴.

Beyond the variables used by Hall and Jones for social infrastructure, we propose to use the World Bank indicator for “rule of law”²⁵. In additional estimations, the PolityIV indicators for “constitutional democracy”²⁶ and “constraints on the executive”²⁷ are employed. This ap-

²³ We restrict ourselves to three control variables for reasons of parsimony and sample size.

²⁴ Thus, 2 stage least squares is merely a special case of 3 stage least squares.

²⁵ *Rule of law* measures the extent to which individuals “have confidence in and abide by the rules of society, and in particular, the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence.” Kaufman, Kraay & Mastruzzi (2007: 4). The governance indicators in general and the rule of law indicator in particular have come under heavy attack recently (see, e.g., Arndt & Oman (2006), Kurtz & Schrank (2007b), Kurtz & Schrank (2007a) or Thomas (2007)). Voigt (2008) discusses some of the issues involved in the attempts to make institutions measurable. For lack of a better measure, we continue to use this one, despite its various shortcomings.

²⁶ “*Democracy is conceived as three essential, interdependent elements. One is the presence of institutions and procedures through which citizens can express effective preferences about alternative policies and leaders. Second is the existence of institutionalized constraints on the exercise of power by the executive. Third is the guarantee of civil liberties to all citizens in their daily lives and in acts of political participation.*” Marshall & Jagers (2004: 13).

²⁷ Measures “*the extent of institutionalized constraints on the decision making powers of chief executives, whether individuals or collectivities.*” Marshall & Jagers (2004: 23).

proach will be run for various indicators proxying the dimensions of values and norms mentioned in section 2. We hope that this model appropriately captures the effects of values and norms that are mediated via the institutional system of society.

5 Data and Estimation Results

We now turn to describe the data used in this paper: the dependent variable is taken from Hall and Jones. Following Hall & Jones (1999), we calculate productivity as the residual of a Cobb-Douglas production function. Hall and Jones provide data for 1988, we recalculate them for the year 2000.

Some of the data proxying for values and norms are taken from the so-called GLOBE study on culture, leadership and organization²⁸. GLOBE is an acronym derived from “Global Leadership and Organizational Behavior Effectiveness Research Program”. As the name indicates, the participants of the research project are interested in the consequences of different values and norms for firm behavior, in particular different leadership models. But some of the nine dimensions that they work with mirror our list of favorable values and norms rather closely, so that their data can be meaningfully applied to the central question of this paper. The GLOBE data are based on questionnaire responses of 17,300 middle managers in 951 firms and 62 societies.²⁹ All respondents are from three industries namely (1) food processing, (2) financial services and (3) telecommunication services. A little more than one quarter of all respondents are female. The data were collected during the middle of the 1990s. The GLOBE data systematically distinguish societal practice (“as is”) and societal values (“should be”) in all nine dimensions covered by the survey, on a scale from 1 to 7. Interestingly, the “as is” and the “should be” dimensions are significantly and negatively correlated respectively. Hofstede (2006: 885-886) argues that this is basically due to a measurement problem in the GLOBE survey questionnaire. “As is” value are inherently hard to assess for individuals, and furthermore, the survey questions for the “as is” dimensions were overly abstract. This leads Hofstede to conclude that the “as is” dimension actually reflected their “should be” assessments, mostly by criticizing their respective society (hence the negative correlation).

Potentially, the focus on the middle-management of only three branches constitutes a problem since these persons might not be representative of their societies, resulting in sample selection

²⁸ House, Hanges, Javidan, Dorfman & Gupta (2004).

²⁹ The number of countries is a bit lower because some countries were represented more than once (namely the former East vs. the former West Germany, French-Speaking vs. non-French-Speaking Switzerland, and a black vs. a white sample with regard to South Africa).

bias. However, correlations with both objective data as well as with other surveys (such as the World Values Survey) indicate that this is not a serious problem³⁰.

But the GLOBE project does not cover our list of favorable values and norms in its entirety. This is why we need to draw on other data sources to cover the missing parts of the list. Our second important source is the World Values Survey that has been carried out in four waves to date. Face-to-face interviews have been conducted in 65 countries and each interview covers up to 350 questions³¹.

For each of the seven categories of Values and Norms³², we performed factor analysis to identify common factors among the different individual variables from the GLOBE and the WVS study³³. This approach puts emphasis on the exploratory nature of our analysis³⁴. Strong correlations between the respective GLOBE common factors (for “as is” and “should be”) and WVS dimensions indicates similar constructs were measured in the two surveys. Therefore, we will be using the common factor of both whenever possible.

According to Figure 1, civil society is conjectured to be influenced by values and norms – and to have an impact on institutional systems. In order to identify the unmediated effect of values and norms on institutional systems, it is hence important to control for the strength of civil society. We do this by relying on an indicator proposed by Paxton (2002). It consists of the number of international non-governmental organizations (INGO) present in a country. As argued above, existing associations are conjectured to reduce the problem of collective action substantially. Therefore, it seems a good proxy. It could be argued that the proportion of international nongovernmental organizations among all NGOs could differ substantially between countries. This is, of course, true – and a disadvantage of the measure. On the other hand, international contacts could be an important aspect in the activities of NGOs. In that sense, this measure appears very promising. The INGO-count is available for a very large number of countries and for a number of years. As a given increase in INGO is expected to have more effects in countries with a small number of them, we used the log (of the INGO count variable in 2000) to construct this variable. As further indicator of civil society, we utilize the WVS variable concerning general trust.

³⁰ See Gupta, Sully de Luque & House (2004).

³¹ For details, see World Values Study Group (1999).

³² True, in section 2 eight attitudes were shortly discussed. Unfortunately, we were not able to find any variables proxying for geographic and/or social mobility such that the number of empirically tested attitudes falls to seven.

³³ For a different approach, see Granato et al. (1996: 611).

³⁴ Andonova et al. (2007) also use factor analysis, but in their work, its purpose is to identify a common factor underlying the different dimensions of cultural values.

We now present the operationalizations of the seven groups of Values and Norms identified in Section 2, reporting the respective estimation results in parallel.

(1) Individual responsible for achieving goals

The GLOBE project contains a dimension entitled *Performance Orientation* which refers to the extent to which an organization or society encourages and rewards individual group members for performance improvement and excellence.

The World Values Survey (WVS)³⁵ contains a number of variables indicating to which degree populations in various countries share this norm. We choose two of them. The first one (question V95) asks respondents to assess on a scale “*how much freedom of choice and control you feel you have over the way your life turns out*”, we call it *Perceived Freedom of Choice*. The second one (question V252) asks to assess one’s view on a scale between “*Individuals should take more responsibility for providing for themselves*” and “*The state should take more responsibility to ensure that everyone is provided for*”, we call this one *Preference for individual responsibility*. Our factor analysis indicates two separate factors, one mainly composed of the WVS dimensions (*Individual responsibility*), and the other representing the GLOBE dimensions (*Performance orientation*).

Our results indicate that a higher appreciation of individual responsibility is associated with higher economic performance (Table 4, columns 4 and 7). Furthermore, we find that *Individual responsibility (WVS)* might indirectly influence economic performance via INGO (columns 3, 6 and 9), although it is unclear in what way INGO for its part affects economic performance (columns 1, 4 and 7). The GLOBE common factor for *Performance orientation* influences performance via *Rule of law* (Table 5, column 3).

(2) Inequality Accepted

Here, we rely exclusively on two variables drawn from the WVS, namely V125 (*Secretary Fairness*³⁶) and V250 (*Incomes should be made more equal*³⁷). We combine these variables in a common factor called *Inequality acceptance*.

³⁵ We aggregate the WVS individual level data over each country and over all four waves. The latter can be justified by the relatively strong time-invariance of responses. Theoretical justification for this can be found in Roland (2004), while empirical evidence can be found in Schwartz et al. (2000) and Inglehart & Baker (2000).

³⁶ “*Imagine two secretaries, of the same age, doing practically the same job. One finds out that the other earns \$50 a week more than she does. The better paid secretary, however, is quicker, more efficient and more reliable at her job. In your opinion, is it fair or not fair that one secretary is paid more than the other?*” World Values Study Group (1999: 16).

³⁷ Here, respondents were asked to choose on a scale between “*Incomes should be made more equal*” and “*There should be greater incentives for individual effort.*” World Values Study Group (1999: 27).

Absolute value of t statistics in parentheses, * significant at 5%; ** significant at 1%. Estimations were carried out using the 3 stage least squares procedure. Each set of three columns represents one system of equations, estimated with GLS using instrumented values for the endogenous variables. Control variables are not reported.

Table 6 shows that the willingness to accept inequalities is not conducive to economic performance either directly or indirectly. This result is definitely not in line with our expectations.

(3) No Aversion Against Unknown

Sully de Luque & Javidan (2004: 603) define uncertainty avoidance as “*the extent to which members of collectives seek orderliness, consistency, structure, formalized procedures, and laws to cover situations in their daily lives.*” The dimension *Uncertainty Avoidance* was inspired by similar constructs, e.g. Hofstede’s Uncertainty Avoidance Index.

The conjecture is that lower aversion against anything unknown fosters innovation, which would then be conducive to economic development. The indirect effects of uncertainty avoidance are somewhat more difficult to grasp: if societies are more willing to accept uncertainty, the number of laws and regulations could be lower than in societies having a harder time to tolerate uncertainty. *Ex ante*, the effect of this is, however, unpredictable: on the one hand, this could mean that there are less laws and regulations constraining entrepreneurial behavior and innovation. On the other, if laws and regulations make the environment less uncertain and more predictable, this could also spur additional entrepreneurial activity. It might hence be important to distinguish the direct from the indirect effects of uncertainty avoidance.

In the WVS, questions V69 to V82 ask respondents to choose from a list any group of people that they would not like to have as their neighbor. Those groups include “People with a criminal record”, “Heavy drinkers”, “Muslims”, “People who have AIDS” and so on. Our variable *Uncertainty Avoidance (WVS)* counts the number of groups that respondents mentioned. The common factor *Uncertainty avoidance* includes the WVS variable as well as the above mentioned GLOBE dimensions.

As can be seen in Absolute value of t statistics in parentheses, * significant at 5%; ** significant at 1%. Estimations were carried out using the 3 stage least squares procedure. Each set of three columns represents one system of equations, estimated with GLS using instrumented values for the endogenous variables. Control variables are not reported.

Table 7, Uncertainty avoidance has a robustly negative impact via INGO (columns 3, 6 and 9), while showing a negative direct impact on performance when using *Constitutional democracy* or *Executive constraints* as institutional proxies (columns 4 and 7). Additionally, it influences performance indirectly via *Rule of law* (column 2).

(4) Equality of Treatment

Equality of treatment refers to the equality before the law *tout court*. Encompassing indicators for this do not seem to be available. The GLOBE project does, however, contain the dimension *Gender Egalitarianism* that proxies for one important, if not the most important, dimension with regard to the equality of treatment. Emrich, Denmark & Den Hartog (2004: 347) define it as reflecting “*societies’ beliefs about whether members’ biological sex should determine the roles that they play in their homes, business organizations, and communities.*”

The WVS contains two corresponding variables. The first (V130) asks respondents whether they agree to the statement “*When jobs are scarce, men have more right to a job than women*”. The second one states “*Men make better political leaders than women do*” (V118).

Absolute value of t statistics in parentheses, * significant at 5%; ** significant at 1%. Estimations were carried out using the 3 stage least squares procedure. Each set of three columns represents one system of equations, estimated with GLS using instrumented values for the endogenous variables. Control variables are not reported.

Table 8 shows that our common factor for the value *Equal treatment* does not impact on *TFP* directly. However, there is some evidence that it influences performance indirectly via INGO (columns 3, 6 and 9).

(5) Interest in the Public Good

This dimension is expected to display an effect indirectly rather than directly, namely via the higher quality of institutions that are prerequisite for economic development.

Here, we use four variables from the WVS: *Accept tax increase if used to prevent pollution*³⁸, *Belongs to some organization*³⁹, *Does unpaid work for some organization*⁴⁰, *Participation in political action*⁴¹. Factor analysis reveals two underlying factors, the first relating to the first three variables (we call it *Contribution to public good*), the second relating solely to *Participation in political action*.

Absolute value of t statistics in parentheses, * significant at 5%; ** significant at 1%. Estimations were carried out using the 3 stage least squares procedure. Each set of three columns represents one system of equations, estimated with GLS using instrumented values for the endogenous variables. Control variables are not reported.

Table 9 shows that the first factor, *Contribution to public good*, does not seem to impact in any way on economic performance. On the other hand, *Participation in political action* is shown to have some influence in Absolute value of t statistics in parentheses, * significant at 5%; ** significant at

³⁸ V13: “*I would agree to an increase in taxes if the extra money is used to prevent environmental pollution.*”

³⁹ Questions V19 to V34 listed types of organizations, such as trade unions, human rights movements, women’s groups. Respondents were asked to state whether they belonged to or did unpaid work for such organizations.

⁴⁰ see *Belongs to some organization*.

⁴¹ Questions V242 to V246 asked respondents to state for several forms of political action whether they had ever done, might do or would never do them.

1%. Estimations were carried out using the 3 stage least squares procedure. Each set of three columns represents one system of equations, estimated with GLS using instrumented values for the endogenous variables. Control variables are not reported.

Table 10, mostly via INGO (columns 3, 6 and 9). It also directly impacts on performance when using *Constitutional democracy* or *Executive constraints* as institutional proxies (columns 4 and 7). A sweeping interpretation could be that it is not monetary but real participation that matters.

(6) Propensity to Accept Hierarchies

The propensity to accept hierarchies has been conjectured to be detrimental to economic development, primarily due to its expected indirect effect of a higher willingness to accept institutions not conducive to development. As a proxy for this, we rely on the dimension *Power Distance* found in the GLOBE project and defined as “*the degree to which members of an organization or society expect and agree that power should be shared unequally*” (Carl, Gupta & Javidan (2004: 537)).

Question V127 from the WVS asks respondents whether “*one should follow instructions of one’s superiors (at work) even when one does not fully agree with them*”, we call this one *Hierarchy acceptance (WVS)*.

The common factor, *Hierarchy acceptance*, does not seem to be relevant for economic performance (Absolute value of t statistics in parentheses, * significant at 5%; ** significant at 1%. Estimations were carried out using the 3 stage least squares procedure. Each set of three columns represents one system of equations, estimated with GLS using instrumented values for the endogenous variables. Control variables are not reported.

Table 11).

(7) Shared Lesser Virtues

Virtues such as honesty, trust and thriftiness are conjectured to keep transaction costs low which should have positive effects on economic development. Unfortunately, it is not easy to find indicators that cover these secondary virtues in their entirety. Among the nine dimensions contained in the GLOBE project, one dimension does, however, reflect part of the conjecture that we have in mind. This is *Future orientation* which is defined (Ashkanasy, Gupta, Mayfield & Trevor-Roberts (2004: 285)) as “*the extent to which members of a society or an organization believe that their current actions will influence their future, focus on investment in their future, believe that they will have a future that matters, believe in planning for developing their future, and look far into the future for assessing the effects of their current actions.*” Without future orientation, there will be no investment. Since investments are one key to eco-

conomic development, we argue that high values of future orientation should have an impact on the economic development of a society.

There is some evidence that *Future orientation* (common factor) is relevant for economic performance (Table 12). It shows a (weakly) significant effect via INGO (columns 3, 6 and 9) and *Rule of law* (column 2).

6 Conclusions and Outlook

It has become somewhat of a commonplace to claim that institutions matter for economic development. The endogeneity of institutions is often mentioned but not explicitly inquired into. In this paper, we develop a number of hypotheses how values and norms could impact upon some of the institutions conjectured to be relevant for economic development. Drawing on a simultaneous equation approach, we examine the influence of various values and norms on economic performance, both directly (total factor productivity) and indirectly via institutions (rule of law, constitutionalized democracy, constraints on the executive) and civil society (proxied for by the number of international non-governmental organizations active in a given country). The first conclusion is that some values and norms indeed matter for economic development, although we do not know much yet about the precise transmission channels. Our estimations show that it seems crucial to explicitly allow for an indirect effect via *Civil society*. Furthermore, the impact of values and norms greatly depends on the choice of institutional proxy. Additional theoretical underpinning but also more analysis on the transmission channels is desirable. The finding that the factors proxying for the values *Inequality accepted* and *Hierarchy acceptance* do not exert any significant influence on economic development either directly or indirectly certainly is a surprise.

Are there any policy conclusions we can draw from these results? Certainly we do not propose that values and norms can be molded in order to achieve superior economic performance, at least not in the short run. But a deeper insight into the interaction between formal and informal institutions (including values and norms) can help policy makers improve decisions regarding formal institutions.

7 Tables

Table 1: Variables used (with descriptive statistics)

<i>Name</i>	<i>Source and Description</i>	Mean	S.D.	Min	Max
TFP	Natural logarithm of total factor productivity, own calculation for 2000 based on Hall & Jones (1999).	7.34	0.35	6.51	8.07
Rule of Law index	World Bank. <i>Rule of law</i> measures the extent to which individuals “have confidence in and abide by the rules of society, and in particularly, the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence.” Kaufman et al. (2007: 4).	0.00	1.00	-2.31	2.20
Constitutionalized democracy	Polity IV. “ <i>Democracy is conceived as three essential, interdependent elements. One is the presence of institutions and procedures through which citizens can express effective preferences about alternative policies and leaders. Second is the existence of institutionalized constraints on the exercise of power by the executive. Third is the guarantee of civil liberties to all citizens in their daily lives and in acts of political participation.</i> ” Marshall & Jaggers (2004: 13).	2.94	6.62	10.00	10.00
Constraints on the executive	Polity IV. Measures “ <i>the extent of institutionalized constraints on the decision making powers of chief executives, whether individuals or collectivities.</i> ” Marshall & Jaggers (2004: 23).	4.71	2.09	1.00	7.00
Number of international NGOs (log)	Paxton (2002). Number of international non-governmental organizations (INGO) present in a country (logarithm).	6.55	0.86	4.50	8.17
Individual responsibility (WVS)	See 5 for detailed description.	0.00	1.00	-1.91	1.81
Performance orientation (GLOBE)	See 5 for detailed description.	0.00	1.00	-2.04	2.14
Inequality acceptance (WVS)	See 5 for detailed description.	0.00	1.00	-2.18	2.53
Uncertainty avoidance	See 5 for detailed description.	0.00	1.00	-1.92	1.71
Equal treatment	See 5 for detailed description.	0.00	1.00	-1.68	2.68
Contribution to public good	See 5 for detailed description.	0.00	1.00	-1.27	4.25
Participation in political action	See 5 for detailed description.	0.00	1.00	-2.17	2.06
Hierarchy acceptance	See 5 for detailed description.	0.00	1.00	-2.35	1.93
Future orientation (GLOBE)	See 5 for detailed description.	0.00	1.00	-1.58	2.55
Absolute Distance from equator	Distance from equator, normalized to a scale from 0 to 1.	0.27	0.18	0.00	0.71
Years of Schooling	World Bank (2005): Years of schooling. Missing data were imputed by augmenting the data in Hall and Jones for 1985 (originally provided by Barro & Lee (1993)) with the average growth rate in schooling between 1985 and 2000	5.21	2.75	0.54	12.04
Frankel/Romer trade instrument	Frankel & Romer (1999): Natural log of trade share predicted by a gravity model of international trade which takes both a country’s population and its geographical location into account.	1.03	1.98	-1.00	5.64
Constitutionalized democracy 1995	Polity IV indicator for constitutionalized democracy for 1995.	2.46	6.81	10.00	10.00
Ethnic fractionalization	Alesina, Devleeschauwer, Easterly, Kurlat & Wacziarg (2003): Index of ethnic fractionalization.	0.44	0.28	-1.00	0.93
Muslim fraction	La Porta, Lopez-de-Silanes, Shleifer & Vishny (1999): Muslim population share.	22.70	34.01	0.00	99.50
Hydrocarbon production	McArthur & Sachs (2001): Hydrocarbon Production per Capita in 1993 (log).	0.69	4.58	-4.61	10.59
Malaria transmission index	McArthur & Sachs (2001): Malaria Transmission Index in 1994.	0.29	0.41	0.00	1.00

Table 2: Pairwise correlations of common factors

	Individual responsibility (WVS)	Performance orientation (GLOBE)	Inequality acceptance (WVS)	Uncertainty avoidance	Equal treatment	Contribution to public good	Participation in political	Hierarchy acceptance	Future orientation (GLOBE)
Individual responsibility (WVS)	1								
Performance orientation (GLOBE)	-0.127	1							
Inequality acceptance (WVS)	-0.0857	0.0693	1						
Uncertainty avoidance	-0.5737*	-0.2960*	0.0547	1					
Equal treatment	-0.6551*	0.3333	0.3713*	0.4650*	1				
Contribution to public good	0.0601	0.3127	-0.065	-0.2497	-0.1372	1			
Participation in political	0.3653*	0.0721	0.0324	-0.4996*	-0.5483*	0	1		
Hierarchy acceptance	-0.1162	-0.4998*	-0.2528	0.3306*	0.0248	-0.4470*	-0.1535	1	
Future orientation (GLOBE)	0.4724*	0.5366*	-0.02	-0.7879*	-0.271	0.4488*	0.4533*	-0.4758*	1
*indicates 5% significance.									

Table 3: Control variables

Variable	Set of control variables
TFP (log)	<i>Years of Schooling</i> <i>Hydrocarbon Production per Capita in 1993 (log)</i> <i>Malaria Transmission Index in 1994</i>
Number of international NGOs (log)	<i>Absolute Distance from Equator</i> <i>Hydrocarbon Production per Capita in 1993 (log)</i> <i>Frankel/Romer trade instrument</i>
Rule of Law index (World Bank)	<i>Years of Schooling</i> <i>Absolute Distance from Equator</i> <i>Frankel/Romer trade instrument</i>
Constitutionalized democracy 2000 (Polity IV)	<i>Muslim Fraction</i> Constitutionalized democracy 1995 Ethnolinguistic fractionalization
Constraints on the executive (Polity IV)	<i>Absolute Distance from Equator</i> <i>Muslim Fraction</i> <i>Frankel/Romer trade instrument</i>

Table 4: Individual responsible for achieving goals (a)

	1	2	3	4	5	6	7	8	9
	TFP (log)	Rule of Law index (World Bank)	Number of international NGOs (log)	TFP (log)	Constitutionalized democracy (Polity IV)	Number of international NGOs (log)	TFP (log)	Constraints on the executive (Polity IV)	Number of international NGOs (log)
Individual responsibility (WVS)	0.029	0.416	0.217	0.147	1.017	0.28	0.155	0.249	0.287
	0.77	2.26*	3.30**	4.50**	1.55	4.41**	4.25**	0.82	4.49**
Number of international NGOs (log)		-0.832			-0.102			0.64	
		1.44			0.06			0.64	
Rule of Law index (World Bank)	0.337								
	4.45**								
Constitutionalized democracy (Polity IV)				0.005					
				0.77					
Constraints on the executive (Polity IV)							0.004		
							0.13		
Constant	7.918	4.016	6.303	7.713	3.597	6.407	7.705	0.151	6.407
	81.41**	1.09	45.56**	90.07**	0.29	44.37**	42.75**	0.02	44.05**
Observations	61	61	61	55	55	55	55	55	55
R-squared	0.65	0.42	0.62	0.54	0.78	0.65	0.53	0.65	0.64

Absolute value of t statistics in parentheses, * significant at 5%; ** significant at 1%. Estimations were carried out using the 3 stage least squares procedure. Each set of three columns represents one system of equations, estimated with GLS using instrumented values for the endogenous variables. Control variables are not reported.

Table 5: Individual responsible for achieving goals (b)

	1	2	3	4	5	6	7	8	9
	TFP (log)	Rule of Law index (World Bank)	Number of international NGOs (log)	TFP (log)	Constitutionalized democracy (Polity IV)	Number of international NGOs (log)	TFP (log)	Constraints on the executive (Polity IV)	Number of international NGOs (log)
Performance orientation (GLOBE)	-0.026	0.344	0.107	0.03	-0.05	0.098	0.041	-0.345	0.103
	1.01	2.65**	1.53	0.95	0.11	1.32	1.16	1.27	1.4
Number of international NGOs (log)		-0.354			2.473			3.62	
		0.32			1.15			2.19*	
Rule of Law index (World Bank)	0.243								
	4.77**								
Constitutionalized democracy (Polity IV)				0.011					
				1.6					
Constraints on the executive (Polity IV)							0.099		
							2.45*		
Constant	7.781	0.852	6.223	7.59	-16.432	6.252	7.103	-18.656	6.167
	98.20**	0.13	36.95**	87.76**	1.04	34.03**	32.61**	1.77	33.53**
Observations	52	52	52	48	48	48	48	48	48
R-squared	0.71	0.63	0.49	0.5	0.78	0.49	0.4	-0.49	0.49

Absolute value of t statistics in parentheses, * significant at 5%; ** significant at 1%. Estimations were carried out using the 3 stage least squares procedure. Each set of three columns represents one system of equations, estimated with GLS using instrumented values for the endogenous variables. Control variables are not reported.

Table 6: Inequality acceptance

	1	2	3	4	5	6	7	8	9
	TFP (log)	Rule of Law index (World Bank)	Number of international NGOs (log)	TFP (log)	Constitutionalized democracy (Polity IV)	Number of international NGOs (log)	TFP (log)	Constraints on the executive (Polity IV)	Number of international NGOs (log)
Inequality acceptance (WVS)	0.012	-0.048	-0.064	-0.018	-0.063	-0.093	-0.008	-0.121	-0.084
	0.45	0.45	1.11	0.56	0.23	1.6	0.21	0.94	1.45
Number of international NGOs (log)		-0.479			1.083			1.498	
		0.86			1.04			2.14*	
Rule of Law index (World Bank)	0.366								
	5.20**								
Constitutionalized democracy (Polity IV)				0.015					
				1.88					
Constraints on the executive (Polity IV)							0.074		
							1.71		
Constant	7.929	1.642	6.201	7.594	-6.493	6.217	7.286	-5.524	6.182
	72.50**	0.48	42.77**	80.82**	0.88	39.98**	34.39**	1.23	39.09**
Observations	59	59	59	53	53	53	53	53	53
R-squared	0.61	0.49	0.56	0.4	0.84	0.56	0.42	0.59	0.56

Absolute value of t statistics in parentheses, * significant at 5%; ** significant at 1%. Estimations were carried out using the 3 stage least squares procedure. Each set of three columns represents one system of equations, estimated with GLS using instrumented values for the endogenous variables. Control variables are not reported.

Table 7: No aversion against unknown

	1	2	3	4	5	6	7	8	9
	TFP (log)	Rule of Law index (World Bank)	Number of international NGOs (log)	TFP (log)	Constitutionalized democracy (Polity IV)	Number of international NGOs (log)	TFP (log)	Constraints on the executive (Polity IV)	Number of international NGOs (log)
Uncertainty avoidance	0.164	-0.773	-0.212	-0.134	0.488	-0.176	-0.132	0.407	-0.173
	0.85	4.05**	3.39**	5.08**	0.63	2.79**	4.65**	1.58	2.73**
Number of international NGOs (log)		-0.878			2.356			2.08	
		1.24			0.81			1.88	
Rule of Law index (World Bank)	0.456								
	1.58								
Constitutionalized democracy (Polity IV)				0.011					
				2.11*					
Constraints on the executive (Polity IV)							0.045		
							1.53		
Constant	7.916	5.405	6.723	7.751	-16.183	6.634	7.549	-9.817	6.624
	70.47**	1.12	44.13**	104.24**	0.76	43.01**	47.43**	1.29	42.77**
Observations	42	42	42	38	38	38	38	38	38
R-squared	0.44	0.71	0.66	0.68	0.82	0.67	0.66	0.55	0.67

Absolute value of t statistics in parentheses, * significant at 5%; ** significant at 1%. Estimations were carried out using the 3 stage least squares procedure. Each set of three columns represents one system of equations, estimated with GLS using instrumented values for the endogenous variables. Control variables are not reported.

Table 8: Equality of treatment

	1	2	3	4	5	6	7	8	9
	TFP (log)	Rule of Law index (World Bank)	Number of international NGOs (log)	TFP (log)	Constitutionalized democracy (Polity IV)	Number of international NGOs (log)	TFP (log)	Constraints on the executive (Polity IV)	Number of international NGOs (log)
Equal treatment	-0.037	-0.723	-0.231	-0.073	0.169	-0.265	-0.081	-0.166	-0.249
	0.88	1.51	2.53*	1.64	0.13	3.30**	1.41	0.19	3.07**
Number of international NGOs (log)		-3.184			2.082			2.115	
		2.05*			0.56			0.77	
Rule of Law index (World Bank)	0.317								
	1.5								
Constitutionalized democracy (Polity IV)				0.003					
				0.34					
Constraints on the executive (Polity IV)							0.002		
							0.04		
Constant	7.92	20.053	6.709	7.664	-14.224	6.761	7.658	-9.855	6.731
	42.63**	1.92	37.11**	71.51**	0.52	37.71**	24.00**	0.53	36.84**
Observations	32	32	32	30	30	30	30	30	30
R-squared	0.57	-1.14	0.55	0.45	0.8	0.62	0.44	0.51	0.62

Absolute value of t statistics in parentheses, * significant at 5%; ** significant at 1%. Estimations were carried out using the 3 stage least squares procedure. Each set of three columns represents one system of equations, estimated with GLS using instrumented values for the endogenous variables. Control variables are not reported.

Table 9: Interest in the public good (a)

	1	2	3	4	5	6	7	8	9
	TFP (log)	Rule of Law index (World Bank)	Number of international NGOs (log)	TFP (log)	Constitutionalized democracy (Polity IV)	Number of international NGOs (log)	TFP (log)	Constraints on the executive (Polity IV)	Number of international NGOs (log)
Contribution to public good	-0.02	0.05	-0.066	0.02	0.084	-0.068	0.019	0.016	-0.062
	0.6	0.38	1.22	0.58	0.51	1.23	0.54	0.11	1.1
Number of international NGOs (log)		-0.33			-0.223			2.923	
		0.36			0.28			3.44**	
Rule of Law index (World Bank)	0.336								
	4.71**								
Constitutionalized democracy (Polity IV)				-0.002					
				0.15					
Constraints on the executive (Polity IV)							0.074		
							0.72		
Constant	7.803	0.74	6.383	7.706	3.364	6.476	7.262	-14.951	6.453
	73.28**	0.13	38.71**	58.76**	0.6	37.64**	12.35**	2.71**	35.95**
Observations	41	41	41	37	37	37	37	37	37
R-squared	0.62	0.54	0.62	0.52	0.94	0.59	0.53	0.4	0.58

Absolute value of t statistics in parentheses, * significant at 5%; ** significant at 1%. Estimations were carried out using the 3 stage least squares procedure. Each set of three columns represents one system of equations, estimated with GLS using instrumented values for the endogenous variables. Control variables are not reported.

Table 10: Interest in the public good (b)

	1	2	3	4	5	6	7	8	9
	TFP (log)	Rule of Law index (World Bank)	Number of international NGOs (log)	TFP (log)	Constitutionalized democracy (Polity IV)	Number of international NGOs (log)	TFP (log)	Constraints on the executive (Polity IV)	Number of international NGOs (log)
Participation in political action	0.009	0.306	0.153	0.114	-0.047	0.147	0.103	-0.184	0.15
	0.25	2.26*	2.89**	3.55**	0.25	2.74**	2.48*	1.06	2.77**
Number of international NGOs (log)		-0.399			0.008			2.636	
		0.61			0.01			3.20**	
Rule of Law index (World Bank)	0.341								
	4.43**								
Constitutionalized democracy (Polity IV)				-0.009					
				0.74					
Constraints on the executive (Polity IV)							0.014		
							0.12		
Constant	7.814	1.555	6.473	7.798	1.643	6.511	7.628	-13.165	6.537
	72.09**	0.37	42.57**	61.88**	0.29	41.40**	11.28**	2.43*	40.14**
Observations	41	41	41	37	37	37	37	37	37
R-squared	0.61	0.59	0.67	0.61	0.94	0.65	0.62	0.5	0.64

Absolute value of t statistics in parentheses, * significant at 5%; ** significant at 1%. Estimations were carried out using the 3 stage least squares procedure. Each set of three columns represents one system of equations, estimated with GLS using instrumented values for the endogenous variables. Control variables are not reported.

Table 11: Propensity to accept hierarchies

	1	2	3	4	5	6	7	8	9
	TFP (log)	Rule of Law index (World Bank)	Number of international NGOs (log)	TFP (log)	Constitutionalized democracy (Polity IV)	Number of international NGOs (log)	TFP (log)	Constraints on the executive (Polity IV)	Number of international NGOs (log)
Hierarchy acceptance	0.045	-0.259	0.015	-0.02	0.511	-0.019	-0.015	-0.016	-0.017
	1.54	1.7	0.24	0.55	1.33	0.32	0.37	0.09	0.28
Number of international NGOs (log)		-0.792			0.773			2.585	
		0.82			0.37			2.04*	
Rule of Law index (World Bank)	0.25								
	4.11**								
Constitutionalized democracy (Polity IV)				0.017					
				2.35*					
Constraints on the executive (Polity IV)							0.103		
							2.56*		
Constant	7.782	4.109	6.454	7.659	-4.751	6.495	7.153	-12.933	6.444
	87.99**	0.66	41.94**	77.18**	0.31	41.06**	37.32**	1.51	40.35**
Observations	41	41	41	37	37	37	37	37	37
R-squared	0.73	0.47	0.57	0.47	0.83	0.59	0.38	0.44	0.6

Absolute value of t statistics in parentheses, * significant at 5%; ** significant at 1%. Estimations were carried out using the 3 stage least squares procedure. Each set of three columns represents one system of equations, estimated with GLS using instrumented values for the endogenous variables. Control variables are not reported.

Table 12: Shares lesser virtues

	1	2	3	4	5	6	7	8	9
	TFP (log)	Rule of Law index (World Bank)	Number of international NGOs (log)	TFP (log)	Constitutionalized democracy (Polity IV)	Number of international NGOs (log)	TFP (log)	Constraints on the executive (Polity IV)	Number of international NGOs (log)
Future orientation (GLOBE)	-0.062	0.446	0.172	0.071	-0.762	0.203	0.06	-0.645	0.181
	1.59	2.52*	2.47*	2.27*	1.2	2.82**	1.8	1.88	2.50*
Number of international NGOs (log)		-0.411			3.147			3.517	
		0.42			1.18			2.01*	
Rule of Law index (World Bank)	0.28								
	4.05**								
Constitutionalized democracy (Polity IV)				0.009					
				1.32					
Constraints on the executive (Polity IV)							0.073		
							1.97		
Constant	7.765	1.615	6.378	7.633	-21.173	6.439	7.265	-18.524	6.351
	98.04**	0.26	36.24**	88.26**	1.08	35.18**	35.88**	1.63	34.06**
Observations	52	52	52	48	48	48	48	48	48
R-squared	0.7	0.66	0.53	0.52	0.78	0.52	0.47	-0.31	0.53

Absolute value of t statistics in parentheses, * significant at 5%; ** significant at 1%. Estimations were carried out using the 3 stage least squares procedure. Each set of three columns represents one system of equations, estimated with GLS using instrumented values for the endogenous variables. Control variables are not reported.

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