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a cross-country investigation

by Thomas Farole,
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Abstract:

Research on the institutional foundations of economic development emphasizes either rule-bound systems of exchange or informal bonds between individuals and within small groups. This corresponds to a classical division in social science, between the forces of society and those of community. This cleavage largely ignores their interactions, which are likely to shape the institutions that underpin economic development in decisive ways. This paper operationalises and tests how the interaction of the forces of community (or social capital) and society (or rules) impact three types of institutions: those involved in problem solving, those that shape microeconomic efficiency and those that influence social policy, across fifty-eight countries. We find that both community and society are important determinants across all institutional domains, and are in many cases mutually reinforcing, but that different specific aspects of community and society are most relevant to different institutional domains. Instrumental associationalism, whether formal or informal, and a robust rules environment are the most important determinants of positive institutional outcomes.

1. Introduction:

In seeking explanations for recent success stories in regional economic development such as Silicon Valley, the 'Third Italy', and Baden-Württemberg, on one hand, or broad comparative patterns of national economic growth, on the other, researchers seem to have fallen into a curious conceptual opposition. Some attribute the success of these economies to strong, overlapping communities, informal networks, and trust (Pyke et al 1990; Saxenian 1994). Others see well-functioning institutions – financial and labour markets, technology development and transfer, training and education, and governance structures (Cooke 1997; Amin 1999) – as the drivers of regional economic growth.

Such radically different interpretations stem from an old debate that positions community and society as opposing principles of social and economic organisation. Surely this is a false dichotomy. The forces of society and community co-exist and interact at all times and at all territorial levels (Storper 2005). Indeed, the existence of one without the other is unlikely and hence misleading as an assumption for research on the sources of development. In this light, it is of both theoretical and practical importance to understand the interactions of these two forces. Yet economic development policies espoused by powerful institutions such as the World Bank and IMF have in recent years focused on the institutions of society (e.g. property rights, rule of law, democratic governance, etc.), which they consider to be the fundamental drivers of economic growth. In parallel, many of these same institutions, along with governments and non-governmental organisations at all geographical levels now endorse promoting local communities and 'social capital' as critical underpinnings of economic and social well-being. Seldom, however, do policies explicitly consider possible interactions between the two.

Social scientists too have, for the most part, been reluctant to analyse this relationship in their research on the institutional foundations of economic growth and development. Theoretical and empirical research over the past decade – in the areas of social capital, trust, institutions and economic growth theory, industrial districts, and innovation systems – has made considerable progress in explaining the independent roles of community and society. For the most part, however, the literature has failed to address the interaction of community and society or to conduct comparative, quantitative investigations of these relationships. Recent work by two of the authors of this paper (Storper 2005; Rodríguez-Pose and Storper 2006) outlined a framework for the interaction of community and society in a broad economic context. They argue that community and society are complementary forces whose balance and interactions shape medium and long-run development prospects of territories by shaping the institutional foundations of economic development. Strong communities in the absence of society inevitably result in moral hazards or open conflict between groups competing for limited resources. Similarly, strong society in the absence of community has shown to entrench political elites and to result in economic inefficiency by stifling individual agency and raising information and transaction costs.

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This paper reports on a first attempt to operationalise and empirically test the interaction of community and society in affecting long-run economic development. We develop a framework that focuses on institutions as intermediate outcomes which are shaped by the forces of society and community and in turn determine economic growth and development trajectories. The model is tested by running pooled regressions across 58 countries, based on two panels of data, from 1990 and 2000. We present the results of the model against eleven dependent variables that reflect three institutional domains that are hypothesized to be strongly related to long-run economic performance: *problem solving, microeconomic efficiency, and social policy.*

2. <u>On community and society as determinants of economic development</u>

In recent years, research on the foundations and drivers of economic development has engaged intensively with the concepts of institutions in general, and of community and society, in particular. In this section, we briefly review some of the relevant research that has influenced our current enquiry, and present our framework for how interaction of community and society shape economic development outcomes.

Influential research on social networks (Granovetter 1973,1985) and social capital (c.f. Coleman 1988; Putnam 1993,2000) highlights the role of meso-level relations – what we denote by "communities" – in economic and social processes. A broad range of recent empirical investigations have attempted to test the economic implications of social capital. Knack and Keefer's (1997) pioneering study found growth to be strongly associated with trust, but not with associational membership [Putnam's (2000) fundamental component of social capital]. Further studies (Zak and Knack 2001; Knack 2003; Beugelsdijk and van Schaik 2004; Bengtsson, Berggren, and Jordahl 2005) support these findings. In contrast, Beugelsdijk and van Schaik (2005) conclude that trust is not associated with growth across European regions. But linking trust with growth by no means proves a role for community unless it can be shown that community is a fundamental determinant of trust – the research on this is less clear. Putnam's studies in Italy and America (Putnam 1993, 2000) suggest that community associationalism, measured through group membership, facilitates trust. However, a number of researchers including Stolle (1998), Whiteley (1999), and Uslaner (1999) argue that the causality runs the other way around. And whilst Beugelsdijk and van Schaik (2005) show a positive link between membership and growth across European regions, most studies find little or no evidence of a relationship between associationalism and trust or growth (c.f. Knack and Keefer 1997; Knack 2003; Beugelsdijk and van Schaik 2004;

Bjornskov 2006). Thus, the role of community in economic life remains far from clear. And although some of the theoretical literature (Bowles and Gintis 2001; Dulleck, Bezemer, and Frijters 2004) suggests complementary relationships between community and institutions of society, no empirical studies have addressed it.

Research on society stems from recent work on the role of institutions and governance in growth theory. Knack and Keefer (1995) and Hall and Jones (1999) show that income, productivity, and growth across countries could be explained by differences in institutions and government policy. Further research upholds these findings and emphasises the importance of fundamental institutions such as property rights and the rule of law (c.f. Vijayaraghavan and Ward 2001; Rodrik, Subramanian, and Trebbi 2004). Other studies highlight the role of political institutions such as 'checks and balances' (Stasavage 2000), political competition, and constraints on the executive (Aghion, Alesina, and Trebbi 2002). Finally, Alesina, Baqir, and Easterly (1997), Rodrik (1998), and Easterly (2000a, 2000b) show how social structure and institutional quality impact conflict resolution and, ultimately, economic growth.

As with the research on community, the empirical studies focusing on society have improved our understanding of the factors shaping economic growth, but leave much to be explained. It is certain that institutions matter, but we do not yet have a clear explanation as to *which* institutions matter, *when*, and *how*. One possible reason for these gaps is that research largely eschews the underlying determinants of why societal institutions perform well or poorly. We hold that interaction between societal institutions and communities are a major such determinant.

Research in economic geography has perhaps gone furthest in incorporating simultaneous roles for both informal associational forces and formal institutional ones. In particular the literature on industrial districts (c.f. Beccattini 1990; Antonelli 1994; Saxenian 1994; Scott and Storper 2003) and on innovation systems and learning regions (c.f. Lundvall 1992; Florida 1995; Cooke and Morgan 2000) emphasises the importance of group norms, trust, and cooperation, but recognises the importance of having these meso-level relationships embedded in a 'thick institutional' setting (Amin and Thrift 1994). However, this body of research is supported by limited empirical work (mostly single region case studies).

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Recent papers by Daron Acemoglu and colleagues (Acemoglu, Johnson, and Robinson 2004; Acemoglu 2006; Acemoglu and Johnson 2006a, 2006b) have come closest to developing an embracing model of institutional change and economic development. However, the role of groups remains implicit in their thinking. They do not consider how a group's capacity for collective action may shape the formation of *de facto* political power. In addition, the model does not evaluate the possibility that different institutional forms (e.g. formal society institutions versus institutions of community) could result in several equilibrium outcomes.

The Model

Community will be defined here as a group of people with a *common bond of solidarity* who engage in *cooperative social interaction* through *interpersonal networks*. Community tends to play an important role in shaping preferences and incentives through informal mechanisms, including norms, conventions, and sanctions. Shared norms and networks help facilitate information flows and thus lower coordination costs. Communities aggregate and give voice to preferences, and therefore can facilitate 'local' collective action.

Society refers to the formal laws and norms that establish the ground rules for how individuals and groups interact and transact. By establishing and enforcing the 'economic rules of the game' (North 1996), societal institutions reduce uncertainty about the likely behaviour of others, and in doing so, facilitate anonymous and transparent forms of collective action. In contrast to the more restricted and sometimes interpersonal foundations of community, society enables cooperation through transparency of rules and confidence of their enforcement. This has a direct impact on economic efficiency, investment and exchange, and productivity.

The model posits that when community and society are in favourable interaction they potentiate the positive incentives of each force whilst acting as a 'check and balance' against the emergence of the negative or inefficient incentives that are inherent in each. The beneficial effects of community are maximised only when the moral hazards of agents are constrained by the 'responsibility' actors are encouraged to assume by virtue of well-enforced societal rules. Similarly, the beneficial effects of society are maximised only when active communities mobilise preferences to give voice ('autonomy') to individuals who would otherwise go unheard. As a result, optimal socioeconomic outcomes are seen to result when community and society are both strong and in relative balance with one another.

 Three main categories of functional institutions are considered: *microeconomic efficiency*, *social policy*, and *problem solving*, as shown in Figure 1. These institutional foundations, or preconditions for growth, are derived from Storper (2005)[1].

Insert Figure 1 around here

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[1] Which is in turn derived from Rodrik (1998)

The degree of confidence that individual actors have in the long-term *microeconomic* environment determines the level and nature of their participation in the functional institutions of the economy (e.g. labour markets, capital markets, innovation networks). Confidence will of course be directly affected by macroeconomic conditions, sectoral structures, and other relatively transitory economic and political factors. However, confidence in the fundamental transparency, fairness, and efficiency of the economy will, we argue, be stronger and more durable when it derives from the interplay of strong communities and strong overarching rules [2]. Where community is strong, shared norms and conventions are likely to lower transactions costs. This will increase economic efficiency and may encourage higher levels of entrepreneurialism and incremental innovation. However, where such networks are defined by exclusionary community boundaries, they may also reduce broad labour market participation, encourage rent seeking, limit the growth of firms beyond a certain level, and restrict the potential for more radical innovation. Where society is strong, there will tend to be higher levels of transparency of exchange and limits to moral hazard, which should stimulate labour market participation and promote well-functioning markets. However, this may result in high transaction costs.

Economic development over the long term is likely to require some degree of acceptance as to the 'fairness' of distribution by the broad society. For the present purposes, s*ocial policy* foundations refer to distribution of economic gains. Whilst the size of the pot will vary significantly over time, the mechanisms by which decisions on allocating it are relatively enduring and stem from the community and society interaction. Where communities are too strong, excessive corporatism and unwillingness to distribute benefits outside the group will outweigh the benefits of group voice (over the babble of individual agents), and the possible

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[2] Note that the outcome of community and society in this regard will also be a critical factor shaping the expectations of reward.

efficiencies of intra-group redistribution are likely to be undone (Storper 2005). On the other hand, though social rules and norms offer a form of discipline against in-group cronyism, society without dynamic groups will generate distribution that favours strong individuals over weak ones and lead to possibly untenable levels of inequality.

Sitting at the centre of the model are *problem-solving* institutions, which structure the 'terms of engagement' governing economic relations amongst individual actors. As no institutional arrangements solve all problems for good (Storper 2005), what is critical is how problem-solving institutions adapt to reflect ongoing changes in contexts and preferences. North's idea of 'adaptive efficiency' (North 1990) – the ability of institutions to flexibly adjust in the face of political and economic shocks and evolutions – is the outcome of problem solving arrangements. Where community is strong, coalitions will form to give voice to alternative positions and facilitate resolution of conflicts. However, without societal rules to limit group power and facilitate inter-group mobility, exclusionary interest groups may result in sclerotic institutions and entrenched elites. Similarly whilst stronger societal rules help to overcome group inertia and principal-agent dilemmas, on their own they are likely to be highly inefficient in brokering problem resolution across heterogeneous interest groups.

3. **Empirical Strategy and Data**

Model specification

In order to test the relationships hypothesised above, the following model is used:

$$Y_{it} = \alpha + \beta_1 C_{it} + \beta_2 S_{it} + \beta_3 X_{it} + \varepsilon \qquad (1)$$

Where:

Y   denotes a series of dependent variables that represent the problem-solving capacities, the micro-economic institutions, and the social policy characteristics of the territories being analysed;

C   represents a series of variables depicting community;

S   represents a series of variables depicting society;

X   represents a series of control variables, which include the technological frontier of a country and a dummy for ex-Communist regimes;

α and β are the coefficients;

ε is the error term;

and i and t denote the country and the time period, respectively.

Each of the elements included in the model is now described in greater detail. Full details on the data used for each variable is included in the Appendix (Table A1).

<u>Dependent variables</u>

The dependent variables are organised around three institutional domains: problem solving, microeconomic efficiency, and social policy. The first set of problem-solving variables focus on *trust and confidence*. Trust matters from an economic standpoint because it is critical to cooperation. Virtually all economic transactions require agents to rely on the future actions of others, thus introducing risk and/or uncertainty. Norms, networks, and reputation can facilitate trust by providing agents with information about how other agents are likely to behave, and by introducing a recognised, 'calculable' regime of monitoring and sanction.

Where trust is present, transaction costs are reduced by lessening the need for negotiation, monitoring, and enforcement. Trust is also fundamental to problem solving, as it supports the willingness of groups to make short-term sacrifices, thus enabling society to take decisions on the distribution of resources (Fukuyama 1996). Trust is directly linked with confidence, and together they determine the level and quality of participation in both economic and socio-political domains.

Generalised trust (*trust*) is reflected by the standard World Values Survey (WVS) variable, which is employed in most of the social capital and trust literature. The data are based on answers to the question "Generally speaking, would you say that most people can be trusted, or that you cannot be too careful?"; from this we measure the share that responds "most people can be trusted". Despite some criticisms of its appropriateness (c.f. Glaeser et al 2000), trust scores from WVS have been shown to be stable over time (Uslaner 2002; Bjornskov 2005) and strongly coordinated with trust measures derived from wallet-drop experiments (Uslaner 2002). Data on confidence (*confinst*) refer to citizens' confidence in the institutions of government, and is also taken from WVS.

The second set of problem-solving dependent variables measures *conflict resolution*. The variable legal conflict (*confl_leg*) is designed to measure the degree to which interpersonal conflicts are resolved through the courts versus informal resolution mechanisms. As no cross-country data on actual caseloads is available, a proxy that has been used in previous research is the number of lawyers in a society, as estimated via the number of law graduates as a share of total university graduates as per Magee (1992). Data are taken from an unpublished dataset provided to us by the UNESCO Institute of Statistics. Socio-political conflict (*confl_socpol*) is derived from the *State Failure Taskforce* dataset (Goldstone et al 2000), which tracks

internal and external conflicts across countries. Finally, political stability (*polstable*) is sourced from the indicator in the World Bank's *Governance Matters* dataset.

Dependent variables for micro-economic efficiency cover the concepts of *participation, and entrepreneurship and innovation*. Labour force participation (*labpart*) comes from the International Labour Organisation's *KILM database*. Entrepreneurship (*entrep*) is taken from the Opportunity Entrepreneurship Index of the *Global Entrepreneurship Monitor* (2003). The index combines survey responses and economic data to estimate overall entrepreneurial activity in each country, and then subtracts from this entrepreneurs who are forced into establishing their own business due to socio-economic conditions, in order to isolate an index of entrepreneurship that more closely fits traditional Schumpeterian or Kirznerian definitions. Note that entrepreneurship data are available from only 68 of the 116 observations in the sample. Innovation (*innov*) is proxied by a measure of patents awarded, based on data from the World Intellectual Property Organisation. We then construct a variable for the average annual number of patents awarded (during the period 2001-2004) per US$1m in GDP, in order to control for the strong correlation between patent awards and GDP.

Finally, dependent variables on *social policy* measure public goods provision, redistribution, and investments in tertiary education. Government expenditure on health and education as a share of GDP serves to proxy for public goods provision (*pubgoods*), with data taken from the World Bank's *World Development Indicators*. Redistribution (*redist*) measures social security expenditures as a share of GDP, and comes from the ILO's *World Labor Report*. Enrolments in tertiary education (*tertedu*) indicate the degree to which social policy promotes individuals to invest in education.

<u>Community variables</u>[3]

Community is operationalised as the nature and strength of association, both formal and informal, along the lines of Putnam (1993, 2000). However, we define community by what it is – networks of relations – rather than by what it does – produce social capital – as per Woolcock (2001) and Sobel (2002). Specifically we stress four basic dimensions of community: *formal associationalism, informal associationalism, local identity, and structure*.

Formal associationalism is measured through formal membership in groups or organisations. Our data on associationalism is indicated by the World Values Survey (Inglehart et al 2000), a study on norms and values across many countries in the world. To date, the survey has comprised four waves beginning in 1981 (1981-84, 1989-93, 1994-1999 and 1999-2004). Although a number of problems with the data are well known – including limited country coverage, question and data inconsistency, and differential response bias (c.f. Danielson and Holm 2002) – the survey is recognised as the best and probably only reasonable source for making comparisons of values and perceptions across countries and over time. It has become the primary source of data for much of the literature on social capital and trust (c.f. Knack and Keefer 1997; Knack 2003; Beugelsdijk 2005; Bjornskov 2006) and for the links between culture and economic and political outcomes (c.f. Inglehart and Norris 2003; Tabellini 2005). Data are taken from the second wave (1989-1993) for the 1990 panel and from the fourth wave (1999-2004) for the 2000 panel. In some cases, data from the second wave is unavailable or of poor quality; in these situations the earliest available data are used, in most cases from the third wave (1994-1999).

Previous empirical studies distinguish different types of associational activity: 'Putnam' groups (generally civic groups), 'Olson' groups (groups which may have an open or vested

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[3] The descriptive statistics for all independent variables are included in Table A3 in the Appendix.

economic or political interest), and 'religious' groups. We follow Beugelsdijk and van Schaik (2005) in defining Olson groups (*mem_ols*) as including: trade unions, political parties or groups, and professional associations. In defining Putnam groups (*mem_put*), we diverge somewhat from the Beugelsdijk and van Schaik (2005) and instead follow Knack (2003), by excluding membership in religious organisations. Religious organisations may exhibit substantially different group behaviour from the types of civic organisations envisaged by Putnam, and therefore religious membership (*mem_rel*) is considered separately. The impact of different types of groups on outcomes will depend on the nature of the outcome to be tested. Specifically more instrumental associations (typically found in Olson groups) should have a greater direct impact on outcomes related to microeconomic efficiency, whilst Putnam-type memberships are more likely to impact economic outcomes indirectly, through problem-solving institutions.

The second component of community is *informal associationalism*. Most researchers recognise that not all (and some argue not a lot) of what drives collective action and shapes community bonds is derived from formal association. Yet data constraints restrict comparative empirical research on informal relations. Much of the literature on industrial districts, 'knowledge spillovers', and innovation in regional economies (c.f. Saxenian 1994; Cooke and Morgan 2000; Gertler 2003) emphasises the importance of group norms and the flow of tacit knowledge through informal networks. Informal relationships will have a substantial impact on the functioning of institutions, as domains not only for knowledge sharing, but also for structuring incentives, reproducing norms, and imposing sanctions. Even more so than with formal institutions, it is not simply the existence but rather the nature or type of informal relationship that matters most. In this regard, informal relations with friends ('bonding' relationships) should be distinguished from relationships with professional colleagues and acquaintances (more instrumental, 'bridging' relationships). Data on informal

association are also taken from the World Values Surveys. Specifically, survey respondents are asked to state the frequency which they engaged different activities during leisure time including "spending time with friends" (*inf_bond*) and "spending time with work colleagues" (*inf_bridge*).

The third element of community is the degree to which citizens identify themselves as part of a *local* community. Local identification may well support the creation and sustaining of norms (and possibly of path dependency), and may also have a significant impact on political processes, and thus on social policy and problem solving institutions. Data are from the World Values Survey, taking responses to the question "To which of these geographical groups would you say you belong to first of all? And the next?" – respondents were given the following choices: *locality, region, country, continent, world*[4]. Our variable *local* is based on the percentage of respondents in each sample that selected "locality" as their first choice.

Finally, the basic structure of community is reflected in the degree of *ethnic and linguistic heterogeneity*. Whilst some researchers (c.f. Stoll 2005) argue that class and religion are more important for determining identity, ethnicity and language represent a key feature around which communities form, and may proxy for the latent or informal expressions of community that cannot be adequately captured through other measures. Our variable for community structure is the measure of ethnolinguistic fractionalisation (*elf*). We use the dataset of Roeder (2001), which calculates fractionalisation as of 1985, based on the formula developed by Taylor and Hudson, which has been used extensively in empirical studies (c.f. Mauro 1995; Easterly and Levine 1997; Alesina et al 2003).

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[4] Note that the terms used varied by survey location and year (e.g. "EU" was used in place of continent, and in some cases "neighbourhood" in place of locality)

<u>Society variables</u>

Society variables refer to what North (1990) defines as 'constitutional rules',

the…"'superstructure' which determines the general character of the political order… and

regulates the process of making ordinary law" (Harper 2003). Five aspects of society are

considered: the environment in which rules are made and enforced; the level of formalisation

of the rules, laws, and procedures governing contracts; institutional constraints on economic

and political power; the degree to which inter-group mobility is facilitated; and the

institutional promotion of political voice and participation.

The first component of society measures the overall environment in which rules are made and

enforced. This combines the meta-institutions of property rights and the rule of law. These

measures have been used extensively in the institutions and growth literature; indeed they are

identified by much of the literature as being the fundamental institutional pre-conditions for

economic growth (Rodrik, Subramanian, and Trebbi 2004; Acemoglu, Johnson, and

Robinson 2006b). A single variable (*rulesenv*) is constructed via principal components

analysis on one measure of property rights, from the IRIS 3 / ICRG dataset and from the

Heritage Foundations *Index of Economic Freedom*, and two measures of the rule of law, from

IRIS 3 / ICRG and from the *Governance Matters* dataset[5]. The rules environment should be

the strongest component of society and should be relevant across all three institutional

domains.

The second variable considers the degree to which contracting institutions are formalised.

The level of formalism of the judiciary (*judform*), is derived from Djankov et al (2002) and

used as in Acemoglu, Johnson, and Robinson (2006b). This variable is particularly suited to

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[5] One component was extracted; the initial component loaded with an Eigen value of 2.63 and explained 87.7% of the variance

our research as it has been defined in opposition to an informal, 'neighbour model' of justice, which can be seen as the 'community approach' to addressing contractual disputes. It is important to note here that formalism has no particular normative value in our framework – formalism may offer transparency but its cost may well be reduced efficiency and corruption. We use it merely to represent a formal, procedural approach to managing economic relations.

The third component looks at the degree to which governments have structural limits (or 'checks and balances') on the free hand of those in power, both politically and economically. The Polity IV Executive Constraints indicator measures limits on political power (*exconst*) - this is a proxy for the existence of a broader system of checks and balances. It has been used widely in the institutions literature. Limits on the exercise of power by elites are expected to have a direct impact on problem solving institutions, particularly higher-order institutions like property rights and the rule of law, and on levels of corruption. Controls on the concentration of economic power are also critical to enable widespread participation in economic life. Our variable (*complaw*) looks at the existence and enforcement of competition, or 'anti-trust', law. Cross country datasets on competition law are limited – we use a new dataset from Voigt (2006) that captures the breadth and depth of de facto competition law across a large set of countries. Higher levels of competition law should promote higher firm start-up rates and higher levels of innovation.

The fourth component measures the degree to which formal rules and informal norms of society facilitate social or intergroup mobility. In our framework, this is a critical determinant of bridging in society, as the possibility of exit imposes 'disciplining effects' (Storper 2005) on groups, limiting the scope of potential principal-agent dilemmas. Its impact is likely to be strongest on problem-solving institutions, but it may also have a direct impact on micro-economic outcomes, for example supporting higher levels of innovation and facilitating the

growth of firms beyond an SME level. Group mobility is a function both of formal societal rules and the broader norms and beliefs that have developed across society over time. Therefore, we look at three specific variables: 1) Public education expenditure as a share of GDP; 2) World Values Survey data on tolerance toward outgroups; and 3) World Values Survey data on acceptance of inter-marriage across race, religion, and class. A principal components analysis was conducted on the two variables to generate the variable *socmobi[6]l*.

Support for voice is measured as the degree to which the political process is institutionally structured to facilitate broad participation, particularly of minority parties or groups. Data come from the Polity IV Political Competition indicator (*polcomp*), which measures the degree to which participation in the political process is institutionalised, and competition maintained to ensure a relatively level playing field for all groups.

The final component refers to the structure of society, as measured by the degree of heterogeneity in preferences across members (*hetpref*). The greater degree to which preferences are shared, the more likely a society will be to agree to the rules by which they will be bound, and therefore the greater will be the strength and enforcement of these formal rules across all domains. Data are taken from Ostling and Lindqvist (2006), who derive a measure of social cohesion based on responses to World Values Survey questions regarding broad positions on economic policy fundamentals (e.g. importance of equality of income, importance of competition, etc.).

Empirical strategy

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[6] One component was extracted; the initial component loaded with an Eigen value of 1.21 and explained just over 40% of the variance

Following common practice of research in this area (and partly as a consequence of limited data availability), the framework is tested with ordinary least squares regressions to compare pooled sets of cross-country data. Our dataset consists of fifty-eight countries, with data for each country captured in two time periods (therefore a maximum of 116 observations). Country coverage is limited mainly by data availability for the community independent variables. The dataset is weighted toward developed countries and toward Europe, although it does include a number of middle and lower middle income countries across all continents [For a list of the countries covered in the analysis, see Appendix Table A2].

The dataset includes two periods of observations, which are pooled in the regressions: a '1990 panel' and a '2000 panel'. Wherever possible, the data for both the independent and dependent variables in each panel are taken from its eponymous year (i.e. data on variables for the 1990 panel are taken from 1990).

Each of our dependent variables is tested in four stages. In the first stage, community variables are regressed alone against the dependent variable. In the second stage, society variables are regressed alone. The community and society variables are then combined and regressed together against the dependent variable. Finally, two control variables are added to the regression. These are the position of the country relative to the technology frontier[7] (*kintensity*), as defined by Hall and Jones (1999), and a dummy variable denoting ex-Communist countries[8]. Note that per capita GDP was originally included as a control, but was subsequently dropped as it was found to cause multicollinearity. In particular, there is a strongly self-reinforcing relationship between GDP per capita and the societal rules environment (*rulesenv)*. In most cases GDP appears to proxy for the quality of the rules

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[7] As per Aghion and Howitt (2005), we expect a country's position relative to the technology frontier to be important for determining what type of functional institutions are appropriate.
[8] More than one-third of the countries in our dataset of former Communist countries in Europe and Central Asia.

environment, rather than the other way round as is often suggested in criticisms of the institutions literature (Aghion, Alesina, and Trebbi 2002; Edison 2003; Glaeser et al 2004).

4. <u>Results and interpretation</u>

Both community and society matter in determining the problem-solving capacity, the microeconomic efficiency, and the social policy of our sample countries. Three broad cases emerge from the analysis: those where different forms of community have the strongest effect, those where different forms of society have the strongest effect and those where the community and society have relatively equal effects. In all cases, however, community and society in combination yields the greatest impact. Some patterns in terms of when each of these cases emerge and which variables of community and society matter most, become clear in the analysis. Results are reported below for each group of dependent variables.

Problem-solving: Trust and confidence

Table 1 shows the results of the regression models against the dependent variables of *trust and confidence*. It shows that, although society variables have greater explanatory value overall, a number of community values are strongly significant. The combination of community and society in model 3 shows substantially greater explanatory power than either of the independent models, and many of the significant society variables strengthen in combination with society, suggesting that society may reinforce community.

Insert Table 1 around here

Virtually all community variables show a significant association with trust. 'Mechanical' identity-based aspects of community (e.g. fractionalisation, religious membership, and the amount of time spent with close friends) are associated with lower levels of trust. In contrast, aspects of community that can be described as more instrumental in nature, including both Putnam and Olson membership and informal bridging, are associated with higher levels of trust. Overall, these findings support the Putnam thesis that 'membership matters', in line with Beugelsdijk and van Schaik (2005) but in contrast to several other studies (Zak and Knack 2001; Knack 2003; Beugelsdijk and van Schaik 2004) which see no evidence of a significant role for associationalism. But the results suggest that what really matters is not association per se, but with whom you associate (Uslaner and Conley 2003). Higher levels of generalised trust are strongly associated with the presence of formal and informal groups with instrumental aims (whether civic, economic, or political in nature). One explanation may be that generalised trust is necessary for members of these groups to engage in 'weak tie', bridging relationships. And positive experiences in engaging in such relationships are likely to further reinforce trust. Our results may be at odds with the Olson hypothesis itself, which would predict that members of instrumental groups exhibit high levels of particularised trust, but at the expense of generalised trust across society. Finally, we find no systematic relationship between fractionalisation and trust, in line with Knack and Keefer (1997) and Knack and Zak (1998), but in contrast to others (e.g. Bjornskov 2005, 2006; Uslaner 2006).

Amongst society variables, higher levels of trust are strongly related to the overall rules environment, indicating the importance of secure property rights and the rule of law in supporting generalised trust. This is consistent with the argument that a robust rules environment levels the playing field amongst individuals and raises individuals' confidence in the likely behaviour of their exchange partners (Nannestad and Tinggaard 2005). In doing so, it "encourages citizens to take small risks with others that facilitate their learning who is

reliable, even trustworthy, and how to distinguish the reliable from those who are not" (Cook, Hardin, and Levi 2005, p.55). Generalised trust is also associated with social mobility, suggesting that an environment which supports mobility creates the conditions for greater bridging, enabling the network effects of trust to be realised.

Confidence in institutions varies positively with instrumental membership and a negative association with identity-based association, in particular religious membership[9]. This goes against the results of Norris (2000) who finds no relationship with between measures of social capital and institutional confidence, and Norris and Inglehart (2004) who argue for a strong, positive association between religious participation and institutional confidence in the US. In our results, confidence is also strongly, and positively associated with fractionalisation, which may in part indicate a greater perceived need for societal institutions in an environment of heterogeneous communities. In contrast, most society variables vary inversely with confidence in institutions. This could mean that the greater the strength or pervasiveness (beyond a certain minimum level) of societal institutions, the less confidence citizens have in them, and reminds us of the argument of Dalton (2004) that the process of democratic modernisation is linked to a declining confidence in the institutions of government. Overall, whilst society tends to reduce confidence in institutions, most aspects of community have the opposite effect. Thus, in the absence of community, individuals may face a an overly-bureaucratic relationship with the state "Leviathan;" but by aggregating individual preferences, community offers a mechanism by which individuals can have their voice heard and thus engage more effectively with institutions.

Problem-solving: Conflict resolution

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[9] Note that Putnam membership shows significance only at 0.116 in model 3 and 0.155 in model 4.

Table 2 shows the results of the regression models against three dependent variables related to conflict resolution: legal conflict, socio-political conflict, and political stability. As with trust and confidence, our society models have somewhat greater explanatory value than our community models; however, several community variables are significant. Models combining community and society provide substantially greater explanatory power than those where just one of these forces is modelled. Scatterplots of community associationalism against conflict show that, at low membership levels, both high and low levels of conflict are evident; however, at high levels of membership, levels of conflict are low and stability high (Figure 3). Whether this link is causal, or whether it is stability which catalyses greater associationalism, it has in any event received little attention in current research on social capital. This finding also abates concerns that group membership may accentuate in-group out-group distinctions (Stolle 1998; Uslaner and Conley 2003) and raise the potential for conflict.

Insert Table 2 and Figure 2 around here

Looking first at the findings for legal conflict, two community variables (informal bridging and Putnam membership) and two society variables (the rules environment and executive constraints) have significant associations with lower levels of legal conflict. All four variables strengthen in combination, suggesting that informal, instrumental relationships built on micro trust may be a complement for formal mechanisms to limit conflict, particularly in situations of complexity and uncertainty (Beugelsdijk 2005). Constraints on power and a robust rules environment may encourage compromise through informal mechanisms, reducing the need to resort to legal procedures. Interestingly, at higher levels of capital intensity (i.e. nearer to the technology frontier), legal conflict is lower. This again may

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indicate the importance of informal mechanisms for conflict resolution in environments of uncertainty.

Higher levels of socio-political conflict are associated with two significant, identity-based community variables – local identification and fractionalisation. The society variables of *rules environment* and *political voice*, by contrast, are linked to lower levels of conflict. These results are in line with most of the literature on conflict and institutions (c.f. Easterly and Levine 1997; Rodrik 1998; Easterly 2000a; Easterly, Ritzen, and Woolcock 2006), which find fractionalisation to be strongly associated with higher conflict, and democratic governance with lower conflict. Surprisingly, however, heterogeneity of preferences, which should indicate a latent potential for conflict, is related to lower levels of conflict in our model. Along with the results on fractionalisation it suggests the interesting conclusion that perhaps it is not the clash of ideals that leads to conflict but rather that of identity.

Finally, the political stability analysis shows that whilst Olson membership varies positively with higher levels of political stability, Putnam membership and local identification are associated with lower levels of stability. Highly mobilised special interest groups (Olson) therefore may not have a destabilising political effect, because they operate most effectively in stable political environments. The findings on Putnam groups could be interpreted either as suggesting a strong impact of groups organised around civic issues on political processes, or with the causality running the other way, that Tocquevillean-type social groups may form as an alternative to government in an environment of instability. Significant society variables in the model again indicate the importance of the rules environment and executive constraints in supporting political stability.

Micro-economic efficiency

Table 3 shows the results of the regression models against our dependent variables related to micro-economic efficiency: labour force participation, entrepreneurship, and innovation. In most cases, community variables have slightly greater explanatory power than those of society, but in all cases the combination of the two is substantially stronger, suggesting a reinforcing relationship. Membership in Olson organisations is most significantly affected, showing an association with positive outcomes across all three variables.

Insert Table 3 around here

Turning first to labour force participation, there is evidence of a strong, positive link to Olson membership. Informal bridging is also found together with higher labour force participation, but the causality here is almost certainly reversed – if one is not participating in the labour force it is unlikely he or she will have professional associates with whom to spend time. This same logic is likely also to be at least partly responsible for the negative relationship between informal relations with friends and participation. These findings for community appear to fit closely with theories of strong and weak ties (Granovetter 1973), and the role of community social networks (Uzzi 1999) and formal associations (Aguilera and Bernabé 2002) in providing access to economic opportunities, or in limiting those opportunities when networks are too narrow. Olson-type membership organisations in particular are generally larger, more diverse, and more instrumental in nature, facilitating much greater opportunity for referral (McPherson and Smith-Lovin 1982). The most significant society variable – competition law – suggests that where societies limit the concentration of economic power and promote a level economic playing field, higher participation results.

The results for entrepreneurship are affected by the limited number of observations available. Only two variables are significant in the full regression model on entrepreneurship: Olson-type group membership and judicial formalism. Olson membership is associated with higher levels of entrepreneurialism. This fits well with theories of weak ties (Granovetter 1973) and the possibility of such instrumental groups providing 'structural holes' (Burt 1995) through which members may gain access to valuable resources and networks (Aldrich and Zimmer 1986; Saxenian 1999) to facilitate entrepreneurialism. The positive association between entrepreneurialism and fractionalisation hints at the possibility that where social structures are fragmented, in-group (often ethnic-based) entrepreneurial networks offer individuals economic opportunities that are unavailable to them in the wider society (c.f. Waldinger 1997; Saxenian 1999). Of the society variables, only formalism has a significant (positive) association with entrepreneurship. This is in direct contrast to Harper (2003) who argues that common law (as opposed to civil law, which is strongly associated with higher formalism) provides entrepreneurs with greater certainty, and Licht and Siegel (2006, p.19) who argue that "nimble courts lead to beneficial outcomes".

Turning to innovation, higher levels of innovation are strongly co-present, with both Olson and Putnam membership. As with entrepreneurialism, this is consistent with the notion that instrumental associations facilitate knowledge spillovers, and thus innovation, by bridging 'structural holes' in networks (Burt 1995). Still, we expected to uncover stronger links between innovation and informal networks. Though this result is consistent with network theory, that strong ties are ineffective in promoting instrumental outcomes, it is less clear, about the notion in the innovation literature that strong ties are critical for promoting radical innovation (Larson 1992; Uzzi 1997; Morrison and Rabbelotti 2005), since it is hard to know whether formal Putnam and Olson groups represent strong or weak ties.

In terms of society variables, higher levels of innovation are associated with greater constraints on economic power (competition law) as well as a stronger overall rules environment. This is directly in line with Knight's (1921) version of entrepreneurship, indicating that where societal rules create the incentive to realise profit opportunities through productive endeavours, innovative activities are likely to be undertaken, but where the most sustainable profit opportunities arise from rent seeking, entrepreneurial energies are likely to be diverted to non-productive ends. Finally, formalism appears to have no significant negative relationship to innovation, which goes against the conventional wisdom that bureaucratic governments stifle innovation. Instead, it seems that opportunity is more important for innovation (through limiting economic concentration and promoting competition), access to active networks, and, most likely, confidence in a stable macro environment, irrespective of the governmental or judicial regime.

Social policy

Table 4 shows the results of tests of social policy variables: public goods provision, redistribution, and investment in tertiary education. Here the combination of community and society models is most powerful, although it is unclear whether community and society reinforce each other in determining social policy outcomes. Several community and society variables appear to have opposing impacts on the dependent variables; for example, they are associated with higher levels of public goods provision but lower investment in tertiary education, or vice versa.

Insert Table 4 around here

Olson membership, informal bonding relationships, and local identification are strongly linked to higher public goods provision, whilst informal bridging is strongly associated with lower public goods provision. There are several interesting aspects of these findings. First, informal relations have the strongest association with public goods. Second, the direction of their influence is opposite to what we have seen elsewhere. In most cases informal bonding is associated with 'negative' outcomes and bridging with 'positive' ones; here they are reversed. Similarly local identification has in most cases been connected to negative outcomes, but here appears to facilitate greater public goods provision. Our findings on Olson groups are in direct opposition to the Olson hypothesis, which suggests that such interest groups lead to an underproduction of public goods. The strong positive variation between bonding communities and public goods may challenge neo-Tocquevillean accounts of social capital, which view communities as alternatives to the state for the provision of public services. Overall, these results support our contention that communities play a key role in aggregating and voicing preferences, thus allowing for more efficient matching of preferences with public goods provision.

Results for our society variables indicate that social mobility has the strongest association with higher public goods provision, in line with experiments by Erhart and Keser (1999). It may be that group mobility checks the potential negative distributional consequences of community. Moreover, neither fractionalisation nor heterogeneity of preferences are significant in the combined models, in contrast to Alesina, Baqir, and Easterly (1997) and Easterly and Levine (1997) who argue that the existence of competing groups reduces the provision of public goods.

Income redistribution is positively associated with Putnam membership and negatively with religious membership. There is also some indication (in models 1 and 3) that Olson membership and informal bridging may lead to higher levels of redistribution. However, no

society variables remain significant in model 4, although a strong rules environment is found with with higher levels of redistribution, whilst heterogeneity of preferences is found with lower levels. Overall our findings support the role of instrumental association – both formal and informal – and the arguments of the social capital literature.

Finally, higher levels of tertiary enrolment are related to greater informal bridging and fractionalisation; whilst, perhaps surprisingly, Olson membership is in evidence along with lower enrolment (the only case in which Olson membership is associated with a 'negative' institutional outcome). The society variables of political competition, social mobility, and the rules environment are positively associated with enrolment, whilst heterogeneity of preferences varies negatively with it. All seven significant variables strengthen in the combined model, indicating that society and community may strongly reinforce each other.

5. **Conclusions**

In spite of the data limitations that any study on institutional factors must tackle, our analysis provides broad support for the idea that community and society, whether taken individually or in interaction, help shape the institutions that, in turn, underpin long-term economic development.

Aspects of both community and society are strongly and significantly associated with outcomes across all three institutional domains. In addition, in a number of cases, there is evidence to suggest that community and society may reinforce one another, helping to counteract the potential negative consequences of each in isolation, and potentiate each other's positive outcomes. On the specific issue of trust, the model provides some evidence of

how North's concept of adaptive efficiency (North 1990) may be determined in economic institutions. The strong associations with generalised trust indicates that community and society are particularly important determinants of trust, and suggests that trust may play an even greater role in shaping economic outcomes than is recognised in the current growth literature.

Different aspects of community and society matter for different institutional domains. More instrumental associations (typically found in *Olson groups*) seem to have a greater impact on outcomes related to economic efficiency, whilst *Putnam groups* are more likely to influence problem-solving institutions. However, Olson groups also tend to be significant in shaping outcomes in the areas of trust and public goods provision, whilst Putnam groups are also relevant for promoting innovation and redistribution. More specifically our findings suggest that one form of community facilitates 'getting by' and another reinforces 'getting ahead'. Both operate in environments of high uncertainty, but they appear to function at opposite ends of the technology frontier.

Our analysis also confirms that *informal relations* with colleagues and acquaintances (more instrumental, 'bridging' relationships) are more likely to affect institutional outcomes than informal relations with friends ('bonding' relationships). Informal bonding is in most cases insignificant or associated with negative institutional outcomes, whilst bridging, by contrast, is significant across all three institutional domains. The main exception is the case of public goods provision, where the association with informal bonding is found to be significant and positive. This suggests the possibility that such relationships facilitate collective action for political ends. Moreover, *local* identification may well support the creation and sustenance of norms (and possibly of path dependency) and political processes, and thus influence social

policy and problem solving institutions. The only exception is, once again, public goods provision, where it has a negative effect.

The *rules environment* – i.e. the degree to which a society has established the rule of law along with sound protection of property rights – is a powerful indicator of the effectiveness of problem-solving institutions, but appears to have only limited impact on micro-economic and social policy institutions. Formal restrictions on the concentration of economic power (*competition law*) is critical to microeconomic efficiency, whilst laws promoting *political competition* have a significant, if somewhat ambivalent, association across both social policy and problem-solving domains. Finally, *social mobility* has an impact on the provision of both social policy and problem-solving institutions*,* as it is positively linked to trust, legal conflict, public goods, as well as investments in education.

The structures of community and society – as indicated by *fractionalisation* and *heterogeneity of preferences* – have the greatest influence on problem-solving institutions, with somewhat less influence on other institutional domains. Interestingly, however, their impacts are not always negative, nor do they always shape outcomes in the same direction. This suggests that diversity of culture and preferences may be very different forces, and that both are complex structural factors whose impact on socioeconomic depends strongly on the context of the community and society in which they operate.

This first attempt to operationalise and test the impact of groups and formal rules on macro level outcomes opens a number of areas for future research. An important next step will be to move beyond the institutional domains considered here and trace further how they go on to shape long-run economic development outcomes, including income levels, income growth, and income distribution. As noted above, further research will need to focus on understanding

how community functions differently in various socio-economic contexts. Additional light must also be shed on the links between community, society, and generalised trust, which could help us better understand the link between social capital and economic growth. Finally, as additional data on community becomes available from ongoing social capital research, more robust models should be possible. In any event, the research reported here supports our main contention, that society and community cannot be adequately understood in isolation from one another, and that the cleavage in social science theory and research that currently exists is no longer productive.

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Appendix

Table A1: Definitions of variables

	Concept	Variable	Description	Source
Community independent variables	Membership and associationalism	mem_put	"Putnam-type membership": % belonging to: social, local/community, arts/education, youth, sports, 3rd world, environment, women, peace, and health organisations	World Values Surveys, access via: http://www.worldvaluessurvey.org/
		mem_rel	% belonging to religious organisations	see World Values Surveys
		mem_ols	"Olson-type membership": sum of % belonging to: political parties, labour unions and business associations	see World Values Surveys)
	Informal association	inf_bond	Amount of time spent with friends. Respondents were given four options: "weekly", "once or twice per month", "a few times a year", or "never". The percentage responses for each sample across the four categories were then converted to average annual frequency for each unit[10]	see World Values Surveys
		inf_bridge	Amount of time spent with work or professional colleagues; calculated as per "inf_bond"	see World Values Surveys
	Local attachment	Local	% of respondents noting "local area" as 1st geographical group of belonging, based on responses to the question: question "To which of these geographical groups would you say you belong to first of all? And the next? – locality, region, country, continent, world"	see World Values Surveys
	Structure	Elf	Ethno-linguistic fractionalisation; measures the probability that two randomly drawn individuals from a given country do not belong to the same ethno linguistic group; based on Taylor & Hudson	Roeder, Philip G. (2001) "Ethnolinguistic Fractionalization (ELF) Indices, 1961 and 1985", access via: http://weber.ucsd.edu/~proeder/data.htm
Society independent variables	Rules environment	rulesenv	Principle component of: 1) Property rights (subcomponent of Heritage Foundation Economic Freedom Index); 2) Rule of law (World Bank Governance Matters); 3) Rule of law (IRIS 3/ICRG)	1.) Heritage Foundation (2006) *Index of Economic Freedom*, access via: http://www.heritage.org/research/features/index/index.cfm 2.) Kaufmann, D., Kraay, A. and Mastruzzi, M. (2006) *Governance Matters V: Governance Indicators for 1996–2005*, access via: http://www.worldbank.org/wbi/governance/govmatters5 3) Knack, Steven and Keefer, Philip (1998) IRIS-3: file of International Country Risk Guide (ICRG) data [Computer file], 3rd Edition, College Park, Maryland: IRIS [producer], East Syracuse, New York: The PRS Group, Inc. [distributor].
	Contracting institutions	judform	Index of Judicial Formalism; converted to 10-point scale and inversed. Take average of two indices: 1) assessing judicial processes involved in attempt to collect on a bounced check; 2) assessing judicial processes involved in attempt to evict a tenant	Djankov, S., La Porta, R., Lopez-de-Silane, F., and Shleifer, A. (2002) "Courts: the Lex Mundi Project", *NBER Working Papers* 8890, National Bureau of Economic Research, Inc.

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[10] This was calculated by taking the midpoint frequency of each category and converting it to an annual amount. So for example "weekly" converted to 52 (i.e. 52 times per year), "once or twice per month" to 18, a few times a year to 3, and "not at all" to 0. A weighted average score for each country was then calculated based on the response percentages across the four categories.

	Concept	Variable	Description	Source
	Limits on political and economic power	exconst	Executive constraints index: Polity IV indicator measuring the extent of institutional constraints on the decision-making powers of the chief executive in government, whether an individual or a collective executive (low=1, high=7); converted to 10 point scale	Jaggers, Keith and Gurr, Ted Robert (2002) Polity IV Project: dataset version 2002<p4v2003d>, University of Maryland, College Park, MD: Integrated Network for Society Conflict Research Program, Center for International Development and Conflict Management.
		complaw	Variable S156 from Voigt (2006), measuring the existence, nature, and scope of competition law	Voigt, Stefan (2006) "The Economic Effects of Competition Policy - Cross-Country Evidence Using Four New Indicators", Available at SSRN: http://ssrn.com/abstract=925794
	Inter-group mobility	socmobil	Social mobility: Principle component of: 1)"edupub": Public education expenditure as share of GDP; 2)"tolerance": Sum of avg. % stating no preference against having particular groups as neighbours; 3) "intermarry": Views on importance of having common background for marriage (sum stating "not very" for religion and social class)	1.) ILO (2000) *ILO World Labor Report*, International Labor Organization: Geneva. 2.) see World Values Surveys
	Support for voice	polcomp	Political competition: Polity IV indicator POLCOMP indicating the institutional regulation and competitiveness of political participation (low=1, high=10)	see Jaggers, Keith and Gurr, Ted Robert (2002)
	Structure	hetpref	Heterogeneity of preferences: data is based on the standard deviation of responses to World Values Survey questions on how people position themselves "left to right" on a 1-10 scale on the following economic policy issues: 1) general "left-right" positioning on political matters; 2) importance of equality of income; 3) private v. government ownership of industry; 4) government v. individual responsibility; 5) importance of competition	Lindqvist, Erik & Östling, Robert, 2006. "Social Cohesion," Working Paper Series in Economics and Finance 628, Stockholm School of Economics.
Problem solving institutional outcomes	Trust and confidence	trust	Generalised trust –WVS question: "Generally speaking, would you say that most people can be trusted, or that you cannot be too careful?"; share responding the former	see World Values Surveys
		confinst	Confidence in institutions of government – sum of share of responding "very" or "quite" confident in WVS following list of institutions: parliament, civil service, government, and political parties	see World Values Surveys
		conflct_leg	Legal conflict: measures the number of lawyers in society by the proxy: ratio university graduates in law to total graduates	UNESCO Institute for Statistics (2005), unpublished dataset
		confl_socpol	Social and political conflict – variable SFTPUHVL from State Failure Taskforce III dataset measuring the sum of the maximum magnitude of "events" (i.e. conflicts that are potential causes of state failure) over previous 15 years (	Goldstone, Jack A., Gurr, Ted Robert, Harff, Barbara, Levy, Marc A., Marshall, Monty G., Bates, Robert H., Epstein, David L., Kahl, Colin H., Surko, Pamela T., Ulfelder, John C., and Unger, Alan N. In consultation with Christenson, Matthew, Dabelko, Geoffrey D., Esty, Daniel C., and Parris, Thomas M (2000) *State Failure Task Force Report: Phase III Findings*. McLean, VA: Science Applications International Corporation.
	Conflict resolution	polstable	Political stability – Governance Matters dataset measure combines several indicators which measure perceptions of the likelihood that the government in power will be destabilized or overthrown by possibly unconstitutional and/or violent means, including domestic violence and terrorism	Kaufmann, D., Kraay, A. and Mastruzzi, M. (2006)
Micro-econ	Participation	labpart	Labour force participation rate (%) - measure of the proportion of a country's working-age population that engages actively in the labour market, either by working or looking for work.	ILO, Key Indicators of the Labor Market (KILM), database 4th edition, access via: http://esds.mcc.ac.uk/wds_ilo/

	Concept	Variable	Description	Source
	Innovation and entrepreneurialism	entrep	Opportunity Entrepreneurship Index (GEM) – measures entrepreneurs who started a business to exploit a perceived opportunity; (versus entrepreneurs who started a business due to lack of other opportunities, as well as non-entrepreneurs); variables takes average of all results available for sample countries between 2001-2004.	GEM Consortium (2004), *Global Entrepreneurship Monitor*, access via: http://www.gemconsortium.org/
		innov	Annual patents awarded per US$1b GDP (average 2000-2004)	UN Common Database, access via: http://esds.mcc.ac.uk/wds_un/
Social policy institutional outcomes	Social policy	pubgoods	Provision of public goods - proxied by government spending on health and education as share of GDP	World Development Indicators online database, access via: http://esds.mcc.ac.uk/wds_wb/
		redist	Redistribution- social security expenditures as % GDP	See ILO (2000)
		tertedu	Gross enrolment rate in tertiary education per 1,000 population	UN Common Database, access via: http://esds.mcc.ac.uk/wds_un/
Controls		kintensity	Capital intensity of economic output	Hall, Robert E. and Jones, Charles I. (1999) "Why Do Some Countries Produce So Much More Output per Worker than Others?", *NBER Working Papers 6564*, National Bureau of Economic Research, Inc.
		excom	Dummy denoting ex-communist countries	N/A

Table A2: Countries covered in the sample

Albania	Latvia
Algeria	Lithuania
Argentina	Luxembourg
Australia	Macedonia
Austria	Malta
Belarus	Mexico
Belgium	Moldova
Brazil	Morocco
Bulgaria	Netherlands
Canada	New Zealand
Chile	Norway
China	Peru
Colombia	Philippines
Croatia	Poland
Czech Republic	Portugal
Denmark	Romania
Estonia	Russia
Finland	Slovakia
France	Slovenia
Germany	Spain
Greece	South Africa
Hungary	Sweden
Iceland	Switzerland
India	Turkey
Ireland	UK
Italy	Ukraine
Japan	Uruguay
Korea	USA
Kyrgyzstan	Venezuela

Table A3: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
mem_put	116	2.5	215.9	58.464	37.5038
mem_rel	116	.6	71.1	17.207	16.8021
mem_ols	116	2.3	97.7	30.758	23.4937
inf_bond	116	1508	3968	2915.66	617.007
inf_bridge	116	717	3220	1445.97	468.145
local	116	18.1	69.3	41.180	11.1205
elf	116	.0030	.8860	.335448	.2388946
rulesenv	116	-1.79316	1.35333	.0000000	1.00000000
judform	116	2.0	8.4	5.372	1.2376
exconst	116	2.9	10.0	8.805	1.8676
complaw	104	.0	.9	.482	.2108
polcomp	116	1.0	10.0	8.440	2.3046
socmobil	116	-1.61382	3.55840	.1060315	.94767019
hetpref	114	1.95519	3.30917	2.5523136	.32170756
kintensity	102	.62	1.28	1.0337	.14158
excom	116	0	1	.31	.465
Valid N (listwise)	92				

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Table 1: Problem-solving – Trust and confidence

	Trust (trust)					Confidence in institutions (*confinst*)			
Model	**1**	**2**	**3**	**4**		**1**	**2**	**3**	**4**
(Constant)	6.8820 (0.89)	93.6575 (5.97)	39.8746 (2.17)	48.8228 (2.27)	—	29.5471 (3.61)	67.5142 (4.07)	31.1431 (1.40)	57.9888 (2.04)
mem_put	0.0842 (2.27)**		0.0823 (2.34)**	0.0990 (2.76)***		0.0541 (1.38)		0.0675 (1.59)	0.0682 (1.44)
mem_rel	-0.0923 (-1.08)		-0.2413 (-2.80)***	-0.2085 (-2.38)**	—	-0.2907 (-3.22)***		-0.2913 (-2.79)***	-0.3149 (-2.71)***
mem_ols	0.3503 (6.36)***		0.2402 (4.66)***	0.2156 (3.37)***		0.1098 (1.89)*		0.1151 (1.84)*	0.1474 (1.74)*
inf_bond	0.0029 (1.53)		-0.0031 (-1.50)	-0.0051 (-2.39)**	—	-0.0024 (-1.17)		-0.0011 (-0.42)	-0.0032 (-1.14)
inf_bridge	0.0011 (0.48)		0.0095 (2.96)***	0.0103 (2.96)***		0.0100 (4.06)***		0.0032 (0.83)	0.0032 (0.69)
local	0.0726 (0.70)		0.0170 (0.17)	0.0956 (0.90)		-0.0016 (-0.01)		0.1804 (1.51)	0.2290 (1.63)
elf	-15.2834 (-3.14)***		-7.8621 (-1.57)	-9.4027 (-1.83)		6.5399 (1.27)		11.9276 (1.97)*	13.0219 (1.91)*
rulesenv		8.8421 (4.23)***	9.0524 (4.75)***	7.3103 (3.42)***			3.9616 (1.79)*	5.6224 (2.44)**	3.6394 (1.29)
judform		-1.2397 (-1.12)	-0.9866 (-0.94)	-1.4658 (-1.41)	—		-0.4469 (-0.38)	-0.8472 (-0.67)	-1.5284 (-1.11)
exconst		-1.5202 (-1.72)*	-0.4584 (-0.55)	-1.4463 (-1.57)			-0.3262 (-0.35)	-0.0572 (-0.06)	-0.6749 (-0.55)
complaw		-0.7866 (-0.14)	2.5514 (0.52)	3.2947 (0.64)	—		-15.0344 (-2.56)**	-18.1616 (-3.05)***	-17.9769 (-2.62)**
polcomp		-0.9981 (-1.39)	-0.2333 (-0.32)	-0.5220 (-0.67)			-3.1423 (-4.13)***	-2.8432 (-3.25)***	-2.4695 (-2.38)**
socmobil		1.5853 (1.15)	2.6866 (1.82)*	2.6561 (1.71)*	—		-2.9217 (-2.01)**	-2.3018 (-1.29)	-2.3518 (-1.14)
hetpref		-14.2330 (-2.76)***	-4.7766 (-0.90)	-8.7787 (-1.59)			5.0729 (0.93)	12.8830 (2.01)**	8.5702 (1.17)
kintensity				17.3819 (1.50)	—				-4.9865 (-0.32)
excom				-8.7874 (-2.03)**					-5.6054 (-0.98)
Adj- Rsq	.460	.544	.684	.742		.162	.271	.337	.347
n	115	103	103	91		115	103	103	91

Table 2: Problem-solving – Conflict resolution

	Legal conflict (*confl_leg*)				Socio-political conflict (*confl_socpol*)				Political stability (*polstable*)			
Model	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
(Constant)	15.8800 (5.23)	13.6777 (2.46)	30.0378 (4.18)	46.7265 (5.76)	-10.6643 (-2.06)	-0.2812 (-0.02)	-4.9317 (-0.31)	18.2735 (0.97)	0.5488 (1.30)	1.9122 (2.71)	2.1697 (2.42)	1.7891 (1.59)
mem_put	0.0015 (0.11)		-0.0048 (-0.35)	-0.0251 (-1.86)*	-0.0144 (-0.58)		-0.0126 (-0.42)	-0.0453 (-1.44)	-0.0007 (-0.33)		-0.0046 (-2.68)***	-0.0030 (-1.62)
mem_rel	-0.0664 (-1.98)**		0.0115 (0.34)	-0.0069 (-0.21)	0.0935 (1.64)		0.0973 (1.31)	0.0594 (0.77)	0.0042 (0.91)		0.0001 (0.02)	-0.0014 (-0.31)
mem_ols	-0.0347 (-1.61)		-0.0446 (-2.21)**	0.0074 (0.31)	-0.0923 (-2.51)**		-0.1013 (-2.29)**	-0.0314 (-0.56)	0.0076 (2.54)**		0.0074 (2.93)***	0.0072 (2.14)**
inf_bond	-0.0018 (-2.41)**		0.0000 (0.04)	0.0001 (0.14)	-0.0003 (-0.24)		0.0009 (0.50)	0.0003 (0.18)	0.0004 (3.42)***		-0.0001 (-0.57)	0.0000 (-0.40)
inf_bridge	-0.0001 (-0.06)		-0.0042 (-3.30)***	-0.0065 (-4.96)***	0.0068 (4.40)***		0.0064 (2.32)**	0.0035 (1.16)	-0.0009 (-6.77)***		-0.0003 (-1.79)*	0.0000 (-0.27)
local	-0.0507 (-1.25)		-0.0132 (-0.34)	0.0256 (0.64)	0.0753 (1.09)		0.0554 (0.65)	0.1443 (1.55)	0.0036 (0.64)		0.0008 (0.17)	-0.0028 (-0.51)
elf	2.9108 (1.53)		-0.5116 (-0.26)	0.0393 (0.02)	13.8460 (4.27)***		12.7840 (2.98)***	15.8354 (3.52)***	-0.9958 (-3.77)***		-0.2928 (-1.20)	-0.2372 (-0.88)
rulesenv		-1.3798 (-1.86)*	-1.8257 (-2.45)**	-2.7008 (-3.35)***		-3.6653 (-2.26)**	-2.0266 (-1.24)	-4.5765 (-2.45)**		0.4971 (5.29)***	0.4912 (5.28)***	0.5994 (5.36)***
judform		0.4128 (1.06)	-0.0542 (-0.13)	-0.0885 (-0.23)		-0.2698 (-0.31)	0.4962 (0.55)	0.7583 (0.84)		0.0186 (0.38)	0.0172 (0.34)	0.0296 (0.54)
exconst		-0.6623 (-2.12)**	-0.7292 (-2.25)**	-0.9277 (-2.66)***		1.9303 (2.82)***	1.3403 (1.88)*	1.7863 (2.21)**		0.0263 (0.66)	0.0247 (0.61)	0.0620 (1.28)
complaw		-5.1320 (-2.61)**	-4.9061 (-2.55)**	-2.5931 (-1.32)		4.2253 (0.98)	-0.5083 (-0.12)	0.1261 (0.03)		-0.0062 (-0.02)	0.2045 (0.85)	-0.1125 (-0.41)
polcomp		-0.0783 (-0.31)	-0.5233 (-1.85)*	-0.3967 (-1.34)		-1.8346 (-3.28)***	-1.0115 (-1.63)	-1.6811 (-2.45)**		0.0062 (0.19)	-0.0117 (-0.33)	0.0023 (0.06)
socmobil		0.2902 (0.59)	0.3418 (0.59)	-0.2663 (-0.45)		0.2709 (0.25)	-0.0562 (-0.04)	-0.3729 (-0.27)		0.0421 (0.68)	0.0180 (0.25)	0.0406 (0.50)
hetpref		-0.0134 (-0.01)	-0.6032 (-0.29)	-2.0913 (-1.00)		1.0391 (0.26)	-4.9266 (-1.08)	-10.5111 (-2.17)**		-0.7358 (-3.18)***	-0.5400 (-2.08)**	-0.4446 (-1.5)
kintensity				-10.5978 (-2.42)**				-4.5644 (-0.45)				-0.6456 (-1.06)
excom				-2.7518 (-1.68)*				-5.8505 (-1.54)				0.6021 (2.65)***
Adj- Rsq	.195	.312	.424	.558	.319	.217	.337	.450	.501	.677	.736	.748
n	115	103	103	91	115	103	103	91	115	103	103	91

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Table 3: Micro-economic efficiency

	Labour force participation (*labpart*)				Entrepreneurialism (*entrep*)				Innovation (*innov*)			
Model	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
(Constant)	57.1058 (14.76)	87.8725 (8.78)	74.4755 (6.47)	72.3549 (4.99)	8.7679 (2.47)	-7.0984 (-0.79)	-11.7782 (-0.78)	-1.0507 (-0.06)	-1.6746 (-1.12)	7.5574 (2.23)	-0.2713 (-0.06)	-1.5227 (-0.30)
mem_put	0.0168 (0.91)		0.0364 (1.65)	0.0270 (1.12)	-0.0044 (-0.27)		-0.0115 (-0.63)	-0.0157 (-0.82)	0.0279 (3.90)***		0.0241 (2.99)***	0.0197 (2.29)**
mem_rel	0.0089 (0.21)		-0.0353 (-0.65)	-0.0518 (-0.88)	0.0879 (2.54)**		0.0768 (1.82)*	0.0726 (1.65)	-0.0027 (-0.16)		-0.0277 (-1.40)	-0.0179 (-0.85)
mem_ols	0.1918 (6.98)***		0.1661 (5.14)***	0.1956 (4.53)***	0.0070 (0.30)		0.0463 (1.51)	0.0578 (1.77)*	0.0432 (4.08)***		0.0436 (3.69)***	0.0490 (3.19)***
inf_bond	-0.0037 (-3.83)***		-0.0051 (-3.87)***	-0.0042 (-2.95)***	-0.0016 (-1.89)*		-0.0014 (-1.30)	-0.0014 (-1.22)	0.0007 (2.02)**		-0.0006 (-1.20)	-0.0007 (-1.30)
inf_bridge	0.0041 (3.55)***		0.0038 (1.86)*	0.0036 (1.54)	0.0017 (1.49)		0.0036 (1.57)	0.0030 (1.27)	-0.0010 (-2.30)**		0.0006 (0.87)	-0.0004 (-0.51)
local	0.0262 (0.51)		-0.0196 (-0.32)	-0.0466 (-0.65)	-0.0500 (-1.01)		-0.0306 (-0.58)	-0.0221 (-0.38)	0.0191 (0.96)		0.0062 (0.27)	0.0151 (0.59)
elf	1.3644 (0.56)		-1.0875 (-0.35)	-0.8825 (-0.25)	1.3032 (0.60)		4.0887 (1.41)	4.5527 (1.54)	-1.8585 (-1.99)**		-0.6501 (-0.57)	-1.3396 (-1.08)
rulesenv		-1.2515 (-0.94)	-0.4572 (-0.38)	-0.3683 (-0.26)		-0.4490 (-0.31)	-0.5351 (-0.36)	-0.6689 (-0.39)		1.3870 (3.08)***	1.4480 (3.32)***	0.7418 (1.44)
judform		-0.6446 (-0.91)	-0.3641 (-0.55)	-0.0526 (-0.08)		0.7561 (1.38)	1.5862 (2.73)***	1.5695 (2.63)**		-0.0493 (-0.21)	0.0047 (0.02)	-0.0192 (-0.08)
exconst		0.5560 (0.99)	0.5737 (1.10)	0.9232 (1.48)		1.2819 (2.38)**	0.6883 (1.21)	0.6346 (0.98)		-0.1971 (-1.04)	-0.1262 (-0.66)	-0.3100 (-1.40)
complaw		3.5303 (1.00)	7.8063 (2.53)**	7.7609 (2.22)**		-1.5778 (-0.48)	-0.8839 (-0.27)	-1.4395 (-0.41)		2.6982 (2.26)**	3.3431 (2.97)***	4.8729 (3.91)***
polcomp		-1.3544 (-2.95)***	-0.8952 (-1.98)*	-1.0294 (-1.95)*		-0.8968 (-2.00)**	0.2179 (0.41)	0.2671 (0.48)		0.0718 (0.46)	0.0992 (0.60)	-0.0768 (-0.41)
socmobil		1.7067 (1.94)*	1.7596 (1.90)*	1.4785 (1.41)		1.2142 (1.93)*	0.4407 (0.56)	0.3403 (0.43)		0.5388 (1.81)*	0.4550 (1.34)	0.2008 (0.54)
hetpref		-7.3419 (-2.24)**	-3.5729 (-1.08)	-3.5247 (-0.94)		2.7160 (0.95)	-0.1643 (-0.04)	-1.1617 (-0.30)		-2.1432 (-1.93)*	-0.2532 (-0.21)	-0.7842 (-0.59)
kintensity				-2.9582 (-0.38)				-7.4353 (-0.97)				7.3746 (2.65)***
excom				1.0087 (0.34)				0.7048 (0.22)				-3.4270 (-3.29)***
Adj- Rsq	0.375	0.119	0.411	0.402	0.187	0.137	0.301	0.289	.472	.438	.559	.606
n	115	103	103	91	69	63	63	63	115	103	103	91

Table 4: Social policy

|	Public goods provision (*pubgoods*)				Redistribution (*redist*)				Tertiary enrolment (*tertedu*)			
Model	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
(Constant)	4.8261 (5.13)	13.2604 (5.68)	6.6350 (2.74)	5.8796 (1.90)	9.1663 (2.23)	37.7941 (4.13)	28.6610 (2.51)	19.0590 (1.28)	10.4561 (1.48)	7.0429 (0.50)	11.3779 (0.63)	5.7743 (0.25)
mem_put	-0.0056 (-1.24)		0.0006 (0.12)	-0.0032 (-0.63)	0.0705 (3.58)***		0.0507 (2.32)**	0.0549 (2.20)**	0.0232 (0.67)		0.0053 (0.15)	0.0265 (0.68)
mem_rel	0.0041 (0.40)		-0.0209 (-1.84)*	-0.0153 (-1.21)	-0.1666 (-3.67)***		-0.2342 (-4.36)***	-0.2245 (-3.68)***	0.1610 (2.03)**		0.0423 (0.50)	0.0922 (0.97)
mem_ols	0.0240 (3.60)***		0.0225 (3.31)***	0.0198 (2.14)**	0.0696 (2.38)**		0.0554 (1.73)*	0.0433 (0.97)	0.0021 (0.04)		-0.0631 (-1.24)	-0.1502 (-2.16)**
inf_bond	0.0021 (8.93)***		0.0015 (5.57)***	0.0016 (5.39)***	0.0044 (4.27)***		0.0005 (0.42)	0.0007 (0.46)	0.0055 (3.11)***		-0.0003 (-0.13)	-0.0014 (-0.59)
inf_bridge	-0.0024 (-8.59)***		-0.0024 (-5.66)***	-0.0028 (-5.54)***	-0.0098 (-7.93)***		-0.0037 (-1.85)*	-0.0036 (-1.48)	-0.0060 (-2.80)***		0.0093 (2.92)***	0.0109 (2.89)***
local	0.0512 (4.08)***		0.0452 (3.47)***	0.0424 (2.77)***	0.1250 (2.28)**		0.0468 (0.76)	0.0145 (0.20)	0.0570 (0.60)		-0.1260 (-1.29)	-0.1079 (-0.93)
elf	-1.4910 (-2.53)**		-0.9770 (-1.48)	-0.6564 (-0.88)	-5.9343 (-2.30)**		0.0563 (0.02)	-0.1729 (-0.05)	2.5555 (0.58)		13.6188 (2.76)***	11.8534 (2.12)**
rulesenv		0.5573 (1.79)*	0.3641 (1.45)	0.2792 (0.90)		2.9760 (2.45)**	2.4795 (2.09)**	2.4464 (1.64)		2.8665 (1.53)	4.2137 (2.24)**	4.3029 (1.85)*
judform		-0.0280 (-0.17)	-0.0511 (-0.37)	-0.0152 (-0.10)		0.1611 (0.25)	-0.7701 (-1.18)	-0.5663 (-0.78)		0.6803 (0.69)	1.6695 (1.61)	0.9351 (0.83)
exconst		-0.0831 (-0.63)	-0.0330 (-0.30)	-0.0703 (-0.53)		-0.5106 (-0.99)	-0.0164 (-0.03)	0.0960 (0.15)		1.3619 (1.72)*	0.6302 (0.77)	-0.2148 (-0.21)
complaw		1.0890 (1.32)	0.5830 (0.90)	0.8360 (1.12)		3.5322 (1.09)	3.1379 (1.03)	2.8368 (0.79)		8.8668 (1.79)*	6.3798 (1.31)	6.4605 (1.15)
polcomp		0.2198 (2.05)**	-0.0769 (-0.81)	-0.1602 (-1.42)		1.1497 (2.74)***	0.6094 (1.36)	0.2908 (0.53)		0.5608 (0.87)	1.8480 (2.59)**	2.2614 (2.65)***
socmobil		0.9662 (4.71)***	0.5308 (2.72)***	0.4853 (2.16)*		-0.4478 (-0.56)	0.2136 (0.23)	0.3089 (0.29)		2.8957 (2.35)**	2.9344 (2.01)**	3.5341 (2.09)**
hetpref		-2.0950 (-2.74)***	0.3633 (0.52)	0.0509 (0.06)		-12.3245 (-4.11)***	-6.0816 (-1.84)*	-6.1549 (-1.60)		-2.7885 (-0.60)	-12.2236 (-2.33)**	-11.5999 (-1.93)*
kintensity				2.8118 (1.68)*				11.0882 (1.37)				12.6197 (1.00)
excom				-0.8017 (-1.28)				0.4532 (0.15)				-3.1871 (-0.68)
Adj- Rsq	.711	.583	.773	.782	.589	.540	.635	.634	.236	.333	.436	.443
n	115	103	103	91	115	103	103	91	115	103	103	91

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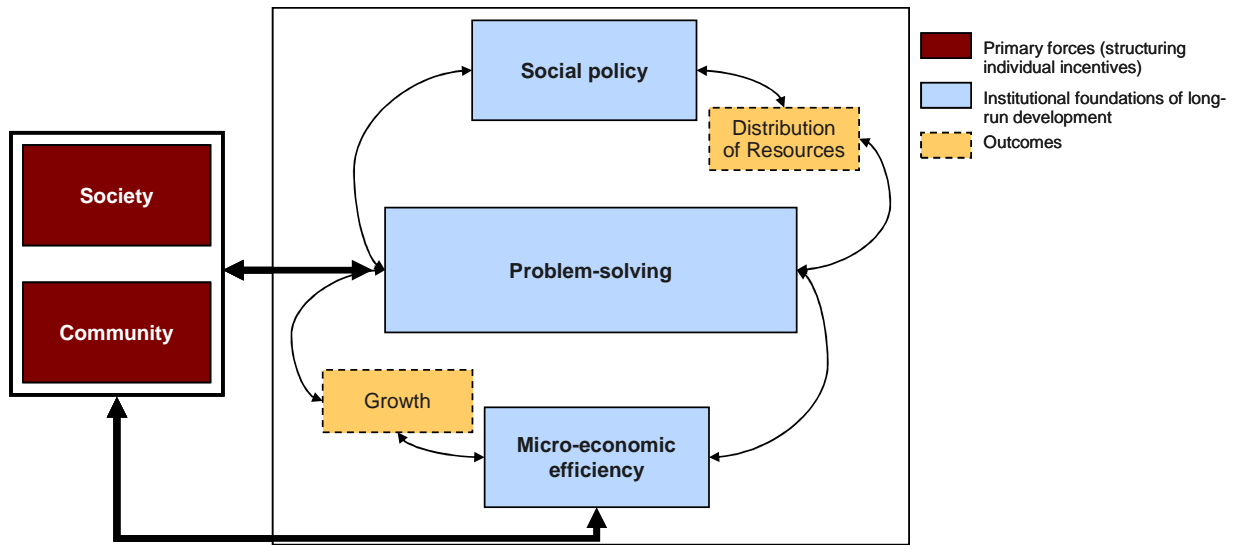
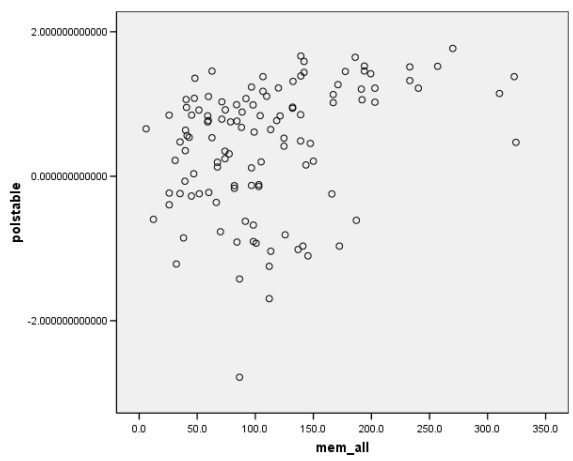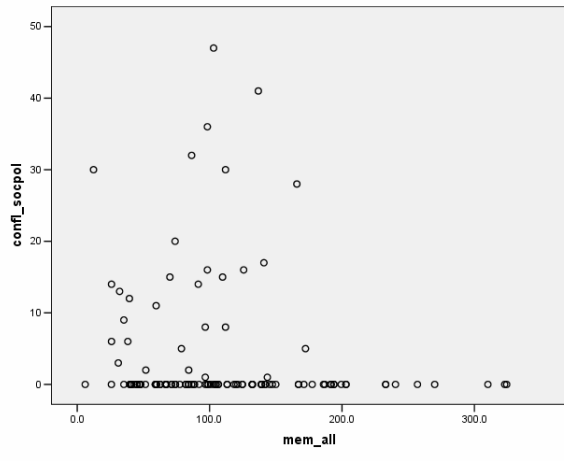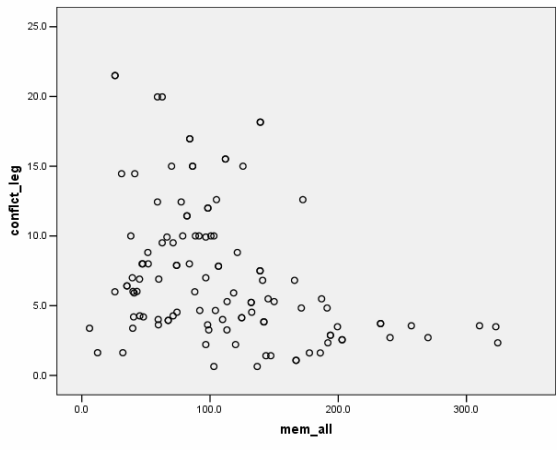Figure 1: Framework for the relationship between community, society and institutional outcomes

Figure 2: The association between group membership and conflict in the sample countries