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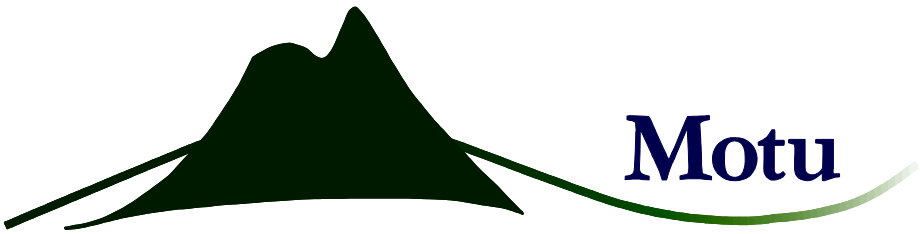

Culture, Beliefs and Economic Performance

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Abstract
Beliefs are one component of culture. Data from the World Values Survey is available on a subset of beliefs concerning (broadly) meritocracy and poverty that appear relevant for economics. We document how they vary as well as their distribution across countries. We then correlate these measures of beliefs with economic growth and compare them with institutional and geographical determinants of income. A strong negative relationship is found between leftist economic beliefs and growth but little evidence is found of a relationship with respect to non-economic beliefs. Finally, we briefly discuss some causal effects on beliefs. The evidence suggests that higher country risk and more dependence on natural resources shifts nations to a more leftist set of economic beliefs. Overall the evidence supports the view that cultural specificities may explain why certain institutions cannot be transplanted between nations with different cultural histories and underlines the limit to policy activism.

JEL codes
P16, E62

Keywords
Beliefs, institutions, causality

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1. Introduction

The role of culture on economic performance has been downplayed by economists, who have traditionally chosen to emphasize the accumulation of factors of production and technical progress as key determinants of economic performance. But culture as a determinant of economic performance was one of the first ideas developed to explain why some societies grow rich. Indeed, a distinguished tradition in social science, particularly important in sociology since the work of Max Weber, considered culture as a key determinant of individual effort and the overall quality of the institutions that support market friendly exchange (see, for example, Weber (1946)). While later work has emphasized other channels through which culture may affect economic organization, economists have done relatively little work on the area. One possible reason for this is the lack of empirical measures of culture accepted in the profession. Meanwhile, perhaps unconstrained by prejudice, other social scientists have continued to study these issues often relying on survey measures across individuals of different cultures. In recent years, however, the use of survey data has become more accepted in economics to study aspects related to institutional quality and culture, starting with work on social capital, beliefs and corruption by Knack and Keefer (1995, 1999), Luttmer (2001), Mauro (1995), Alesina *et al* (2001) *inter alia.*

Differences in beliefs and world outlook have been tied to cultural differences in some of the most satisfying theories designed to explain differences in economic organization across otherwise similar countries. For example, many observers have wondered why America has an economic system based on low taxes and private initiative while Europe has a system with a large government sector and high taxes. The best explanation we have is that there are differences in the beliefs Americans and Europeans have.[1] This happens to be true empirically. For example, Alesina *et al* (2001) report that 60% of Americans – yet only 26% of Europeans- believe the poor are lazy.[2] Furthermore, they show that countries where few people hold this belief (as well as other beliefs that are compatible with the proper workings of a free market) also have more government intervention. Beliefs have also been tied to institutions in the work of Greif (1994) and North (2005). For example the latter attributes a central role to the beliefs system in shaping institutional designs, stating:

[1] See, for example, Piketty (1995), Benabou and Tirole (2002), Alesina and Angeletos (2003), *inter alia.*
[2] Hochschild (1981) provides an illuminating discussion. See also work by Inglehart (1990), Ladd and Bowman (1998) and Fong (2004).

> There is an intimate relationship between belief systems and the institutional framework. Belief systems embody the internal representation of the human landscape. Institutions are the structure that humans impose on that landscape in order to produce the desired outcomes. Belief systems therefore are the internal representation and institutions the external manifestation of that representation. … The key to building a foundation to understand the process of economic change is beliefs both those held by individuals and shared beliefs that form beliefs systems. North (2005), pp. 77 and 119.

In this paper we develop and explore an empirical measure of culture based on the available survey data. We focus on cultural beliefs that appear most relevant for economic performance. First, we obtain an empirically tractable definition of culture, one that is internationally comparable. We also attempt to explain and assess the effect of our cultural variables on economic performance across countries. Lastly, the approach is amenable to a discussion about causal effects. Although a full treatment of this difficult issue is beyond the scope of this project, ways to identify the exogenous factors in the determination of culture are discussed.

Given the highly reductionist approach that we follow, namely one that exclusively focuses on beliefs as the relevant expression of culture, we should at least note the extensive previous work on the subject in Anthropolgy and Sociology. We discuss some of it in the next subsection to provide background to our approach. In brief, the more modern definitions of culture follow the work of Geertz (1973) and Keesing (1974). There does not seem to be an abundance of sources concerning how to turn these general ideas of what culture is into a dimension that is measurable and comparable across countries. Most work in the area has typically observed that a variety of cultural elements (from myths, to language to cultural objects) can be seen as "representing" society's culture in one form or another. See, for example, Evans-Pritchard (1950) and Malinowski (1954). A second characteristic of previous work is that it has mainly focused on specific cultures. Indeed, the typical approach in anthropology is to gather basic data through field research in one or at most two societies. This means that cross-cultural generalizations are more the exception than the norm. Beyond this, there seems to be little work to guide us on an empirically fruitful definition of culture, although we note that our approach is consistent with the more ambitious ideas of using cross-cultural research to uncover common underlying structures (see Lévi-Strauss (1963, 1964)).[3]

[3] Leach (1970) has a highly readable discussion of structuralist ideas in Lévi-Strauss.

The main data source that we use for the construction of internationally comparable measures of culture comes from the "World Values Survey and European Values Survey". The Combined World Values Survey is produced by the Institute for Social Research, Ann Arbor, MI, USA, and it is specifically designed for cross-national comparison of values and norms. Both national random and quota sampling were used with surveys through face-to-face interviews, with a sampling universe consisting of all adult citizens, so a reasonably representative study can be undertaken. We construct country indicators for different values that are internationally comparable. These indicators are built from the part of the data set that appears relevant for economic performance. Picking these variables is partly inductive and relies both on factor analysis and also the dimensions that are justified theoretically in the research explaining how different economic systems are built on beliefs (for a thorough discussion see Hochschild (1981) and for theoretical models built by economists see Piketty (1995), Benabou (2000), Benabou and Tirole (2003) and Alesina and Angeletos (2003), inter alia). Another source of data relates to the relative importance of different religions in different countries. See for example Iannaccone (1998) and Guiso et al (2003). We use all available data on the development of civil society in conjunction with these cultural variables. The paper also provides some attempt at assessing the effect of our cultural variables on economic performance. The discussion in Denzau and North (1993) provides a starting point.

Finally, it is hard to think of sources for the discussion on causal impacts on culture. We draw on the theoretical literature in anthropology to identify if there is an obvious approach. The work of Leach (1976) and Swidler (1986) provides us with a guide.

The rest of the paper is organized as follows. Section 2 discusses the background to the methods that we use and our data set. Section 3 analyses the core beliefs and values that may be important for the economy. The different distribution of beliefs across five of the main regions of the world (United States, Europe, Africa, Asia and South America) is described. Using factor analysis we also study the degree to which these attitudes share a common basis and whether there is a coherent way of classifying them. Section 4 uses these beliefs and values to understand their importance for determining the level of income and growth rate of economies. It also presents results that identify effects of beliefs even after controlling for three other sets of variables that proxy for the chief competing theories about what determines economic performance: trade

integration, geography and institutions. We also explore whether the dispersion of beliefs is an important factor. Section 5 addresses the question of where beliefs originate from. They may not be 'assigned' randomly across the world but instead certain characteristics of regions, such as their risk characteristics and abundance of natural resources, may impact their inhabitants' cultural views. Section 6 concludes.

2. Background, Methods and Data

2.1. Some Previous Work on Culture

The term culture typically describes elements that are shared by the individuals that constitute a particular social group: customs, symbols, systems of meaning, as well as material objects which delimit the social group and point to what is particular to it. The study of culture is central in social analysis, in particular because cultural elements define the logic through which events and actions shape society and lead to social change. One of the fundamental questions explored through the concept of culture is the explanation of differences, of how social groups respond in particular ways to external or internal factors (environmental, historical, economic, political, technological, individual creativity, etc) that affect it. This does not mean that culture constitutes a static system, a rigid grid through which events are incorporated and shape the lives of individuals since these events in turn also shape culture. Culture evolves and changes. In the broadest terms, culture describes the life of a social group as a coherent whole and distinguishes one group from another.

Culture is a very complex phenomenon. Accordingly, very broad definitions are unhelpful (such as Kluckhohn's proposed holistic view of culture as "the total way of life of a people"). More recently, Keesing (1974) describes two general approaches, which we now discuss. One sees culture as the result of human adaptation to its environment (the materialist approach), the other as a system of ideas.

Culture as an adaptive system puts forward the view that "cultures are systems (of socially transmitted behavior patterns) that serve to relate human communities to their ecological settings" (Keesing, 1974:75). It comprises the technologies, economic organization, settlement patterns, social groupings, political organization, religious beliefs and practices that are the result of processes of adaptation governed by the same rules of natural selection that govern biological

adaptation (see for example Meggers, *Amazonia: Man and Nature in a Counterfeit Paradise*, 1971). It is based on the proposition of the biological uniformity of human nature and explains difference on the basis of adaptation to different material (external) conditions, mainly environmental, technological and economic (organization of production). In this scheme, material conditions and the organization of production are seen as primary (following a Marxist approach), and ideational systems are secondary or derivative. This doesn't mean that attention should be paid only to material conditions, but that all aspects of a cultural complex will "reveal functional relationships with other categories of behavior that are adaptive" (Meggers, 1971:43). The more extreme position is represented by the cultural materialism of Marvin Harris (*The Rise of Cultural Theory*, 1968). Harris proposes that "Similar technologies applied to similar environments tend to produce similar arrangements of labor in production and distribution, and … these in turn call forth similar kinds of social groupings, which justify and coordinate their activities by means of similar systems of values and beliefs" (Harris, 1968:4). The main problem with the materialist approach is that societies living in similar environments have developed very different cultural systems. This does not mean, however, that the materialist approach is to be discarded all together, since the natural and material environment definitely influences culture, although it may do so in a dialectic relationship with a particular system of ideas that may not result entirely from these material conditions.

The view of culture as an ideational system gives primacy to ideas, values and beliefs in shaping the life of social groups as opposed to material conditions. This is the view that prevails today in sociology and anthropology. Within this position Keesing distinguishes three main approaches to the study of culture, or three different ways of describing and understanding culture as a system of ideas: the cognitivist, the structuralist and the interpretive. The three approaches are not necessarily exclusive, rather they highlight different aspects of the phenomenon of culture as a system of ideas.

Culture as a cognitive system is viewed as a system of knowledge that determines behavior. Ward Goodenough expresses this view in the following way: "A society's culture consists of whatever it is one has to know or believe in order to operate in a manner acceptable to its members. Culture is not a material phenomenon; it does not consist of things, people, behavior, or emotions. It is rather the organization of these things. It is the form of things that people have in mind, their models for perceiving, relating, and otherwise interpreting them" (Goodenough

1957:167, *Cultural Anthropology and Linguistics*; see also *Culture, Language and Society*, 1971). In this case culture is determined by the biological functions of cognition, which are, presumably, universal. This approach to culture, dubbed "ethnoscience", proposes the construction of a "grammar of culture" comprising all the native categories of thought as constituted in particular places: "From elementary "units of meaning" (equivalent to phonemes, the elementary units of meaningful sound), a cultural grammar for normatively constituting the world could be disinterred: from elementary terms for kinsfolk, plants and diseases, say to the lineaments of social life" (Rapport and Overing 2000:52).

The cognitivist approach borrows much from the structuralist approach based on the work of Claude Lévi-Strauss. For Lévi-Strauss, culture is a symbolic system created by the mind. Thus, if we understand how the mind works, then we can understand how culture as a symbolic system is constructed and how meaning is created within it. Lévi-Strauss argues that all subsystems of culture have the same underlying structure, since they are all brought into being by the processes of the mind. Thus, language, kinship, totemism, myth, all share the same underlying structure. Lévi-Strauss' ideas derive from linguistics and his analysis parallels Saussure's analysis of the structure of language. Lévi-Struass concentrated on the study of myth because, according to him, myth is the most pure creation of the mind, it reflects the works of the mind in the most pure form, it is closer to the unconscious (quote from LS). Analyzing a vast corpus of myths from South America, he showed that the elements that constitute a myth (different for each particular group) are ordered in a series of relationships of opposition and complementarity that reflect how humans think about the world and bring order and meaning to it. This constitutes the underlying structure of the myth and of mythical thought, and is also reflected in other realms of life – kinship, art, religion, politics, economics – since it is through the same processes of mind that all realms of life are ordered and acquire meaning. Thus, each culture provides a pattern of organization of different elements (derived from each particular context) that reflects a common underlying structure. They differ at the symbolic level, given the social, material and historic contexts particular to each group, but they are similar at the structural level since the processes of mind are universal. Lévi-Strauss' ideas derive from linguistics, and his analysis parallels Saussure's analysis of the structure of language.

Geertz favors a semiotic concept of culture, but resists the formal approach of the cognitivists and the structuralists. Instead he proposes "interpretation" as the key to the

understanding of culture: "Believing, with Max Weber, that man is an animal suspended in webs of significance he himself has spun, I take culture to be those webs, and the analysis of it to be therefore not an experimental science in search of law but an interpretive one in search of meaning" (Geertz, 1973:5). Thus, he proposes that a culture can only be known through a detailed description, which involves interpretation, of the different layers of significance. Borrowing from the philosopher Gilbert Ryle, he calls this process "thick description". This, he argues, is what ethnography is about and what defines anthropology as a social science. Thus, he puts emphasis on the particular context (both temporal and spatial) of cultural symbols rather than on the universal underlying structure that orders culture. Meaning for Geertz lies primarily in the symbolic context.

For Geertz, acts (e.g., a wink) are signs that can only be properly understood in the context within which they occur through "thick description". The laws of cognition will not help us in understanding the acts of people in specific cultures, what we need is "familiarity with the imaginative universe within which their acts are signs" (Geertz 1973:13, follows Wittgenstein). Neither does structuralism bring us any closer to understanding culture, since meaning is constructed each time through the action of individuals in particular contexts and not at some abstract, deep, structural level: "Behavior must be attended to, and with some exactness, because it is through the flow of behavior – or, more precisely, social action – that cultural forms find articulation. They find it as well, of course, in various sorts of artifacts, and various states of consciousness; but these draw their meaning from the role they play (Wittgenstein would say their "use") in an ongoing pattern of life, not from any intrinsic relationships they bear to one another" (Geertz, 1973:17). Culture is public because meaning is public, symbols acquire meaning in the context of social relationships in particular moments in time and place. Meaning is permanently being constructed within particular cultures; symbols are inherently ambiguous thus meaning is never fixed. In turn, the process of construction of meaning has the ability to transform the culture that guided the process in the first place.

This brings us to the relationship between culture and action, an aspect of the more general question in social theory about the relationship between society and the individual. Culture, as a particularizing concept, "came to the fore in the study of nation states as general developmental theories originating in the European Enlightenment have proved less and less complete and often inapplicable" (Austin-Broos, 1987:xxii). The failure of general theories of

progress, neo-classical or marxist, to explain the processes of modernization in Third World nations promoted a more particularistic approach to the analysis of beliefs, strategies and institutions, the idea being that particular societies have specific logics of development derived from their particular cultures (Austin-Broos, 1987).

The notion predominant nowadays is that of culture as a system of ideas through which people attribute meaning to the world around them and to their actions. The question is how does culture translate into action? How does it guide behavior and to what extent? There are two general approaches to the problem of the interaction between the individual and society. One, more modern, emphasizes the capacity of the agent (the individual) to act creatively and independently of the structural constraints represented by society. Thus, it concentrates on the ways that individual action transforms culture. Geertz's view of culture as a symbolic system favors this position since it emphasizes the view of culture as a system in constant transformation, under a constant process of construction in which the individual has a prominent role. This position has been advanced more recently through discussions about individual creativity and imagination. The other, more traditional, follows Durkheim's proposition that collective representations (*conscience collective*) have an independent existence and endure over and above the actions of particular individuals (Durkheim, 1895). These collective representations constrain, and even exercise coercion over, the actions of individuals, determining individual behavior and "lending to individuals' acts a certain social and cultural regularity" (Rapport and Overing, 2000:1). This position underlies the "values paradigm" that assumes that "culture shapes action by supplying ultimate ends or values toward which action is directed, thus making values the central causal element of culture" (Swindler, 1986:273).

The values paradigm derives from Weber (1946). Weber argued that religious beliefs reflected in the Protestant "ethos" had a momentary historical fit with capitalist norms of action, resulting in an "elective affinity". In time, capitalism emancipated from its religious supports (the Protestant ethos) and in turn helped to corrode them. With modernity came the dissolution of the religious-ethos that was once bound to capitalism. Within this line of analysis religious beliefs are independent from capitalism as a phenomenon. They are not functionally derived from the economic structure of life as Marx proposed. There is nothing about capitalism as an economic system itself that can explain the capitalist "ethos".

Religious beliefs were a factor in the emergence of capitalism, but Weber is not a mono-causal theorist (in the way that Marx is). What he proposes is a temporal fit between a multitude of factors that led to the rise of capitalism. He explains the role of religious beliefs while Marx describes the role of other factors such as class and the structure of production. Economic systems are thus interlaced with social meaning. Weber is not as much interested in explaining causality as he is interested in interpreting the meaning of social action, its significance to the actors themselves, the meaningfulness that holds together the world of the social actor. He does not say that Protestantism caused Capitalism, he is interested in the ways that Protestantism influenced Capitalism or the things that it can explain about it, in other words, the affinity between them ("elective affinity") and how the two phenomena work together. It does not mean that Capitalism would not have evolved without Protestantism, it probably would have in another form (as it did before in the case of the Florentine Merchants). One could say that Protestantism "shaped" Capitalism.

Weber was interested in both the "lifeworld" of individuals, their values, ideas and intentions, and the impersonal forces, rules, laws and institutions that drive the individual and constitute a "system". Individuals don't just act in response to external forces of the system, their actions need to be meaningful to them. Human beings crave for meaning, their actions are directed towards finding the ultimate meaning of life and are motivated, at least partly, by this concern.

Weber describes four different conceptions of rationality that explains action or gives it meaning: instrumental/functional (means-end), value rationality (religious ideas, nationalism, etc), affectual rationality (affects and feelings), and traditional rationality (habituation, "borderline" as a category of meaningful action). It is only possible to know which one applies in each particular circumstance through interpretation. Thus, in his view, people don't only respond to a means-end rationality, what economists traditionally call rationality. Rationality as an "ideal type" (a category of analysis) that explains action and constitutes culture is a broader concept in Weber's view. Values, affects, feelings and traditions are as important as rationality in the economists' sense when we delve into the meaning of actions.

Various attempts have been made since Weber to incorporate the notion of the contextual or processual nature of culture, making space for individual, creative action. For example, see Parsons' theory of social action and pattern variables (Parsons 1977) (and Parsons' *Voluntaristic*

theory of action, 1937, especially summary chapter, 697-726) or Bourdieu's theory of practice and the *habitus* (Bourdieu 1977).

2.2. Data and Empirical Approach

The main source of our data on beliefs and values across countries is the World Values Survey Series. We use data on the first three waves (1981-84, 1990-92, 1995-97). We could not use data from a fourth wave in 00-04 since the majority of our core questions were not available (and for the smaller European Values Survey in 1999 where related questions are asked their wording and answer categories change significantly). In total the WVS interviewed a random sample of 168,482 people in 64 nations. The appendix contains more information about this survey. We use data on a subset of the people who answered the relevant questions. The countries in our sample are given in Table A.

The WVS has data available on a large variety of opinions on beliefs and values (positive statements about how the world works) and values (normative statements on how the world should work). Alternatively, beliefs can be thought of as the combination of the available information with a set of more stable individual values (that condition the acceptance/rejection of particular arguments). We will use the two words interchangeably. A challenge of our approach is to select out of these opinions an appropriate set to study. We study beliefs on issues that are economically relevant. We also select a set of non-economic beliefs and values as a benchmark. Thus, our study is focused on two "cultural domains", namely economic and non-economic.

2.2.1. Economic Beliefs

There is a vast literature in political science discussing the nature of political beliefs (e.g., de Tocqueville (1955), Lipset (1979), *inter alia*; see also the discussions in Rokeach (1973), Feldman (1988), Inglehart (1990) and Zaller (1991)). Some of this work emphasizes how left right political choices reflect the basic cleavages in society. Lipset and Rokkan (1967), for example, argue for the importance of the religious and the class (or economic) cleavage. A large part of the variation in the latter that explains party choice can be captured by an individual's belief concerning three basic economic questions:

(1) Beliefs concerning the role that individual needs should play in determining income
(2) Beliefs concerning the role of merit in determining income, and

(3) Beliefs concerning how desirable is private ownership of property.

We use five different World Values questions to capture these different dimensions of ideology, starting with the role of needs as captured by attitudes towards poverty. Three survey questions ask about attitudes towards poverty and inequality. They are as follows:

> **1a.** "Why, in your opinion, are there people in this country who live in need? Here are two opinions: which comes closest to your view?" The two relevant options are "1. They are poor because of laziness and lack of willpower, OR 2. They are poor because society treats them unfairly."
>
> **1b.** "In your opinion, do most poor people in this country have a chance of escaping from poverty, or there is very little chance of escaping?" The two options are "(1) They have a chance or (2) There is very little chance."
>
> **1c.** "Do you think that what the government is doing for people in poverty in this country is about the right amount, too much, or too little?" The options are "(1) Too much or (2) About the right amount, or (3) Too little."

Turning attention to individual beliefs concerning how desirable is private ownership of property, we use the answer to the question:

> **1d.** "There is a lot of discussion about how business and industry should be managed. Which of these four statements comes closest to your opinion? (1) The owners should run their business or appoint the managers; (2) The owners and the employees should participate in the selection of managers. (3) The government should be the owner and appoint the managers; (4) The employees should own the business and should elect the managers."

Finally, we turn attention to the role of merit in determining income (interpreting merit as payment in proportion to individual output). The following question appears to address the beliefs concerning this issue:

> **1e.** "Imagine two secretaries, of the same age, doing practically the same job. One finds out that the other earns considerably more than she does. The better-paid secretary,

however, is quicker, more efficient and more reliable at her job. In your opinion, is it (1) fair or (2) not fair that one secretary is paid more than the other?"

From (1a) we define the variable called *Unfair for Poor-L* which equals 0 if the answer is category (1) and 1 if the answer is category (2). The dummy, *No Escape–L*, is defined similarly using (1b). *Government help Poor-L* is a variable measured on a cardinal 1-3 scale based on the responses to question (1c). The variable *Business Ownership-L* is defined over a cardinal 1-4 scale based on the responses to (1d). Finally from the last question (1e) we define the dummy, *Fair Pay-L*, which equals 0 if the answer is category (1) and 1 if the answer is category (2). The extension *L* indicates that under the natural interpretation of the corresponding variable, higher values are associated with a more left wing ideological placement.

2.2.2. Non-Economic Beliefs

It is less clear from the literature discussed at the start of this chapter how the core set of "moral" beliefs that drive left and right choices can be described. Political scientists have argued for the increasing importance of values that emphasize a libertarian/authoritarian dimension as well as "post materialist" values that focus on quality of life (rather than economic preservation). See Inglehart and Klingemann (1976), Flanagan (1987), Kitschelt (1994), *inter alia*. For example, a representative recent paper is Knutsen and Kumlin (2003) who identify three central (non-economic) values used in party choice. These are as follows:

(1) Beliefs concerning how desirable is the environment/ecology versus growth
(2) Beliefs about the importance of moral values (religious versus secular),
(3) Beliefs concerning how desirable is a libertarian versus authoritarian type of society.

We use five different World Values questions to capture these different dimensions of moral ideology, starting with ecology versus growth orientation beliefs. Two World Values survey questions appear related to these attitudes. They are as follows:

2a. "Here are two statements people sometimes make when discussing the environment and economic growth. Which of them comes closer to your own point of view? (1) Protecting the environment should be given priority, even if it causes slower economic

growth and some loss of jobs. (2) Economic growth and creating jobs should be the top priority, even if the environment suffers to some extent."

2b. "For the following pair of statements, please tell me which one comes closest to your own views." The options are "(1) We should emphasize tradition more than high technology, OR (2) We should emphasize high technology more than tradition."

It is not so clear how to find survey questions that help to separately capture the other two dimensions of non-economic beliefs: (i.e., moral values and libertarian/authoritarian tendencies). The question below appears to more heavily focus on the first:

2c. "Please tell me if homosexuality can always be justified, never be justified or something in between, using this card." Card shows a scale from 1 to 10 where "(1)=Never justifiable, (10)=Always justifiable."

The following questions appear to focus both on libertarian/authoritarian beliefs and also on the moral dimension:

2d. "For the following pair of statements, please tell me which one comes closest to your own views. (1) To build good human relationships it is most important to try to understand other's preferences OR (2) To build good human relationships it is most important to express one's own preferences clearly."

2e. "I'd like to ask you about some groups that some people feel are threatening to the social and political order of society. Would you please select from the following list the one group or organization that you like least? (1) Jews (2) Capitalists (3) Stalinists/hard line communists (or country equivalent) (4) Immigrants (5) Homosexuals (6) Criminals (7) Neo-Nazis/Right extremists (or country equivalents)."

We use (2a) to define the variable, *Environment-L*, that equals 0 if the respondent says that 'economic growth and creating jobs should be the top priority, even if the environment suffers' and equals 1 if the response is that 'protecting the environment should be given priority.' (Again the extension *L* indicates that under the natural interpretation of the corresponding variable, higher values are associated with a more left-wing ideological placement). From (2b) we define the variable called *Tradition vs Technology-R* in which traditionalists are assigned the value 1 and

technologists the value 0 (higher values here may not unambiguously reflect leftist/rightist ideology since although conservative right wingers are often traditionalists insofar as moral issues are concerned, technology that seeks to dominate nature may be rejected by leftists). From (2c) we define the variable, *Homosexuals-L*, which corresponds to the 10 (cardinal) response categories given in that question. We use (2d) to define the variable, *Tolerance-L*, that equals 1 if the respondent says that 'to build good human relationships it is most important to try to understand other's preferences' and equals 0 if the response is that one should express 'one's own preferences clearly'. Finally from (2e) we define a new variable called *Capitalists-L* that equals 1 if the respondent says that they like capitalists the least and 0 otherwise.

3. Results 1: The Structure of Beliefs

3.1. Economic Beliefs

Figure 1 in the appendix shows how the 25th, 50th and 75th percentiles of responses to each of these questions vary across five major regions of the world: USA, South America, Asia, Europe and the Former Communist Countries. We also report the results for three African countries (Ghana, South Africa and Nigeria) in the text.

The most striking feature of the percentiles is that for both questions (1a) and (1b) over 50% of respondents in the USA and Asia believe that people are in need due to laziness and also that it is possible to escape poverty. By contrast over half of people in South America, Europe, the former communist countries and Africa tend to blame unfairness of society for being in need and believe that people have little chance of getting out of poverty. For example in the USA and Asia, 60.0% and 51.2%, respectively, of people blame laziness, whereas 80.7% of former-Communists, 77.8% of Europeans, 71.7% of Africans and 64.5% of South Americans blame an unfair society. And whereas 70.8% of Americans and 68.8% of Asians believe that there is a chance of escaping poverty, only 26.1% of people from the former Communist countries, 40.0% of Africans, 41.9% of South Americans and 45.0% of Europeans believe this to be so. The results for whether the government should help the poor show not dissimilar patterns. At one end, 60.0% of Americans believe that the poor are already receiving either too much help or the right amount (despite of the relatively high level of inequality in their country). At the other end, 70.9% of Africans, 69.7% of

Europeans, 67.9% of South Americans and 85.3 % of former Communists report that they are getting too little help from the Government.

With respect to the question of whether it is fair for an efficient secretary to be paid more than an inefficient one, a significant majority of respondents (over 75%) across all regions of the world, with the exception of Europe and Africa, believe that it is fair. In Europe and Africa, 30.5% and 29.5% of people say that it is not fair. Views on who should run businesses show a wide spread of beliefs varying from a high degree of consensus that owners should appoint managers, possibly with the participation of workers in the United States (91.6%) to former Communists of whom only 59.9% hold such a belief. In between are the Europeans, Africans, South Americans and Asians where the proportions are 86.0%, 85.0%, 79.7% and 78.0%, respectively.

3.2. Factor Analysis on Economic Beliefs

Since the same sort of people may be inclined to answer the above questions similarly, we may be able to capture most of the variation in the answers by a smaller set of variables. For example, those people who believe that there is little chance of escaping from poverty may be the same individuals who also believe that people are in need due to society being unfair and that the government should do more to help them. In other words, the responses to these questions may be highly correlated and simply reflect the one 'core' characteristic of an individual. This also becomes a problem when we try to identify which of these different beliefs is most important for determining economic performance (see chapter 4).[4]

As a first approach to address these kinds of issues, Table 1a shows the correlation coefficients between all of our five variables. The combinations with the strongest positive correlations are *Unfair for Poor-L* and *No Escape-L* (equal to 0.39), *Unfair for Poor-L* and *Government help Poor-L* (equal to 0.36) and *No Escape-L* and *Government help Poor-L* (equal to 0.32). The correlations of these three variables with *Business Ownership-L* and *Fair Pay-L* are weaker, but still significantly positive in most cases. The exceptions are between *Fair Pay-L* and *No Escape-L* as well as between *Fair Pay-L* and *Government help Poor-L* both of which are (weakly) negatively correlated (equal to -0.01 and -0.03, respectively).

[4] Formally, it introduces the possibility of multi-collinearity into regression equations that use sets of beliefs as explanatory variables.

Second, we also seek to uncover how many independent sources of variation exist across all our measures of beliefs by undertaking a principal components analysis. This method amounts to finding orthogonal linear combinations (called 'principal components') of our five variables that can account for the maximum amount of variability in our original set of variables. Say, for example, it turns out that two principal components can account for nearly all of the variation in economic beliefs and if, by looking at the coefficients, we can identify them as a poverty/inequality component and an efficiency component. Then we can argue that there are only two important 'latent' variables, or 'core' beliefs, inherent to each person that account for all variations in how they answer a multitude of different types of questions that are all related to these topics. In other words, although not guaranteed, it may be that the (uncorrelated) principal components that account for most of the variation in our set of beliefs reveal different sub-groups of beliefs that can be given an economic interpretation.[5]

Table 1b indicates that two factors are able to explain 56% of the total variation in responses and three factors are able to explain 75%. Retaining two factors, we are able to obtain the factor loadings: that is, how much weight each factor gives to each of the five component variables, *Unfair for Poor-L*, *No Escape-L*, *Government help Poor-L*, *Business Ownership-L* and *Fair Pay-L*. Table 1c shows the factor loadings. They are:

$$\textit{Factor}\,1 = 0.77\,\textit{Unfair for Poor-L} + 0.75\,\textit{No Escape-L} + 0.73\,\textit{Government help Poor-L} + 0.27\,\textit{Business Ownership-L} - 0.06\,\textit{Fair Pay-L} \quad (1)$$

$$\textit{Factor}\,2 = 0.06\,\textit{Unfair for Poor-L} - 0.02\,\textit{No Escape-L} - 0.09\,\textit{Government help Poor-L} + 0.47\,\textit{Business Ownership-L} + 0.89\,\textit{Fair Pay-L} \quad (2)$$

The first factor is marked by especially high loadings on *Unfair for Poor-L*, *No-Escape-L* and *Government help Poor-L* whereas the second factor is marked by especially high loadings on *Business*

[5] The principal components are computed as follows: consider a vector, $\mathbf{x}$, comprised of a set of variables $x_1, x_2, .. x_n$ with covariance matrix, $\mathbf{V}$. We want to find a linear function $\boldsymbol{\alpha}'\mathbf{x}$ that has maximum variance subject to $\boldsymbol{\alpha}'\boldsymbol{\alpha}=1$. This implies solving $|\mathbf{V}-\lambda\mathbf{I}|=0$. The maximum characteristic root of $\mathbf{V}$ is the required maximum value and the corresponding characteristic vector is the required $\boldsymbol{\alpha}$. Write the roots (or 'eigenvalues') in decreasing order: $\lambda_1, \lambda_2, .., \lambda_n$ and let the corresponding eigenvectors be $\boldsymbol{\alpha}_1, \boldsymbol{\alpha}_2, .., \boldsymbol{\alpha}_n$. Then the 'principal components' of the x_i's are the linear functions: $z_1=\boldsymbol{\alpha}_1'\mathbf{x}$, $z_2=\boldsymbol{\alpha}_2'\mathbf{x}$, …, $z_n=\boldsymbol{\alpha}_n'\mathbf{x}$. Then $\mathbf{V}(z_1)=\boldsymbol{\alpha}_1'\mathbf{V}\boldsymbol{\alpha}_1=\lambda_1$, $\mathbf{V}(z_2)=\boldsymbol{\alpha}_2'\mathbf{V}\boldsymbol{\alpha}_2=\lambda_2$, .., $\mathbf{V}(z_n)=\boldsymbol{\alpha}_n'\mathbf{V}\boldsymbol{\alpha}_n=\lambda_n$. The principal components have the following properties: $\Sigma_i \text{var}(z_i)=\Sigma_i \lambda_i=\text{Trace}(\mathbf{V}) =\Sigma_i \text{var}(x_i)$ and the variables, z_i, are orthogonal.

Ownership-L and *Fair Pay-L*. Consequently we can conclude that the economic attributes of being 'lefty' are composed (statistically) of two aspects.

The first emphasizes beliefs concerning poverty and the role that individual needs should play in determining income (captured by Factor 1). The second emphasizes the role of merit in determining income and attitudes about the desirability of private ownership of property (captured by Factor 2). The answers to our two survey questions relating to the potentially different attributes of merit and private ownership (i.e., *Business Ownership-L* and *Fair Pay-L*) are not sufficiently independent to allow us to identify separate factors emphasizing each of them individually. It remains possible that finer survey questions could show that there is independent variation amongst people over these two attributes. On the other hand, there may always remain high degrees of overlap between them in the sense that without private ownership claims to property it may be hard to ever create a meritocracy, making answers to questions about these two attributes potentially always hard to distinguish.

3.3. Non-Economic Beliefs

Figure 2 in the appendix shows how the percentiles of responses to all these questions vary across the USA, South America, Asia, Europe and the Former Communist Countries. The issue of whether the environment or the economy that should be given priority shows a high degree of uniformity across the regions of the world (with the exception of Africa). In all of these regions between 54.0% and 60.1% of people say that the environment should be given priority, whereas in Africa the number is only 35.5% (perhaps reflecting the priority of development). Regards the related question of whether it is tradition or technology that is more important, the responses range from a relatively high proportion of Americans who declare themselves to be traditionalists (i.e., 61.5%) to a substantially lower proportion of Asians (i.e., 28.7%). Former-communists and Europeans are more evenly split (54.1% and 49.4%, respectively).

The most conservative set of beliefs on whether homosexuality is justifiable occurs in Asia and Africa where 71.2% and 70.0%, respectively, say that it is never justifiable (i.e., a "1" on a 1 to 10 scale). At the other end of the scale are the Europeans of whom only 41.0% believe this to be so. With respect to whose preferences matter, the most selfish region of the world appears to be South America where 53.8% believe that their own are most important. Moreover South Americans have the highest proportion of people (i.e., 19.4%) who dislike capitalists (compared to

other groups). The lowest proportions are in Europe (6.2%) and, surprisingly, the former Communist countries where just 4.3% like capitalists even less than Jews, Stalinists, immigrants, homosexuals, criminals and neo-nazi/right extremists.

3.4. Factor Analysis on Non-Economic Beliefs

In this section we test whether most of the variation in the set of responses to the questions on non-economic beliefs can be captured by a smaller set of variables, using the same methodology as used for the set of economic beliefs. In the present case the same people who believe, for example, that homosexuality is never justifiable may also be the ones who think that tradition is most important and others' preferences are not so important to take into consideration. These beliefs may all reflect one common 'core' characteristic of an individual. We would also like to know whether the patterns in the responses reveal the existence of categories that correspond to our priors about which questions are asking about similar beliefs.

Table 2a shows the correlation coefficients between all these five variables. They are all now much weaker than the previous set. The combinations with the strongest positive correlations are between *Tradition vs Technology*-R and *Environment-L* (=0.08), *Tradition vs Technology*-R and *Tolerance-L* (equal to 0.06), *Tolerance-L* and *Homosexuals*-L (=0.06), *Environment-L* and *Tolerance-L* (equal to 0.08) and *Environment-L* and *Homosexuals-L* (=0.08). The correlations between the other variables are all relatively small.

To check how many independent sources of variation exist across our five measures, Table 2b reports that two factors are able to explain 44% of the total variation in responses and three factors are able to explain 64%. Retaining three factors, we are able to obtain the factor loadings: that is, how much weight each factor gives to each of the five component variables, *Tradition vs Technology*-R, *Environment -L*, *Capitalists*–L, *Tolerance-L* and *Homosexuals-L*.

Table 2c reports the factor loadings the rotated factor loadings. They are as follows:

$$\textit{Factor}\,1 = 0.40\,\textit{Environment-L} - 0.19\,\textit{Tradition vs Technology-R} + 0.83\,\textit{Homosexuals-L} + 0.44\,\textit{Tolerance-L} + 0.06\,\textit{Capitalists-L} \quad (3)$$

$$\textit{Factor}\,2 = 0.06\,\textit{Environment-L} + 0.05\,\textit{Tradition vs Technology-R} + 0.09\,\textit{Homosexuals-L} - 0.36\,\textit{Tolerance-L} + 0.93\,\textit{Capitalists-L} \quad (4)$$

$$\textit{Factor 3} = 0.53\,\textit{Environment-L} + 0.82\,\textit{Tradition vs Technology-R} - 0.16\,\textit{Homosexuals-L} + 0.34\,\textit{Tolerance-L} + 0.05\,\textit{Capitalists-L} \quad (5)$$

Factor 3 is marked by particularly high loadings on both *Environment-L* and *Tradition vs Technology-R* and Factor 2 has a very high loading on one variable: *Capitalists–L*. The highest loading by far for Factor 1 is on *Homosexuals-L* and the next highest is on *Tolerance-L*. All three factors have moderately high weightings on *Tolerance-L*. Consequently we have a measure of evidence that the non-economic attributes of being 'lefty' are composed (statistically) of three aspects.

One emphasizes beliefs concerning the desirability of improving the environment and ecology of the nation versus concentrating on the economy and technology (captured by Factor 3) whereas the other two emphasize libertarian versus authoritarian beliefs (captured by Factor 2) and also the importance of moral values (captured by Factor 1). Our variable, *Tolerance-L*, that measures the extent to which we should try to understand others, appears to be correlated both with libertarian and moral beliefs, as well as with views regarding the importance of protecting the environment from being destroyed.

4. Results 2: Beliefs and Economic Performance

4.1. Economic Beliefs and Growth

In this section of the project we use our survey measures of both economic and non-economics beliefs and values to study how they affect economic performance. We focus on both how much the average values of these attributes influence performance (i.e., how right or left the populace of the nation is) and also on how much the degree of disagreement amongst people affects performance (i.e., how different these attitudes are across the populace).

4.1.1. Cross-section Results

We first report some cross-section correlations between average (Purchasing Power Parity Adjusted) GDP growth rates between 1980 and 1997 and economic beliefs over this period.

Cardinality of the response categories to the survey questions is assumed.[6] Figure 3a shows how the GDP growth rate varies with beliefs regarding why people live in need. There appears to be a strong negative relationship whereby those countries with low rates of growth are associated with the (leftist) belief that people are poor because have been treated unfairly by society (i.e., are not lazy). A robust regression of GDP growth on the belief variable, controlling for outliers, shows a negative coefficient on *Unfair for Poor-L* that is significant at the 1 per cent level.[7]

Similarly, Figure 3b shows evidence of a negative link between economic performance and leftist beliefs that there is little or no chance of escaping from poverty. The robust regression of growth on *No Escape-L* shows a negative coefficient, again significant at the 1 per cent level.[8] Very similar results are also found between economic performance and leftist belief that the government is doing too little to help the poor (see Figure 3c). With respect to the last two sets of beliefs about how business should be managed (ranging from the owners to the employees) and whether a more efficient secretary should (not) be paid more, there appear to be no obvious relationships looking at figures 3d-e. Cross-section regressions support this view evidence. The coefficients on *Business Ownership-L* and *Fair Pay-L* are negative and positive, respectively, although both are insignificant.

These correlations suggest that leftist economic beliefs may be leading to lower rates of growth. This could be occurring through either of two mechanisms. First, people may be voting for policies and institutions that exert greater control over the economy. Second, even after controlling for institutions and policies, leftist beliefs may be having a direct negative effect *independent of what the government is doing* (for example, if people believe that it is almost impossible to escape from poverty and experience a sense of unfairness, they may try less hard at work and be less productive irrespective of what the government is doing). In the next section we control for measures of institutional quality (as well as trade and geography) and also run random effects regressions to better try to identify the impact of beliefs on economic performance.

[6] For example, if there are two categories then we assign the responses the values 0 and 1, and then take the weighted average. In this case the average corresponds to the proportion of people in the second category. If there are three categories then we take the weighted average over the three values: 0, 1 and 2.
[7] The coefficient equals 0.12 (standard error=0.04). Number of observations=40, Prob.>F=0.01.
[8] The coefficient equals -0.06 (standard error=0.02). Number of observations=40, Prob.>F=0.01.

4.1.2. Panel Regression Results

In Table 3a we report the first set of results where the observations are at the country-year level. The standard errors have been corrected to take account of unobserved random (country) effects. In the first three columns, more leftist economic beliefs about the reasons for being poor (laziness versus unfairness), the perceived likelihood of escaping from poverty and whether the government should be doing more to help the poor are all associated with lower growth rates, at the 1 per cent level of significance. The sizes of the effects are large. For example a one standard deviation change in beliefs about why people are poor (corresponding to shifting 14.8 percentage points of the population) is predicted to explain 25.4 percent of the standard deviation in growth rates. With respect to the likelihood of escaping from poverty, a one standard deviation change (corresponding to 19.4 percentage points of the population) is predicted to explain 19.4 percent of the standard deviation in growth rates.

Columns (4-5) suggest that the leftist belief about more employee/state control is associated with significantly lower growth rates although emphasizing fairness of pay (rather than rewards for better job performance) has a positive effect on growth rates. This latter effect could be associated with the importance of efficiency wages (i.e., paying someone less for doing practically the same job could lead to morale problems and declines in overall efficiency. The economic benefits accruing to firms by avoiding two-tier wage systems has been emphasized, inter alia, by Fehr and Kirchsteiger (1994). In column (6) we regress the rate of growth on the two factors identified in the previous section as capturing most of the overall variation in beliefs. Factor 1 emphasizes beliefs concerning poverty and the role that individual needs should play in determining income whereas factor 2 emphasizes the role of merit in determining income and attitudes about the desirability of private ownership of property. The former has a strong (negative) effect at the 1 per cent level whereas the latter is insignificant.

Table 3b adds an additional set of country level control variables. The idea is to try to identify whether the effect of beliefs on economic performance are occurring directly as opposed to indirectly via their impact on trade, policies and institutions. We therefore include controls for the initial level of GDP (to take account of convergence), colonial legal origins (which proxy for institutional quality) and openness to trade. We also include each country's latitude (since

geography has been argued to be a key determinant of growth). Since our measure is the absolute value of latitude, this variable is highly correlated with the country's distance from the equator.[9]

Column (1) suggests that countries that start off with relatively low levels of GDP tend to grow faster than countries with initially high levels (i.e., they tend to converge toward each other). Greater openness tends to be associated with higher levels of growth and of the legal origin dummies, the main impediment to better economic performance is socialist legal structures (the base category if French). Socialist origins decrease growth rates by around 5 percentage points per annum. In terms of geography, countries further away from the equator tend to grow faster. Importantly, even after controlling for the above set of variables the results indicate that when beliefs are more leftist (in the sense that being poor is attributed to unfairness rather than laziness) there is a significant (at the 1 per cent level) and sizeable impact on economic performance. The size of its coefficient remains very similar to the value reported in Table 3a (that did not contain any controls). Similarly in columns (2-3) *No-Escape-L* and *Government help Poor-L* both retain negative effects on growth, at the 1 per cent level, of almost the same magnitude to before. However once our set of macroeconomic controls is included in columns (4-5) we no longer find effects for leftists belief about more employee/state control of business and fairness of pay scales.

In the last column national growth rates are regressed on the two factors identified in Section 2.2 as capturing (orthogonal) dimensions of economic beliefs (Factor 1=0.77*Unfair for Poor-L*+0.75*No Escape-L*+0.73*Government help Poor-L*+0.27*Business Ownership-L*-0.06*Fair Pay-L* and Factor 2=0.06 *Unfair for Poor-L*-0.02*No Escape-L*-0.09*Government help Poor-L*+0.47*Business Ownership-L*+0.89*Fair Pay-L*). The first factor (about beliefs concerning poverty and the role that individual needs should play in determining income) has strong negative and significant effects on economic performance whereas the second one does not.

[9] We also experimented with other measures of institutional quality such as colonial origins and settler mortality (see Acemoglu, Johnson and Robinson (2001)), civil war, freedom (i.e., political rights and civil liberties) and also educational levels. The results on our (belief) variables of interest all remain similar.

4.2. Non-Economic Beliefs and Growth

4.2.1. Cross-section Results

Figures 4a-e show how the GDP growth rates vary with our series of non-economic beliefs. There appears to be little evidence of any strong relationships, with the possible exception of beliefs about whether it is tradition or technology that should be emphasized. A robust regression of GDP growth on the belief that technology should be downplayed in favour of tradition shows a negative and significant relationship.[10] None of the coefficients on other belief variables achieve significance levels below the 5 per cent level.

4.2.2. Panel Regression Results

Table 4a reports a set of (random effects) growth regressions on our set of non-economic beliefs. Apart from beliefs about the importance of tradition versus technology, none of the other variables achieve significance below the 5 percent level. Being a traditionalist (which is usually associated with being more rightist in the sense of preferring the conservation of existing norms) appears harmful to economic performance. This appears to be in striking contrast to the other rightist economic belief variables (i.e., *Unfair for Poor-L*, *No Escape-L* and *Government help Poor-L*) that were strongly associated with higher growth rates. Consequently the regression evidence suggests that there may be one element of right-wing/conservatism ideology associated with a reluctance to embrace change that can actually hold back a nation's growth potential. In that last column (6) national growth rates are regressed on the three factors identified in Section 2.4 as capturing (orthogonal) dimensions of non-economic beliefs (Factor 1=0.40*Environment-L*-0.19*Tradition vs Technology*-R+0.83*Homosexuals-L*+0.44*Tolerance-L*+0.06*Capitalists-L*; Factor 2=0.06 *Environment-L*+0.05*Tradition vs Technology*-R+0.09*Homosexuals-L*-0.36*Tolerance-L*+0.93*Capitalists-L*; Factor 3=0.53*Environment-L*+0.82*Tradition vs Technology*-R-0.16*Homosexuals-L*+0.34*Tolerance-L*+0.05 *Capitalists-L*). Only the third factor (about the desirability of improving the environment and ecology versus concentrating on the economy and technology) has a negative and significant effect on growth.

Table 4b adds the set of country level controls. The results again suggest that growth rates are associated negatively with the initial level of GDP, positively with openness and negatively

[10] The coefficient equals -0.10 (standard error=0.04). Number of observations=39, Prob.>F=0.01.

with socialist legal structures. (Absolute) latitude loses significance in most of these specifications. The main result from the previous table remains robust: a belief that tradition is more important than technology has a negative and significant effect (at the 1 per cent level) on economic performance. The size of its coefficient also stays the same. In the last column it is the third factor (which is weighted most heavily on *Tradition vs Technology*) that is the only one with an identifiable impact on growth.[11]

4.2.3. The Dispersion of Beliefs and Growth

Up until now, we have sought to find a relation between average beliefs and GDP growth. That is, we have been asking whether more left-wing economic or non-economic beliefs affect performance (independent of policies and institutions). It is also possible that the higher order moments, such as measures of the dispersion of beliefs, are important. Dispersion of beliefs may lead, for example, to uncertainty about what others believe and lead to different economic outcomes had everyone held very similar beliefs.

This possibility arises from a small theoretical literature that has recently examined how the equilibria of incomplete information games vary with "higher order beliefs" (i.e., players' beliefs about other players beliefs, players' beliefs about other players' beliefs about other players' beliefs, and so on). Higher order beliefs may play an important role in some economic phenomena. It has been reported that, following the Asian crisis, some of the investors who withdrew their capital from Brazil, did so not because they over-estimated the economic linkages between Asia and Brazil, but because they thought others might do so. It seems that apparently irrelevant news about the economy may lead some firms to reduce their investments (and start a recession), not because they think that the news is relevant, but because they think others may think so. Applied modellers (for example, Morris and Shin (1998)) have taken such reports seriously.

In Table 5a we explain growth rates with our set of aggregate level control variables (*GDP 1975-1980*, *Trade: Openness*, *Institutions: Legal Origins* and *Geography: Latitude*) as well as with the means and standard deviations of our set of economic belief variables. In column (2) both the mean and standard deviation of leftist beliefs regarding the likelihood of escaping from poverty

[11] We also ran specifications with other combinations of controls including colonial origins, settler mortality, civil war, level of freedom and educational levels. The coefficients on these (belief) variables remained similar.

has a negative impact on economic performance at the 1 per cent level. However the dispersion of other types of beliefs appears to have little effect. In the last column only the level of the first economic factor, which is a weighted average of our three beliefs that relate to poverty (*Unfair for Poor–L*, *No Escape–L* and *Government help Poor–L*) is significant (see also column (6) of Table 3a). Consequently the evidence suggests that conflicting views, disagreements and potential uncertainty about what others believe with respect to economic matters are not necessarily correlated with a nation's rate of GDP growth.

Similarly with respect to our set of non-economic attributes (see Table 5b) there is only weak evidence indicating that more disperse beliefs affect economic growth rates: the standard deviation of beliefs relating to the importance of tradition over technology has a negative effect significant at the 10 percent level.

5. Results 3: Some Causal effects on Beliefs

5.1. Discussion on the Origin of Beliefs

The differences in beliefs across America and Europe reported in Alesina *et al* (2001) are striking. Calling them culture pretty much implies that we are not going to be looking for the causes of such differences. However, many countries would like to imitate some of the policies that the Americans have used in the course of their development. These findings suggest that they need to first engineer "American style beliefs". Then the relevant policy question is can they do this or are these beliefs culturally determined?

The arguments given by anthropologists (reviewed in section IIa) suggest that some features of the environment are more conducive to a certain type of beliefs than others. To illustrate consider a society where production depends 100% on rainfall. It is then unlikely that people would come to believe that effort matters. In less extreme environments learning may become mixed with culture in more subtle ways.

Prior work in this area has studied how corruption taints belief. Di Tella and MacCulloch (2002) shows that "pro market" beliefs are negatively correlated with perceptions of corruption. This can be observed at the individual level at one point in time, as people who see a lot of corruption in the country also declare to think that the government should do more to redistribute income to the poor and other left-leaning beliefs. And it can also be observed within countries

over time, as countries that experience a shock to their corruption levels elect parties with left leaning rhetoric in later years. A simple causal interpretation is that more corruption in the country induces people to believe less in the kind of meritocratic forces that support capitalism. Corruption may also offend people, leading them to desire changes in the distribution of income that arises in a capitalist system.

Another hypothesis that is backed by some evidence is that owning property may change the beliefs that people hold. This hypothesis has long been emphasized by conservative politicians. For example, Mrs Thatcher stated

> … we also pioneered two radical policies for wider ownership. The sale of public sector houses at large discounts to their tenants turned hundreds of thousands of families into property owners. Alongside this, the privatisation of industries with special preference for workers and for small buyers began to turn Britain into a nation of shareholders. Of course, ownership of assets brings risks as well as rewards. But the transformation it effects on a society is wholly positive, because it gives people a stake in prosperity and trains them to take control of their own lives. Thatcher (2000).[12]

The evidence we have available suggests the size of the effects can be quite large. For example, Di Tella, Galiani and Schargrodsky (2004) study beliefs amongst squatters living in one of Argentina's shanty towns. The key institutional fact used is that only a few of the original owners of the occupied land accepted the occupation and subsequent reparation offered by the state, while others challenged it in the courts. This led to an exogenous allocation of property rights amongst the squatters. They find that there is a large difference in beliefs between the Argentine general population and the group of squatters that do not have property rights to the small plots of land that they occupy and who are on the lowest income quintile. They find no difference, however, between the measure of pro market beliefs held by the average general population and the squatters that have property rights.

In this spirit, a natural hypothesis for countries with a heavy dependence on natural resources to consider is that very noisy income processes (or more precisely, a belief that noise dominates the generation of income) reduce the intensity of pro market beliefs.

One simple implementation of this idea is in the context of oil producing countries. If oil or, more broadly, natural resources play an important role in driving GDP movements, then an

[12] Convocation Address by Lady Thatcher at Hofstra University, New York, Monday 27 March 2000.

important component of individual income is determined by forces outside of the individual's control. It is hard, in such circumstances, for a person to hold on to the beliefs that sustain a truly capitalist environment with low taxes and small degree of government intervention, such as one maintaining that *"In general, people who put effort working end up much better, than those who do not put an effort"*.

A related idea is that in countries that are more exposed to political and economic risk, hard work may end up going without reward since it is more likely for effort investments in these kinds of environments to be arbitrarily lost by unpredictable shocks. As a result, it again becomes hard for individuals to maintain a belief in the capitalism reward system. The result may be greater public support for intervention to reduce exposure to shocks and compensate the losers who have fallen behind through no fault of their own. We show in the next section how more risky environments are associated with shifts in the belief system of the population.

Note that we already have evidence that welfare state institutions respond to changes in risk. For example, Di Tella and MacCulloch (2002) use OECD data for 1970-1990 to present evidence consistent with the idea that benefits tend to increase when there are positive changes to unemployment.[13] Rodrik (1998) finds a positive correlation between a country's level of openness and the amount of government consumption and argues that more open economies compensate their citizens for the higher employment and income risk they have to face. The evidence comes from regressions of social security and welfare expenditures (as a fraction of GDP) on openness and terms of trade instability (see also Cameron [1978]). Di Tella and MacCulloch (1995) and Luttmer (2001) come closest to our aims by using survey data on the support for welfare spending.

5.2. Country Risk, Resource Extraction and Beliefs

Whether beliefs and values are randomly allocated across the world's population or arise due to differing personal and country characteristics can, to some degree, be tested.[14] In Tables 6a-

[13] The idea that one could explain the high persistence of unemployment in Europe when unemployment shocks lead to increases in benefits is suggested in an influential review by Blanchard and Katz (1997). Hassler *et al* (2003) study how shocks to the income distribution affect the support by risk-neutral workers for a welfare state whose sole purpose is to redistribute wealth.

[14] When explaining general political ideological orientation, the regression evidence suggests that older people are more likely to declare themselves as being right-wing compared to younger people (see Di Tella and MacCulloch (2005)). It supports the often quoted line *"Any man who is under 30 and is not a Liberal has no heart; and any man who is over 30 and not a Conservative has no brains"* variously attributed to Winston Churchill (1874-1965), Georges Clemenceau (1841-1929) and Benjamin Disraeli (1804-1881).

b we report how proxies for the level of natural resources that a country has been endowed with (i.e., fuel exports as a proportion of GDP) and the level of country risk shapes people's economic and non-economic beliefs (see the appendix for full variable definitions). We also control for a set of individual effects like sex, age, marital status and position within the nation's income distribution. To the extent that countries rely on abundant natural resources, becoming wealthy may be more associated with success in capturing rents and belonging to the elite, rather than on working hard in competitive industries. High levels of risk may also mean that the connection between effort and reward is lost. This may alter, for example, people's beliefs on the type of society they live in and also affect their desired levels of taxation and revolt.[15] The three countries in our sample in which fuel exports represent a particularly high proportion of GDP (i.e., greater than 10%) are Nigeria, Norway and Venezuela. The country with the lowest level of country risk is Switzerland (=0.09) and the country with the highest level is (the former) Yugoslavia (=0.52).

In column (1) we explain beliefs about whether the poor are lazy or have been treated unfairly. *Fuel Exports* has a positive coefficient (indicating that more fuel dependence leads to more people ticking the unfair option) although it is not significant. Country risk has a positive coefficient that is significant at the 5 per cent level, suggesting that when there is more country risk people believe that being poor is not because of laziness or lack of will-power. A one standard deviation increase in risk explains 11.5% of a standard deviation in beliefs about whether the poor have been treated unfairly. This represents 5.3 percentage points of the population. The largest coefficient of all the personal effects occurs for the unemployed, who strongly hold the view that they have been unfairly treated by society. Interestingly, the self-employed look at things differently – that is, the poor are lazy. The coefficients indicate that unemployment leads to a 9 percentage point higher probability of ticking the 'unfair' option whereas self-employment leads to a 5 percentage point higher probability of ticking the 'lazy' one.

The results in column (2) show similar patterns, with fuel exports again positive and (weakly) significant at the 11 per cent level, suggesting that a greater reliance on natural resources may lead more people to believe that there is little chance of escaping from poverty. Greater

[15] Collier and Hoeffler (2002) document a positive relationship between the level of primary commodity exports (as a proportion of GDP) and the incidence of civil war across nations using data on 46 conflicts since 1960. Rather than emphasizing rent seeking, they explain their result by arguing that rebels need revenues from trading, for example diamonds or oil, to fund their movement. Otherwise they may face a binding participation constraint and fail to overthrow the regime regardless of how strong are the grievances against the incumbent elite.

country risk has a positive and strongly significant coefficient (at the 1 per cent level) meaning that more people are pushed toward the left-wing view. A one standard deviation rise in risk explains 20.6 per cent of a standard deviation in beliefs about the chance of escaping from poverty. This represents 10.1 percentage points of the population

In column (3) a higher proportion of GDP coming from exports of the natural resource in a country shifts people strongly toward the view that the government should be doing more to help the poor (at the 5 per cent level). A one standard deviation rise in *Fuel Exports* leads to a 13 point increase in the latent variable (on a scale where the two cut points are -0.92 and 0.22) and explains 21.5 per cent of a standard deviation in beliefs about whether the government should help the poor. There are, however, no significant effects of fuel exports on the other two economic belief variables (i.e., *Business Ownership-L* and *Fair Pay-L*) whereas more country risk pushes people more toward the left view for both *Government Help Poor-L* and *Business Ownership-L*.

Table 6b reports the corresponding results for the non-economic belief variables. Column (1) shows a strikingly different pattern with respect to how more abundant natural resources and greater country risk affect beliefs on whether the government should do more to protect the environment. More *Fuel Exports* and *Country Risk* both diminish the view that the environment should be afforded more protection (i.e., make people more rightist) at the 10 per cent and 1 per cent levels, respectively. A one standard deviation rise in *Fuel Exports* and *Country Risk* lead to a drop in the proportion of people who support the environment of 1.9 and 4.1 percentage points, respectively. (On average across the sample, 55.3% of people think that it should be given priority over economic growth and jobs where the standard deviation is 49.7%). With respect to the personal characteristics, whereas people in the top income quintile prefer more to be done to help the environment (suggesting that it is a luxury good), the unemployed want less done and more priority to be given to the economy and job creation. These results are also strikingly different from those reported in the previous table in which the rich (unemployed) tended to give less (more) support for the leftist economic beliefs.

There are no significant effects of fuel exports on the rest of the non-economic belief variables (i.e., *Tradition vs Technology-L*, *Homosexuals-L*, *Tolerance-L*, *Capitalists-L)*. The effect of more country risk on these variables is mixed. It pushes people toward the leftist view that emphasizes technology over tradition but toward more rightist beliefs of intolerance toward others and that homosexuality is not justifiable. The personal characteristics again reveal that in most cases there is

more (less) support amongst the rich (unemployed) for the leftist non-economic belief. For example, people at the top of the income distribution tend to have more supportive views toward homosexuals and greater levels of respect for others' preferences (although they tend not to dislike capitalists the most). By contrast the unemployed express less tolerance toward others.

Consequently the results suggest that economic and non-economic beliefs are determined in very different ways. More country risk pushes people toward more left-wing economic beliefs (in all cases except for the question of fair pay) but toward more right-wing non economic beliefs about the environment, homosexuality and others preferences. The results for natural resources are suggestive of similar patterns: whereas abundant fuel exports push people toward the (left wing) economic view that the government should be doing more to help the poor, it has the opposite effect on non-economic views about protecting the environment (i.e., it becomes less of a priority). Similarly whereas the unemployed hold strongly left-wing economic views on all aspects of poverty (i.e., how unfair it is, the low chances of escaping from it and that the government should help more), they tend to hold strongly right-wing non-economic views regarding the (low) priority that should be attached to the environment and the importance of being tolerant.

In summary, changes in the level of risk in a nation affect most economic beliefs (see Table 6a) which may then in turn affect the country's rate of growth (see Tables 3a-b). A nation's unemployment experience establishes a similar transmission mechanism. With respect to non-economic beliefs the evidence suggests that they are shaped by similar factors (but in often opposite directions, see Table 6b) although there is much less evidence that these kinds of beliefs in turn can affect economic performance (see Tables 4a-b).

6. Conclusions

There are many aspects of culture. One that has been emphasized by researchers worried about institutions is beliefs (e.g., Greif (1994), Denzau and North (1993), *inter alia*), in particular the role of economic beliefs (e.g., Inglehart (1990), Piketty (1995), Alesina *et al* (2001), *inter alia*). In this paper we study the pattern of beliefs, documenting how they co-vary and their patterns across regions. We then study their impact on economic performance. Finally, we discuss characteristics of nations that cause different kinds of belief systems to evolve. The evidence gathered supports the following:

1. Economic beliefs can be divided into two factors. The first emphasizes beliefs concerning poverty and the role that individual needs should play in determining income. The second emphasizes the role of merit in determining income and attitudes about the desirability of private ownership of property.
2. Non-economic beliefs have far less clear divisions. There is some evidence suggestive of a factor embodying the desirability of tradition relative to technology and the extent to which the environment should be given priority over economic growth.
3. There is a statistically significant relationship between economic beliefs and economic performance but little evidence of correlations with respect to non-economic beliefs. When we include controls for the initial level of GDP (to take account of convergence), openness to trade, legal origins (to proxy for institutional quality) and latitude of the country (to capture geographical effects) more leftist economic beliefs to do with the unfairness of being poor, not being able to escape poverty and government help for the poor all lead to lower growth rates, at the 1 per cent level of significance. These results indicate that leftist beliefs may have a strong *direct* economic impact (as opposed to an indirect effect via their impact on trade policies and institutions). One potential mechanism could be that beliefs about the difficulty of escaping from poverty and (economic) life being unfair leads individuals to try less hard at work and less hard at searching for a good job as they give up hope. The effect is to lower overall economic performance.

   It remains possible of course that other beliefs (e.g., that the government should do more to help the poor) leads voters to support different types of political parties. Consequently there may also be strong indirect effects of beliefs on economic performance to the extent that they lead to parties implementing different institutional arrangements and policy settings.
4. We also test for the importance of the dispersion of beliefs on economic performance. There is some (weak) evidence suggesting that more disperse beliefs may potentially damage a nation in terms of its rate of GDP growth.

5. The paper also seeks to identify some of the exogenous factors affecting the formation of beliefs (i.e., where they originate from). With respect to economic beliefs, we find that more country risk pushes people strongly toward the view that the poor are not lazy or lack will power, there is little chance of escaping from poverty, the government should be doing more for the poor and that employees/government should be more involved in running businesses (i.e., all the left wing views). Greater dependence on natural resources has the same effect on views about government help for the poor. By contrast these factors have strikingly different effects on our non-economic beliefs. For example, more country risk and natural resources reduce the conviction that the environment should be afforded more protection (i.e., shifts people more toward the rightist position). Country risk also tends to make people less tolerant toward other groups.

Overall, the evidence supports the view that cultural specificities may be able to explain why certain institutions cannot be transplanted between countries with a different cultural history and underlines the limits to policy activism.

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8. Figures and Tables

Figure 1

Percentiles of Economic Beliefs across Five Regions of the World.

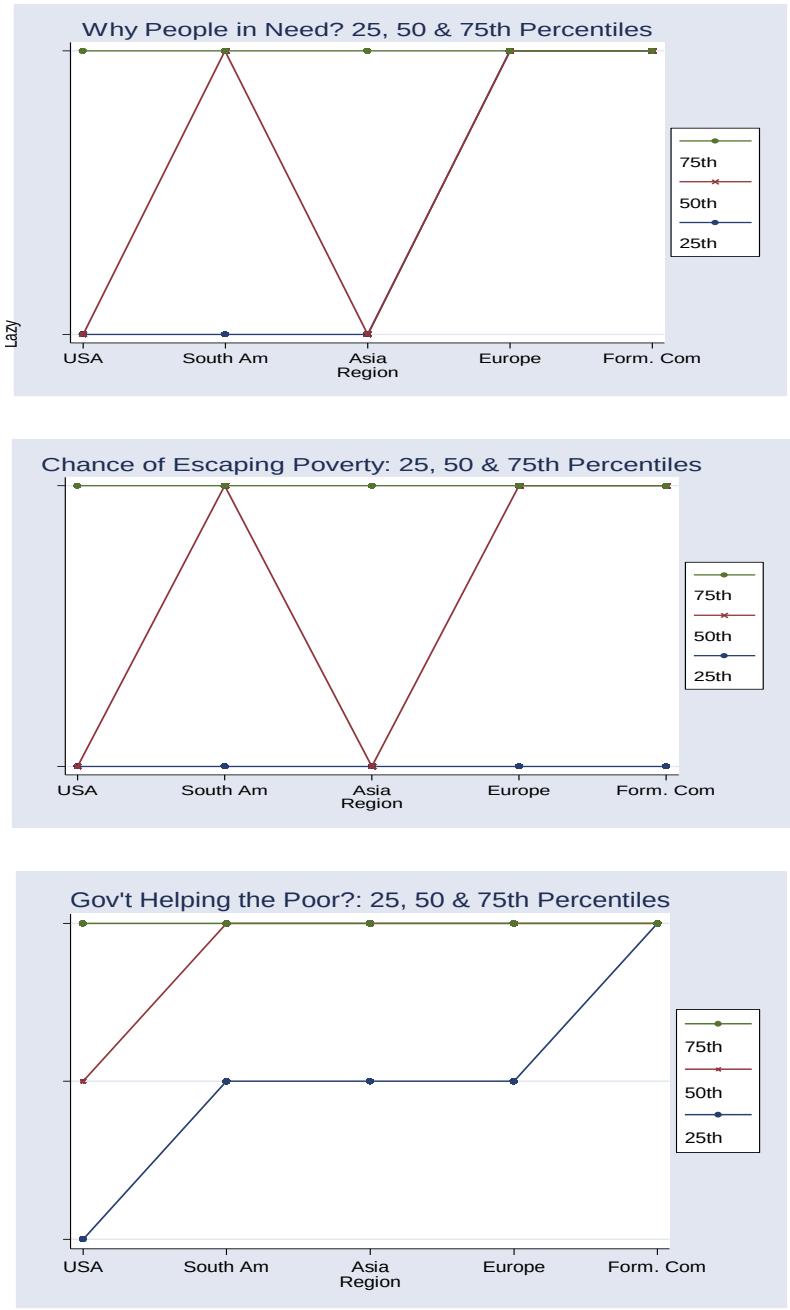
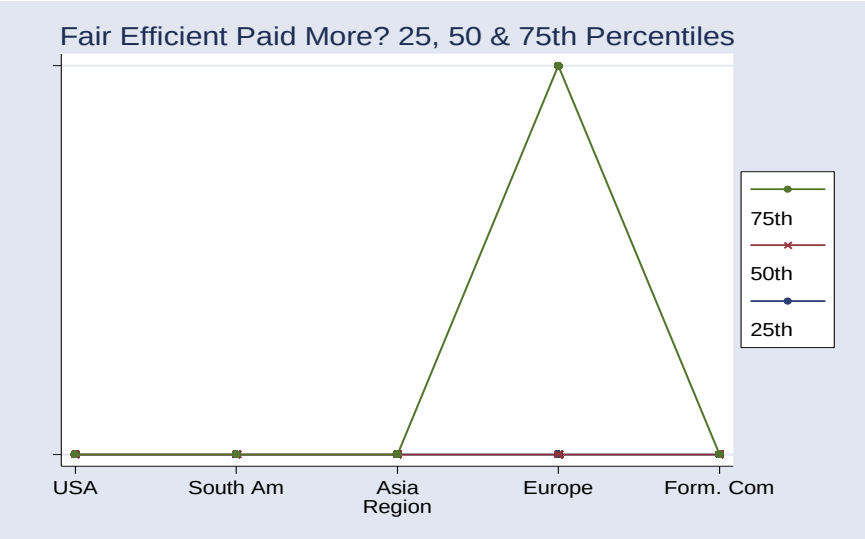


Figure 1 (continued): Percentiles of Economic Beliefs across Five Regions of the World.



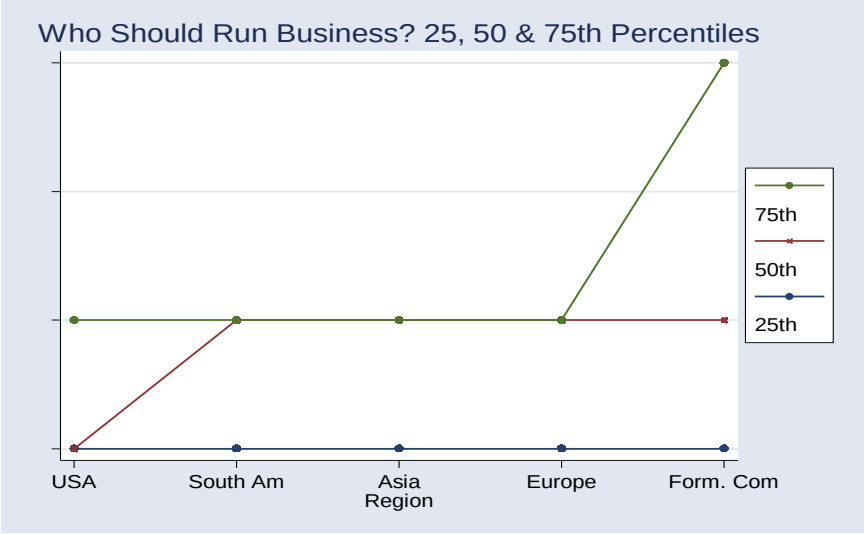
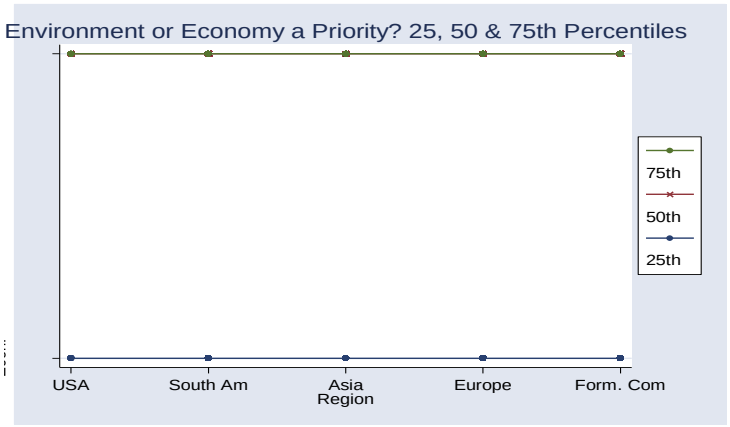
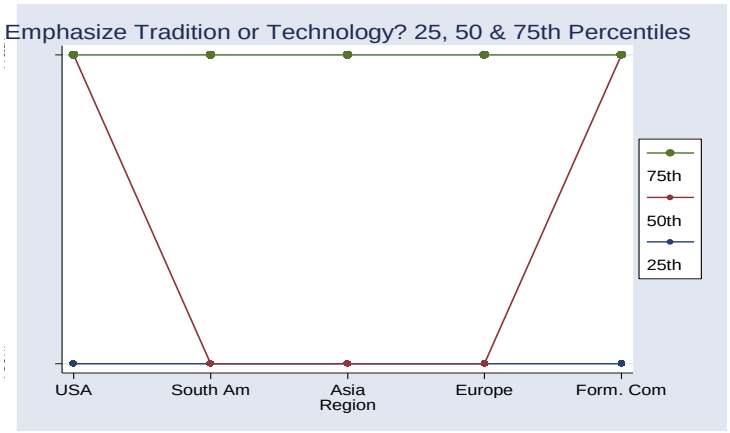


Figure 2

Percentiles of Non-Economic Beliefs across 5 Regions of the World.





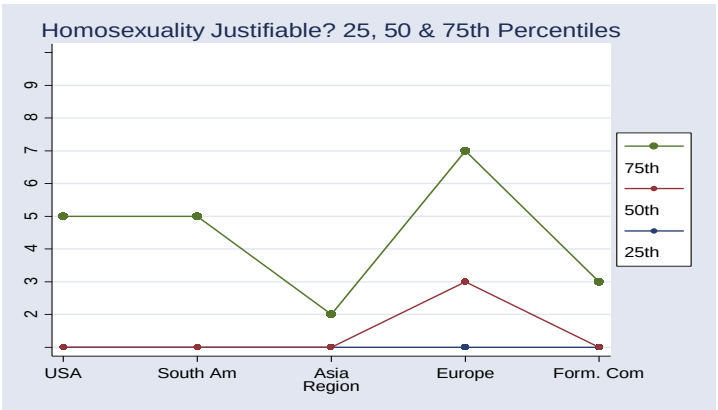
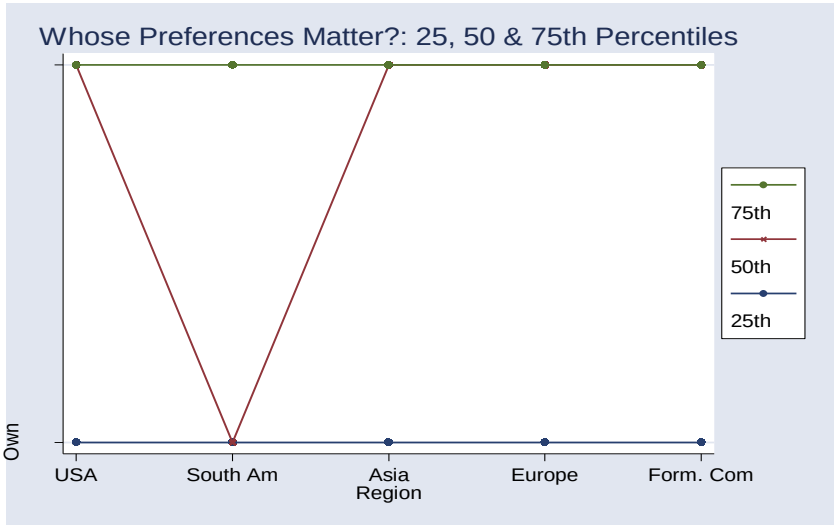


Figure 2 (continued): Percentiles of Non-Economic Beliefs across 5 Regions of the World.



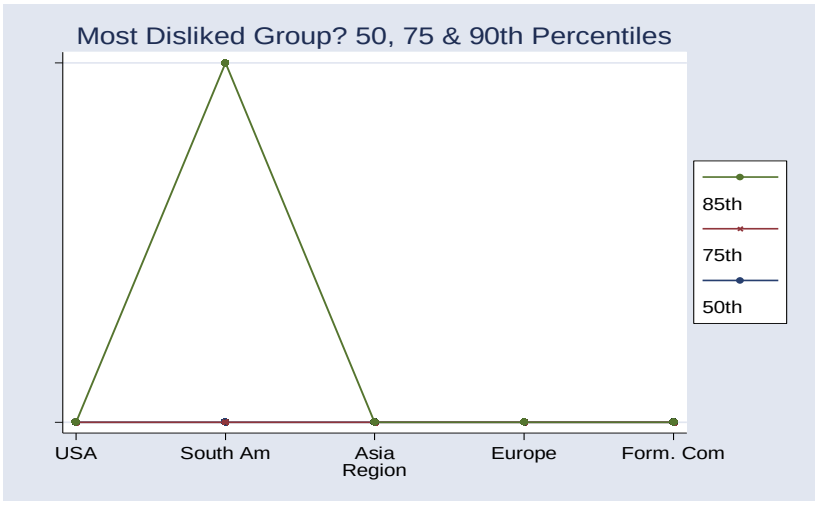


Table 1.a

Correlation Coefficients between Economic Values and Beliefs, 1981-95.

	Unfair for Poor - L	*No Escape - L*	*Government help Poor-L*	*Business Ownership-L*	*Fair Pay-L*
Unfair for Poor – L	1				
No Escape – L	0.39	1			
Government help Poor – L	0.36	0.32	1		
Business Ownership – L	0.11	0.09	0.10	1	
Fair Pay – L	0.02	-0.01	-0.03	0.05	1

Note: Data are from World Values Survey and are based on 47,567 observations. p-values are reported below the coefficients.

Table 1.b

Factor Analysis of Economic Attributes: Principal Factors, Two factors are retained.

	Eigenvalue	Proportion	Cumulative
Factor 1	1.764	0.353	0.3527
Factor 2	1.021	0.204	0.5569
Factor 3	0.945	0.189	0.7458
Factor 4	0.675	0.135	0.8809
Factor 5	0.596	0.119	1

Note: Results are based on 47,567 observations.

Table 1.c

Economic Attributes: Factor Loadings

	Factor 1	Factor 2
Unfair for Poor – L	0.771	0.057
No Escape – L	0.746	-0.022
Government help Poor – L	0.731	-0.086
Business Ownership- L	0.271	0.465
Fair Pay – L	-0.057	0.892

Note: Results are based on 47,567 observations. Rotated Factor Loadings, Varimax normalized.

Table 2.a

Correlation Coefficients between Non-Economic Values and Beliefs, 1981-95.

	Environment-L	*Tradition vs Technology-R*	*Homosexuals-L*	*Tolerance-L*	*Capitalists-L*
Environment – L	1.000				
Tradition vs Technology - R	0.082	1.000			
Homosexuals – L	0.078	-0.019	1.000		
Tolerance – L	0.081	0.063	0.062	1.000	
Capitalists – L	0.002	0.008	-0.023	-0.029	1.000

Note: Data are from World Values Survey and are based on 39,039 observations. p-values are reported below the coefficients.

Table 2.b

Factor Analysis of Non-Economic Attributes: Principal Factors, Three factors are retained.

	Eigenvalue	Proportion	Cumulative
Factor 1	1.173	0.235	0.235
Factor 2	1.014	0.203	0.437
Factor 3	1.012	0.202	0.640
Factor 4	0.918	0.184	0.823
Factor 5	0.884	0.177	1.000

Note: Results are based on 39,039 observations.

Table 2.c

Non-Economic Attributes: Factor Loadings.

	Factor 1	Factor 2	Factor 3
Environment – L	0.397	0.062	0.528
Tradition vs Technology - R	-0.190	0.054	0.821
Homosexuals – L	0.832	0.094	-0.156
Tolerance – L	0.443	-0.356	0.343
Capitalists – L	0.057	0.934	0.049

Note: Results are based on 39,039 observations. Rotated Factor Loadings, Varimax normalized.

Figure 3a: (Average) GDP Growth Rates and Leftist Beliefs about Why People are Poor / in Need? (0=*Laziness*; 1=*Unfairness*), 1980-97.

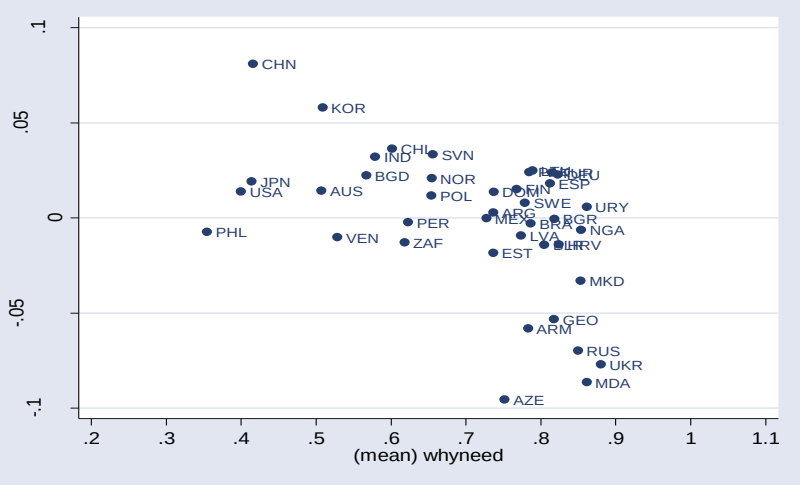


Figure 3b: (Average) GDP Growth Rate and Leftist beliefs on 'Chance of Escaping Poverty' (0=*Chance*; 1=*Very Little Chance*), 1980-97

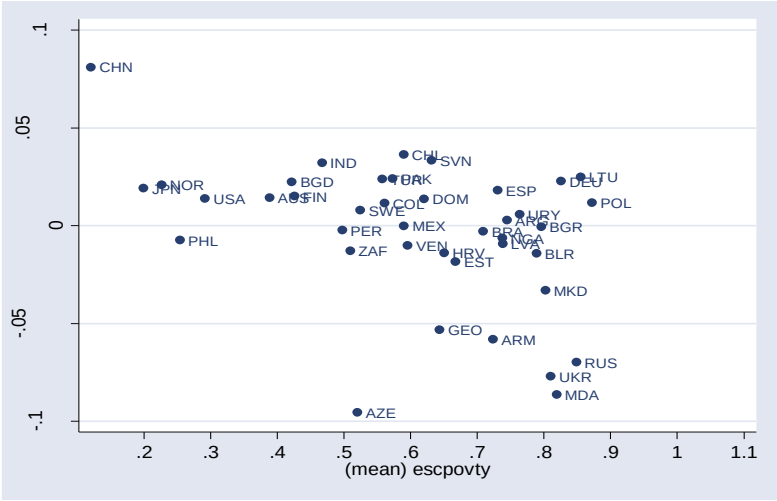


Figure 3c: (Average) GDP Growth Rates and Leftist beliefs on what Government is Doing for the Poor (0=*Too much*; 1=*About right*; 2=*Too little*), 1980-97.

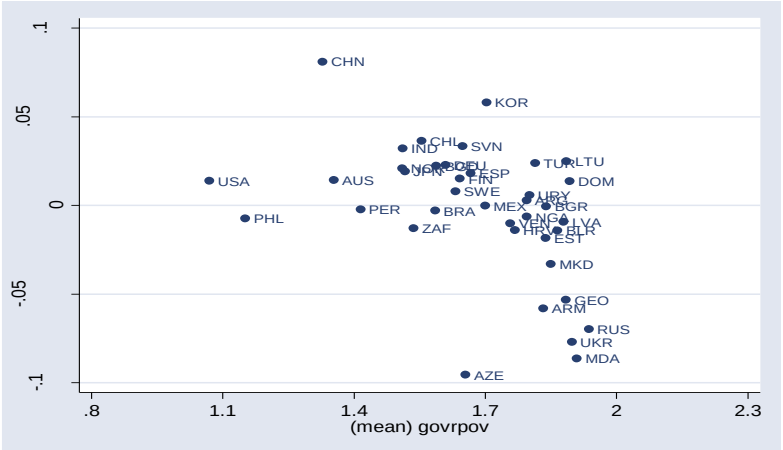


Figure 3d: (Average) GDP Growth Rates and Leftist beliefs on How Business should be Managed (0=*Owners*; 1=*Owners/Employees*; 2=*Government*; 3=*Employees*), 1980-97.

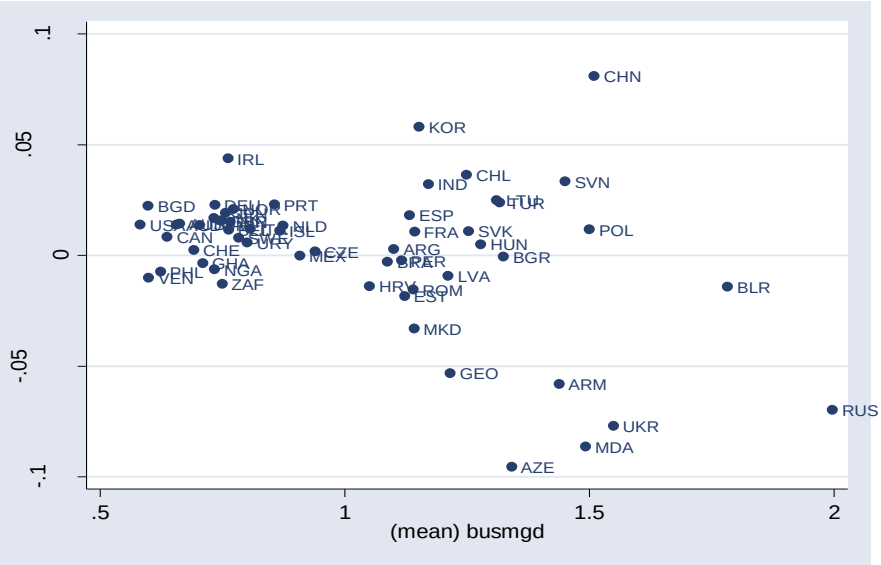


Figure 3e: (Average) GDP Growth Rates and Leftist beliefs on whether it is Fair that Efficiency is Rewarded (0=*Fair*; 1=*Not Fair*), 1980-97.

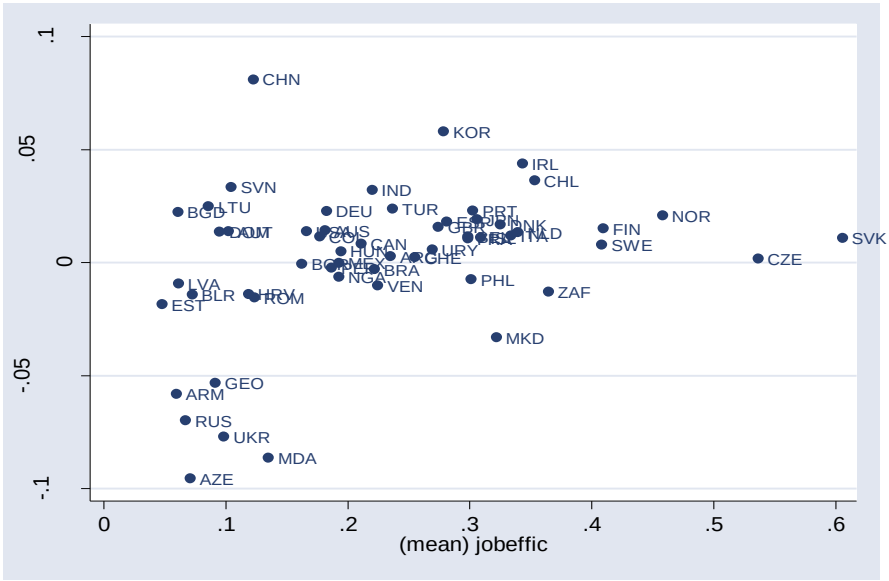


Table 3.a

Growth Regressions on Economic Attributes of Values/Beliefs

Dependent Variable: **Growth Rate (1981-97)**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Economic Attributes						
Poverty: Unfair for Poor - L	**-0.12**** **(0.04)**					
No Escape - L		**-0.07**** **(0.03)**				
Gov't help Poor - L			**-0.08**** **(0.03)**			
Production: Business Ownership- L				**-0.03**** **(0.01)**		
Incentives: Fair Pay - L					**0.09**** **(0.03)**	
Economic factor 1						**-0.04**** **(0.01)**
Economic factor 2						0.02 (0.04)
R^2 overall	0.04	0.03	0.03	0.01	0.02	0.05
No. of Observations	584	584	550	850	833	533
No. of Groups	40	40	38	56	55	37

Note: Regressions estimated using Random (Country) Effects. Standard errors are in parentheses. Bold-face is significant at 10 percent level; Starred-bold at 5 per cent level; Double-starred bold at 1 percent level. Economic Attributes have L (R) extension if higher numbers mean more Left (Right). They are the 1980-1997 (average) answers to the following questions:

Unfair for Poor-L: Why in your opinion are there people in this country who live in need? Here are two opinions: which is closest to yours? *"1. They are poor because of laziness & lack of willpower, OR 2. They are poor because society treats them unfairly."* (*Unfair for Poor-L* was redefined to equal 0 if the answer is category (1) and 1 if the answer is category (2)).

No Escape-L: In your opinion, do most poor people in this country have a chance of escaping from poverty, or there is very little chance of escaping? *"1. They have a chance, OR 2. There is very little chance."* (*No Escape-L* was redefined to equal 0 if the answer is category (1) and 1 if the answer is category (2)).

Govt' help Poor-L: Do you think that what the government is doing for people in poverty in this country is about the right amount, too much, or too little? *"1. Too much, OR 2. About the right amount, OR 3. Too little."*

Business Ownership-L: There is a lot of discussion about how business and industry should be managed. Which of these four statements comes closest to your opinion? "*1. The owners should run their business or appoint the managers. 2. The owners and the employees should participate in the selection of managers. 3. The government should be the owner and appoint the managers. 4. The employees should own the business and should elect the managers."*

Fair Pay-L: Imagine two secretaries, of the same age, doing practically the same job. One finds out that the other earns considerably 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? *"1. Fair, OR 2. Not fair."* (*Fair Pay-L* was redefined to equal 0 if the answer is category (1) and 1 if the answer is category (2)).

Economic factor 1/2: These are the two factors and corresponding loadings on the five belief variables from Table 1c.

Table 3.b

Growth Regressions on Economic Attributes of Values/Beliefs

Dependent Variable: Growth Rate (1981-97)	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
GDP 1975-1980	**-2e-6****	**-2e-6***	**-2e-6****	**-1e-6**	**-2e-6***	**-2e-6***
	(8e-7)	**(9e-7)**	**(9e-7)**	**(8e-7)**	**(7e-7)**	**(9e-7)**
Trade: Openness	**0.08****	**0.08****	**0.08****	**0.03**	0.03	**0.09****
	(0.03)	**(0.03)**	**(0.03)**	**(0.02)**	(0.02)	**(0.03)**
Institutions: German Legal Origin	-0.01	-0.02	0.004	0.01	-0.01	-0.02
	(0.02)	(0.03)	(0.02)	(0.01)	(0.02)	(0.03)
Scandinavian Leg. Origin	-0.05	**-0.07***	-0.04	-0.003	-0.05	**-0.07***
	(0.03)	**(0.03)**	(0.03)	(0.02)	(0.03)	**(0.03)**
Socialist Leg. Origin	**-0.05****	**-0.05****	**-0.04***	**-0.04****	**-0.03***	**-0.04****
	(0.02)	**(0.02)**	**(0.02)**	**(0.01)**	**(0.01)**	**(0.02)**
English Legal Origin	-0.003	-0.006	-0.005	0.01	0.01	-0.005
	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.02)
Geography: Latitude	**0.11***	**0.09**	0.08	0.04	0.03	**0.09**
	(0.05)	**(0.05)**	(0.05)	(0.04)	(0.04)	**(0.06)**
Economic Attributes						
Poverty: Unfair for Poor - L	**-0.12****					
	(0.04)					
No Escape - L		**-0.08****				
		(0.03)				
Gov't help Poor - L			**-0.07***			
			(0.03)			
Production: Business Ownership- L				0.02		
				(0.02)		
Incentives: Fair Pay - L					0.05	
					(0.04)	
Economic factor 1						**-0.04****
						(0.01)
Economic factor 2						0.04
						(0.04)
R^2 overall	0.10	0.07	0.09	0.05	0.06	0.09
No. of Observations	571	571	537	820	803	520
No. of Groups	38	38	36	53	52	35

Note: Regressions estimated using Random (Country) Effects. Standard errors are in parentheses. Bold-face is significant at 10 percent level; Starred-bold at 5 per cent level; Double-starred bold at 1 percent level. Economic Attributes have L (R) extension if higher numbers mean more Left (Right). They are the 1980-1997 (average) answers to the following questions:

Unfair for Poor-L: Why in your opinion are there people in this country who live in need? Here are two opinions: which is closest to your view? *"1. They are poor because of laziness & lack of willpower, OR 2. They are poor because society treats them unfairly."* (*Unfair for Poor-L* was redefined to equal 0 if the answer is category (1) and 1 if the answer is category (2)).

No Escape-L: In your opinion, do most poor people in this country have a chance of escaping from poverty, or there is very little chance of escaping? *"1. They have a chance, OR 2. There is very little chance."* (*No Escape-L* was redefined to equal 0 if the answer is category (1) and 1 if the answer is category (2)).

Govt' help Poor-L: Do you think that what the government is doing for people in poverty in this country is about the right amount, too much, or too little? *"1. Too much, OR 2. About the right amount, OR 3. Too little."*

Business Ownership-L: There is a lot of discussion about how business and industry should be managed. Which of these four statements comes closest to your opinion? "*1. The owners should run their business or appoint the managers. 2. The owners and the employees should participate in the selection of managers. 3. The government should be the owner and appoint the managers. 4. The employees should own the business and should elect the managers."*

Fair Pay-L: Imagine two secretaries, of the same age, doing practically the same job. One finds out that the other earns considerably 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? *"1. Fair, OR 2. Not fair."* (*Fair Pay-L* was redefined to equal 0 if the answer is category (1) and 1 if the answer is category (2)).

Economic factor 1, 2: The factors and corresponding loadings on the five belief variables from Table 1c.

Figure 4a: (Average) GDP Growth Rates and Leftist Beliefs about whether Economy or Environment has Priority? (1=*Economy*; 10=*Environment*), 1980-97.

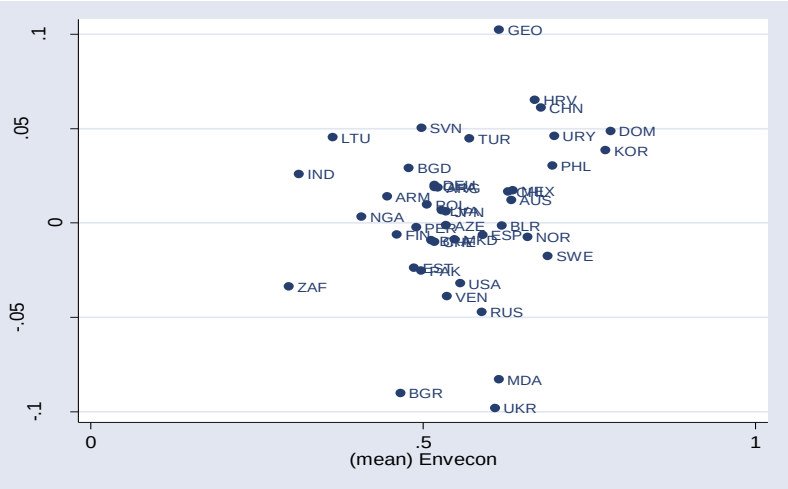


Figure 4b: (Average) GDP Growth Rate and Beliefs on whether we should Emphasize Technology or Tradition (0=*Technology*; 1=*Tradition*), 1980-97

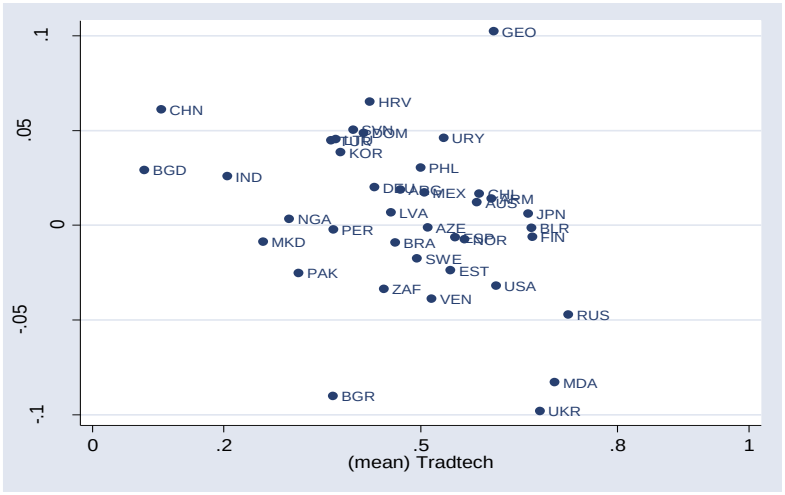


Figure 4c: (Average) GDP Growth Rates and Leftist Beliefs about Morality of Homosexuality? (1=*Never Justifiable*; 10=*Always Justifiable*), 1980-97.

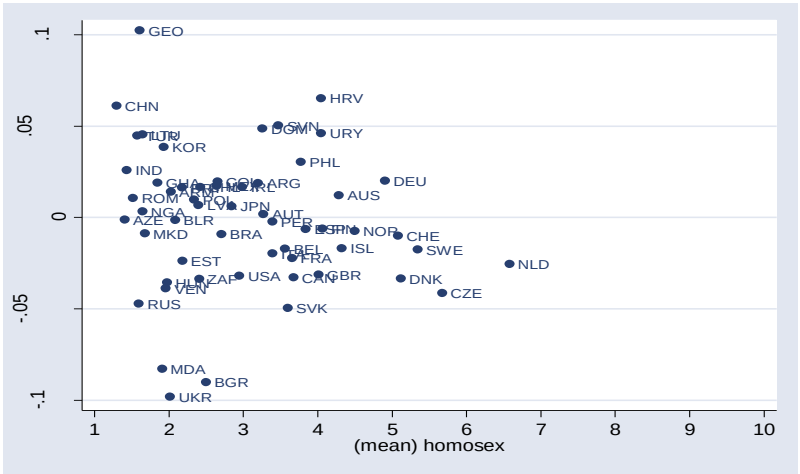


Figure 4d: (Average) GDP Growth Rates and Leftist beliefs on whose Preferences Matter (0=*Own Most Important*; 1=*Others' Most Important*), 1980-97.

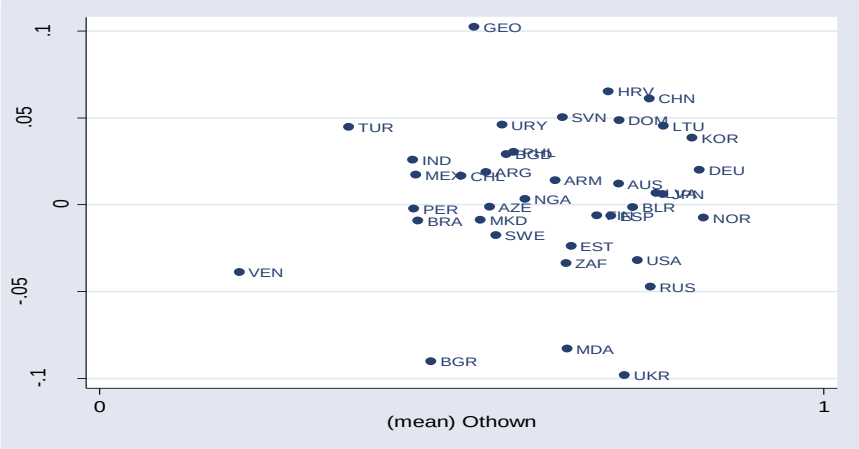


Figure 4e: (Average) GDP Growth Rates and Leftist beliefs on Most Disliked Group (0=*Jews/Immigrants/Criminals/Neo-Nazis/Homosexuals*; 1=*Capitalists*), 1980-97.

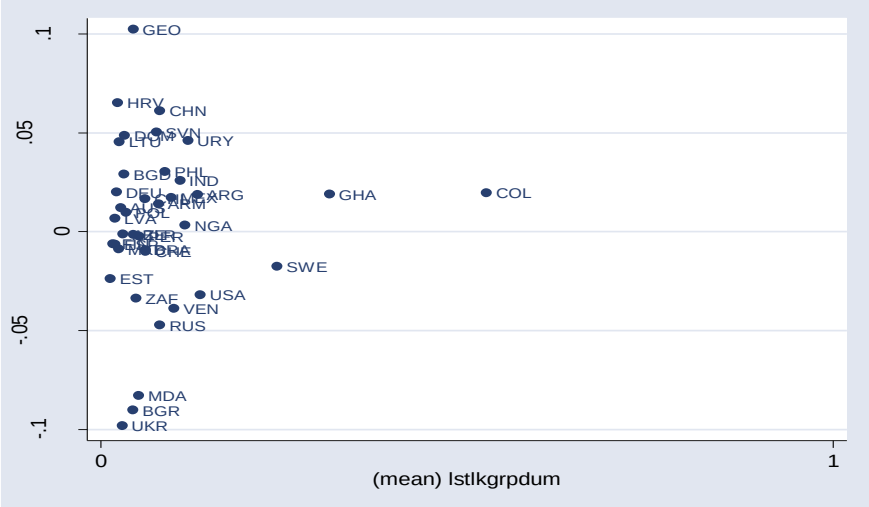


Table 4.a

Cross-Sectional Growth Regressions on Non-Economic Attributes of Values/Beliefs

Dependent Variable: **Growth Rate (1981-97)**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Non-Economic Attributes						
Nature: Environment – L	0.03 (0.05)					
Tradition vs Technology - R		**-0.12** (0.04)**				
Authoritarian & Moral: Homosexuals - L			**0.006 (0.003)**			
Tolerance - L				0.03 (0.04)		
Capitalists - L					0.05 (0.06)	
Non-Economic factor 1						0.004 (0.01)
Non-Economic factor 2						-0.07 (0.07)
Non-Economic factor 3						**-0.12** (0.04)**
R^2 overall	0.01	0.05	0.05	0.01	0.01	0.06
No. of Observations	618	567	850	550	550	465
No. of Groups	42	39	56	38	38	33

Note: Regressions estimated using Random (Country) Effects. Standard errors in parentheses. Bold-face significant at 10 percent level; Starred bold at 5 per cent level; Double-starred bold at 1 percent level. Non-Economic Attributes have L (R) extension if higher numbers mean more Left (Right). They are the 1980-1997 (average) answers to the following questions:

Environment-L: Here are two statements people sometimes make when discussing the environment and economic growth. Which of them comes closer to your own point of view? *"1. Protecting the environment should be given priority, even if it causes slower economic growth and some loss of jobs, OR 2. Economic growth and creating jobs should be the top priority, even if the environment suffers to some extent."* (*Environment-L* was redefined to equal 0 if the answer is category (2) and 1 if it is category (1)).

Tradition vs Technology-R: For the following statements, please tell me which one comes closest to your own views. *"1. We should emphasize tradition more than high technology, OR 2. We should emphasize high technology more than tradition."* (*Tradition vs Technology-L* was redefined to equal 0 if the answer is category (2) and 1 if the answer is category (1)).

Homosexuals-L: Please tell me if homosexuality can always be justified, never be justified or something in between, using this card. *"Card shows a scale from 1 to 10 where 1= Never justifiable, 10= Always justifiable."*

Tolerance-L: For the following pair of statements, please tell me which one comes closest to your own views. *"1. To build good human relationships, it is most important to try to understand other's preferences, OR 2. To build good relationships, it is most important to express one's own preferences clearly."* (*Tolerance-L* was redefined so that it equals 0 if the answer is category (2) and 1 if the answer is category (1)).

Capitalists-L: I'd like to ask you about some groups that some people feel are threatening to the social and political order of society. Would you please select from the following list the one group or organization that you like least? *"1. Jews; 2. Capitalists; 3. Stalinists/hard line communists; 4. Immigrants; 5. Homosexuals; 6. Criminals; 7. Neo-Nazis/Right extremists."* (*Capitalists-L* equals 1 if the answer is category (2) and 0 otherwise.)

Non-Economic factor 1, 2, 3: The factors and corresponding loadings on the five belief variables from Table 2c.

Table 4.b

Growth Regressions on Non-Economic Attributes of Values/Beliefs

Dependent Variable: Growth Rate (1981-97)	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
GDP 1975-1980	**-2e-6***	-1e-7	**-2e-6***	**-2e-6**	-1e-6	-8e-7
	(9e-7)	(8e-7)	**(9e-7)**	**(9e-7)**	(1e-6)	(1e-6)
Trade: Openness	**0.05**	**0.06***	0.03	**0.07***	**0.07***	**0.07***
	(0.03)	**(0.03)**	(0.02)	**(0.03)**	**(0.03)**	**(0.04)**
Institutions: German Legal Origin	0.004	0.001	0.01	-0.004	-0.03	-0.06
	(0.02)	(0.02)	(0.02)	(0.03)	(0.04)	(0.04)
Scandinavian Legal Origin	-0.02	-0.04	-0.01	-0.03	-0.04	-0.05
	(0.03)	(0.03)	(0.02)	(0.03)	(0.04)	(0.04)
Socialist Legal Origin	**-0.04***	**-0.05****	**-0.03***	**-0.05***	**-0.05***	**-0.05***
	(0.02)	**(0.02)**	**(0.01)**	**(0.02)**	**(0.02)**	**(0.03)**
English Legal Origin	0.01	-0.01	0.004	-0.001	0.003	-0.01
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)
Geography: Latitude	0.06	**0.08**	0.04	0.02	0.07	0.07
	(0.05)	**(0.05)**	(0.04)	(0.06)	(0.07)	(0.07)
Non-Economic Attributes						
Nature: Environment – L	0.06					
	(0.06)					
Tradition vs Technology - R		**-0.14****				
		(0.04)				
Authoritarian & Moral: Homosexuals - L			0.002			
			(0.005)			
Tolerance - L				0.07		
				(0.05)		
Capitalists - L					0.04	
					(0.07)	
Non-Economic factor 1						0.002
						(0.01)
Non-Economic factor 2						-0.14
						(0.10)
Non-Economic factor 3						**-0.11***
						(0.05)
R^2 overall	0.06	0.11	0.04	0.08	0.04	0.08
No. of Observations	605	554	820	537	537	452
No. of Groups	40	37	53	36	36	31

Note: Regressions estimated using Random (Country) Effects. Standard errors in parentheses. Bold-face is significant at 10 percent level; Starred bold at 5 per cent level; Double-starred bold at 1 percent level. Non-Economic Attributes have L (R) extension if higher numbers mean more Left (Right). They are the 1980-1997 (average) answers to the following questions:

Environment-L: Here are 2 statements people sometimes make when discussing the environment & economic growth. Which comes closer to your own point of view? *"1. Protecting the environment should be given priority, even if it causes slower economic growth and some loss of jobs, OR 2. Economic growth and creating jobs should be the top priority, even if the environment suffers to some extent."* (*Environment*-L redefined to equal 0 if the answer is category (2) and 1 if it is category (1)).

Tradition vs Technology-R: For the following statements, please tell me which one comes closest to your own views. *"1. We should emphasize tradition more than high technology, OR 2. We should emphasize high technology more than tradition."* (*Tradition vs Technology*-R was redefined to equal 0 if the answer is category (2) and 1 if the answer is category (1)).

Homosexuals-L: Please tell me if homosexuality can always be justified, never be justified or something in between, using this card. *"Card shows a scale from 1 to 10 where 1= Never justifiable, 10= Always justifiable."*

Tolerance-L: Please tell me which [statement] comes closest to your own views. *"1. To build good human relationships, it is most important to try to understand other's preferences. 2. To build good relationships, it is most important to express one's own preferences clearly."* (*Tolerance*-L was redefined so that it equals 0 if the answer is category (2) and 1 if the answer is category (1)).

Capitalists-L: I'd like to ask you about some groups that some people feel are threatening to the social and political order of society. Would you please select from the following list the one group or organization that you like least? *"1. Jews; 2. Capitalists; 3. Stalinists/hard line communists; 4. Immigrants; 5. Homosexuals; 6. Criminals; 7. Neo-Nazis/Right extremists."* (*Capitalists*-L equals 1 if the answer is category (2) and 0 otherwise.)

Non-Economic factor 1, 2, 3: The factors and corresponding loadings on the five belief variables from Table 2c.

Table 5a

Growth Regressions on Mean and Dispersion of Values/Beliefs

Dependent Variable: Growth Rate (1981-97)	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
GDP 1975-1980	**-2e-6***	**-1e-6**	**-2e-6***	**-1e-6**	**-2e-6***	**-2e-6**
	(8e-7)	**(8e-7)**	**(1e-6)**	**(8e-7)**	**(7e-7)**	**(1e-6)**
Trade	**0.08****	**0.08****	**0.08****	**0.03**	0.03	**0.09****
	(0.03)	**(0.03)**	**(0.03)**	**(0.02)**	(0.02)	**(0.03)**
Institutions: German Legal Origin	-0.01	-0.04	0.005	0.01	0.02	-0.02
	(0.02)	(0.03)	(0.02)	(0.02)	(0.02)	(0.03)
Scandinavian Legal Origin	**-0.05**	**-0.07***	-0.05	-0.01	-0.004	**-0.08***
	(0.03)	**(0.03)**	(0.03)	(0.02)	(0.02)	**(0.04)**
Socialist Legal Origin	**-0.05****	**-0.06****	**-0.05***	**-0.04***	-0.02	**-0.05****
	(0.02)	**(0.02)**	**(0.02)**	**(0.01)**	(0.02)	**(0.02)**
English Legal Origin	-0.002	-0.002	-0.002	0.001	0.008	-0.005
	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.02)
Geography: Latitude	**0.10***	0.07	0.08	0.04	0.03	0.10
	(0.05)	(0.05)	(0.06)	(0.04)	(0.04)	(0.06)
Economic Attributes:						
Poverty: (mean) Unfair for Poor - L	-0.08					
	(0.07)					
(standard deviation)	0.13					
	(0.20)					
(mean) No Escape – L		**-0.08****				
		(0.03)				
(standard deviation)		**-0.28****				
		(0.12)				
(mean) Gov't help Poor – L			-0.12			
			(0.09)			
(standard deviation)			-0.11			
			(0.19)			
Production: *(mean)* Business Ownership - L				0.02		
				(0.03)		
(standard deviation)				-0.03		
				(0.06)		
Incentives: *(mean)* Fair Pay – L					-0.02	
					(0.10)	
(standard deviation)					0.14	
					(0.17)	
Economic Factor 1 (mean)						**-0.05***
						(0.02)
(standard deviation)						0.06
						(0.06)
Economic Factor 2 (mean)						-0.02
						(0.09)
(standard deviation)						-0.08
						(0.16)
R^2 overall	0.10	0.09	0.09	0.05	0.06	0.10
No. of Observations	571	571	537	820	803	520
No. of Groups	38	38	36	53	52	35

Note: Regressions estimated using Random (Country) Effects. Standard errors in parentheses. Bold-face is significant at 10 percent level; Starred-bold at 5 per cent level; Double-starred bold at 1 percent level. For definitions of the economic attributes and factors, see the footnote to Table 3a and appendix 1.

Table 5b

Growth Regressions on Mean and Dispersion of Values/Beliefs

Dependent Variable: Growth Rate (1981-97)	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
GDP 1975-1980	**-2e-6**	4e-8	**-2e-6***	**-2e-6**	-1e-6	-6e-7
	(9e-7)	(8e-7)	**(9e-7)**	**(9e-7)**	(1e-6)	(1e-6)
Trade	**0.05**	**0.07***	0.03	**0.07***	**0.07***	**0.11****
	(0.03)	**(0.03)**	(0.02)	**(0.03)**	**(0.03)**	**(0.03)**
Institutions: German Legal Origin	0.001	-0.006	0.01	-0.01	-0.03	-0.06
	(0.02)	(0.02)	(0.02)	(0.03)	(0.04)	(0.04)
Scandinavian Legal Origin	-0.03	**-0.05**	-0.007	-0.03	-0.04	-0.04
	(0.03)	**(0.03)**	(0.02)	(0.03)	(0.04)	(0.04)
Socialist Legal Origin	**-0.04***	**-0.06****	**-0.03***	**-0.05***	**-0.05***	**-0.06***
	(0.02)	**(0.02)**	**(0.01)**	**(0.02)**	**(0.02)**	**(0.03)**
English Legal Origin	0.01	-0.02	0.005	5e-4	0.003	**-0.03**
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	**(0.02)**
Geography: Latitude	0.06	**0.08**	0.04	0.02	0.07	0.03
	(0.06)	**(0.04)**	(0.04)	(0.06)	(0.07)	(0.07)
Non-Economic Attributes:						
Nature: *(mean)* Environment - L	0.03					
	(0.07)					
(standard deviation)	-0.18					
	(0.31)					
(mean) Tradition vs Technology - R		**-0.10***				
		(0.04)				
(standard deviation)		**-0.22**				
		(0.14)				
Authoritarian & Moral: *(mean)* Homosexuals - L			-0.003			
			(0.008)			
(standard deviation)			0.01			
			(0.02)			
(mean) Tolerance – L				0.05		
				(0.06)		
(standard deviation)				-0.19		
				(0.19)		
(mean) Capitalists – L					0.04	
					(0.14)	
(standard deviation)					0.003	
					(0.15)	
Non-Economic Factor 1 *(mean)*						0.02
						(0.02)
(standard deviation)						0.02
						(0.04)
Non-Economic Factor 2 *(mean)*						**-0.35***
						(0.15)
(standard deviation)						**0.41***
						(0.21)
Non-Economic Factor 3 *(mean)*						**-0.07**
						(0.04)
(standard deviation)						**-0.38**
						(0.21)
R^2 overall	0.06	0.12	0.04	0.08	0.04	0.14
No. of Observations	605	554	820	537	537	452
No. of Groups	40	37	53	36	36	31

Note: Regressions estimated using Random (Country) Effects. Standard errors in parentheses. Bold-face is significant at 10 percent level; Starred-bold at 5 per cent level; Double-starred bold at 1 percent level. For definitions of the non-economic attributes and factors, see the footnote to Table 4a and appendix 1.

Table 6a

The Origins of Economic Beliefs, Probit Regressions, 1981-95.

Dependent Variable:	**(1)** *Unfair for Poor-L*	**(2)** *No Escape-L*	**(3)** *Gov't help Poor-L*	**(4)** *Bus. Own.-L*	**(5)** *Fair Pay-L*
Fuel Exports	0.43	0.46	**1.81***	-1.06	0.16
	(0.33)	(0.29)	**(0.74)**	(0.88)	(0.19)
Country Risk	**0.44***	**0.84****	**1.36***	**1.19****	0.30
	(0.21)	**(0.26)**	**(0.65)**	**(0.45)**	(0.20)
Personal Income Quintile: 2nd	0.02	0.03	0.05	0.03	**-0.03****
	(0.03)	(0.03)	(0.06)	(0.06)	**(0.01)**
3rd	-0.02	0.01	0.02	0.01	**-0.04****
	(0.04)	(0.05)	(0.10)	(0.06)	**(0.01)**
4th	-0.04	0.01	-0.03	**-0.12**	**-0.06****
	(0.04)	(0.04)	(0.10)	**(0.06)**	**(0.01)**
5th	-0.05	-0.01	-0.12	**-0.28****	**-0.11****
	(0.04)	(0.04)	(0.11)	**(0.06)**	**(0.01)**
Work Status: Unemployed	**0.09****	**0.10****	**0.22****	**0.01****	**0.06****
	(0.03)	**(0.03)**	**(0.07)**	**(0.05)**	**(0.01)**
Self employed	**-0.05***	-0.05	-0.04	**-0.20****	-0.01
	(0.02)	(0.03)	(0.08)	**(0.08)**	(0.01)
Retired	**0.09****	**0.09****	**0.21****	0.06	-2.6e-3
	(0.02)	**(0.03)**	**(0.07)**	(0.04)	(0.01)
Student	0.02	4.2e-3	-0.04	-0.01	-0.01
	(0.03)	(0.03)	(0.07)	(0.04)	(0.01)
Home	-0.02	-0.01	-0.06	**-0.11**	0.02
	(0.03)	(0.04)	(0.08)	**(0.06)**	(0.02)
Male	**-0.05****	**-0.06****	**-0.10****	**-0.06***	**-0.02****
	(0.02)	**(0.02)**	**(0.03)**	**(0.03)**	**(0.01)**
Age	**0.01***	**0.01**	**0.01****	**0.01**	**-1.8e-3**
	(2.4e-3)	**(2.0e-3)**	**(5.4e-3)**	**(3.7e-3)**	**(8.3e-4)**
Age squared	-6.7e-5	-5.0e-5	-2.1e-4	-1.1e-4	3.0e-6
	(2.4e-5)	(2.0e-5)	(5.5e-5)	(3.8e-5)	(9.1e-6)
Pseudo-R^2	0.03	0.04	0.03	0.01	0.02
Number of observations	25,670	29,728	26,420	82,945	82,859

Note: Standard errors in parentheses. Bold-face is significant at 10 percent level; Starred-bold at 5 per cent level; Double-starred bold at 1 percent level. Cols (1), (2) and (5) are probits, marginal probabilities reported; cols (3) and (4) are ordered probits (cut_1=-0.92, s.e.=0.25; cut_2=0.22, s.e.=0.20 for col (3); cut_1=-0.13, s.e.=0.17; cut_2=1.10, s.e.=0.14, cut_3=1.34 s.e.=0.14 for col (4)); Number of nations is 27 for cols (1-2), 25 for col. (3), 42 for col. (4) and 40 for col. (5). For definitions of the dependent variables in columns (1-5), see the footnote to Table 3a and appendix 1. Standard errors on *Country Risk* and *Fuel Exports* adjusted to take account of clustering within countries.

Table 6b

The Origins of Non-Economic Beliefs, Probit Regressions, 1981-95.

Dependent Variable:	**(1)** *Environment-L*	**(2)** *Trad. vs Tech.-R*	**(3)** *Homosex.-L*	**(4)** *Tolerance-L*	**(5)** *Capitalists-L*
Fuel Exports	**-0.27**	0.41	-0.72	0.04	-3.3e-3
	(0.15)	(0.26)	(0.74)	(0.44)	(0.17)
Country Risk	**-0.34****	**-0.89****	**-2.70****	**-0.67****	0.04
	(0.14)	**(0.21)**	**(0.64)**	**(0.22)**	(0.20)
Personal Income Quintile: 2nd	0.02	-4.3e-3	0.02	0.01	**-0.04**
	(0.02)	(0.04)	(0.03)	(0.02)	**(0.03)**
3rd	0.03	-0.05	**0.08**	**0.07***	**-0.07**
	(0.03)	(0.04)	**(0.04)**	**(0.03)**	**(0.05)**
4th	**0.05***	-0.03	**0.13****	**0.09***	**-0.08**
	(0.02)	(0.04)	**(0.05)**	**(0.04)**	**(0.05)**
5th	**0.06***	**-0.07***	**0.23****	**0.08**	**-0.08**
	(0.03)	**(0.04)**	**(0.07)**	**(0.04)**	**(0.05)**
Work Status: Unemployed	**-0.05***	**0.05**	0.01	**-0.06****	-1.7e-3
	(0.02)	**(0.03)**	(0.05)	**(0.02)**	(0.01)
Self employed	-0.01	-0.01	**-0.12***	-0.02	-0.01
	(0.03)	(0.03)	**(0.06)**	(0.04)	(0.01)
Retired	1.8e-3	0.04	-0.02	-1.3e-3	-0.04
	(0.02)	(0.03)	(0.05)	(0.02)	(0.04)
Student	0.01	-0.05	**0.21****	-0.01	**-0.03***
	(0.02)	(0.03)	**(0.05)**	(0.02)	**(0.01)**
Home	-0.03	0.02	**-0.22****	**-0.08***	-8.5e-4
	(0.02)	(0.05)	**(0.06)**	**(0.03)**	(0.01)
Male	**-0.02***	**-0.10****	**-0.20****	**-0.03***	**0.02****
	(0.01)	**(0.02)**	**(0.03)**	**(0.01)**	**(0.01)**
Age	3.5e-5	3.3e-4	0.01	1.7e-3	-1.1e-3
	(1.6e-3)	(2.5e-3)	(4.0e-3)	(1.3e-3)	(1.6e-3)
Age squared	-2.4e-5	2.5e-5	-2.0e-4	3.3e-7	1.2e-5
	(2.0e-5)	(2.7e-5)	(4.1e-5)	(1.5e-5)	(1.6e-5)
Pseudo-R^2	0.01	0.05	0.04	0.04	0.02
Number of observations	25,739	25,577	89,606	26,402	27,027

Note: Standard errors in parentheses. Bold-face is significant at 10 percent level; Starred-bold at 5 per cent level; Double-starred bold at 1 percent level. Cols (1), (2), (4) and (5) are probits, marginal probabilities reported; col. (3) is ordered probit (cut_1=-0.87, s.e.=0.20; cut_2=-0.72, s.e.=0.20; cut_3=-0.58, s.e.=0.20; cut_4=-0.47, s.e.=0.20; cut_5=-0.10, s.e.=0.20; cut_6=0.06, s.e.=0.20; cut_7=0.19, s.e.=0.20; cut_8=0.37, s.e.=0.20; cut_9=0.50, s.e.=0.20); Number of nations is 28 for col. (1), 26 for col. (2), 42 for col. (3), 25 for col. (4) and 24 for col. (5); For definitions of the dependent variables in columns (1-5), see the footnote to Table 4a and appendix 1. Standard errors on *Country Risk* and *Fuel Exports* adjusted to take account of clustering within countries.

Appendix: List of Countries and Survey Description

Table A: List of Countries

South America (10)	Europe (18)	Asia (8)	Former Communist (24)
Argentina, Brazil, Chile, Colombia, Dominican Republic, Mexico, Peru, Puerto Rico, Uruguay and Venezuela.	Austria, Belgium, Switzerland, Germany, Denmark, Spain, Finland, France, England, Ireland, Israel, Italy, Northern Ireland, Netherlands, Norway, Portugal, Sweden and Turkey.	Bangladesh, China, India, Japan, Korea, Pakistan, Philippines and Taiwan.	Armenia, Azerbaijan, Bulgaria, Bosnia, Belarus, Croatia, Czech Republic, Estonia, East Germany, Georgia, Hungary, Kazakhstan, Lithuania, Latvia, Macedonia, Moldova, Montenegro, Poland, Romania, Russia, Slovak Republic, Slovenia, Ukraine and Serbia

Survey Descriptions

World Values Survey and European Values Survey (1981-84, 1990-92, 1995-97, 2000-04)

The Combined World Values Survey is produced by the Institute for Social Research, Ann Arbor, MI, USA. The series is designed to enable a cross-national comparison of values and norms on a wide variety of norms and to monitor changes in values and attitudes across the globe. Both national random and quota sampling were used. All of the surveys were carried out through face-to-face interviews, with a sampling universe consisting of all adult citizens, aged 18 and older, across over 60 nations around the world. The 1981-83 survey covered 22 independent countries; the 1990-93 survey covered 42 independent countries; the 1995-97 survey covered 53 independent countries. In total, 64 independent countries have been surveyed in at least one wave of this investigation (counting East Germany as an independent country, which it was when first surveyed). These countries include almost 80 percent of the world's population. A fourth wave of surveys is being carried out in 1999-2000-04.

Data Definitions

Economic Beliefs

Unfair for Poor–L: The response to the World values question: "Why, in your opinion, are there people in this country who live in need? Here are two opinions: which comes closest to your view? (1) They are poor because of laziness and lack of willpower, or (2) They are poor because society treats them unfairly." (*Unfair for Poor-L* was redefined to equal 0 if the answer is category (1) and 1 if the answer is category (2)).

No Escape–L: The response to the World Values question: "In your opinion, do most poor people in this country have a chance of escaping from poverty, or there is very little chance of escaping? (1) They have a chance or (2) There is very little chance." (*No Escape-L* was redefined to equal 0 if the answer is category (1) and 1 if the answer is category (2)).

Government help Poor–L: The response to the World Values question: "Do you think that what the government is doing for people in poverty in this country is about the right amount, too much, or too little? (1) Too much, (2) About the right amount, or (3) Too little."

Business Ownership-L: The response to the World Values question: "There is a lot of discussion about how business and industry should be managed. Which of these four statements comes closest to your opinion? (1) The owners should run their business or appoint the managers, (2) The owners and the employees should participate in the selection of managers, (3) The government should be the owner and appoint the managers, (4) The employees should own the business and should elect the managers."

Fair Pay-L: The response to the World Values question: "Imagine two secretaries, of the same age, doing practically the same job. One finds out that the other earns considerably 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? (1) Fair or (2) Not fair." (*Fair Pay-L* was redefined to equal 0 if the answer is category (1) and 1 if the answer is category (2)).

Non-Economic Beliefs

Tradition vs Technology-R: The response to the World Values question: "For the following pair of statements, please tell me which one comes closest to your own views. (1) We should emphasize tradition more than high technology, OR (2) We should emphasize high technology more than tradition." (*Tradition vs Technology-R* was redefined to equal 0 if the answer is category (2) and 1 if the answer is category (1)).

Environment-L: The response to the World Values question: "Here are two statements people sometimes make when discussing the environment and economic growth. Which of them comes closer to your own point of view? (1) Protecting the environment should be given priority, even if it causes slower economic growth and some loss of jobs. (2).

Economic growth and creating jobs should be the top priority, even if the environment suffers to some extent." (*Environment-L* was redefined to equal 0 if the answer is category (2) and 1 if the answer is category (1)).

Capitalists-L: The response to the World Values question: "I'd like to ask you about some groups that some people feel are threatening to the social and political order of society. Would you please select from the following list the one group or organization that you like least? (1) Jews; (2) Capitalists; (3) Stalinists/hard line communists (or country equivalent); (4) Immigrants; (5) Homosexuals; (6) Criminals; (7) Neo-Nazis/Right extremists (or country equivalents)." (*Capitalists-L* was redefined to equal 1 if the answer is category (2) and 0 otherwise.)

Tolerance-L: The response to the World Values question: "The response to the World Values question: "For the following pair of statements, please tell me which one comes closest to your own views. To build good human relationships (1) It is most important to try to understand other's preferences OR (2) To build good relationships, it is most important to express one's own preferences clearly." (*Tolerance-L* was redefined to equal 0 if the answer is category (2) and 1 if the answer is category (1)).

Homosexuals-L: The response to the World Values question: "Please tell me if homosexuality can always be justified, never be justified or something in between, using this card. Card shows a scale from 1 to 10 where (1)=Never justifiable, (10)=Always justifiable."

Aggregate Level Variables

Latitude: The absolute value of the geographical latitude of the country in degrees measured from the equator. That is, the range is from zero degrees (the equator) to 90 degrees at the two poles.

Trade (Openness): Imports plus exports divided by GDP (from World Development Indicators, World Bank.).

Growth Rate: The growth rate of GDP per capita in constant 1992 US$, purchasing power parity adjusted, from World Development Indicators of the World Bank.

GDP 1975-1980: Average GDP per capita between 1975 and 1980 (inclusive) in constant 1992 US$, purchasing power parity adjusted, from World Development Indicators of the World Bank.

Institutions: The quality of institutions, as proxied by whether the country has Socialist, Scandinavian, French, German or English legal origins. The base category is French origins.

Fuel Exports: Fuel Exports as a proportion of GDP (from the World Bank's World Development Indicators 2000).

Country Risk: A country risk rating on a 0-1 scale (from The PRS Group, Inc., 1979-2004, East Syracuse, NY 13057 USA). The composite rating provides a means of assessing the Political Risk, Financial Risk and Economic Risk of countries on a comparable basis. This is done by assigning risk points to a pre-set group of factors. A separate index is created for each of the subcategories. The Political Risk index is based on 100 points, Financial Risk on 50 points, and Economic Risk on 50 points. The total points from the three indices are divided by two to produce the weights for inclusion in the composite country risk score. The composite scores range from zero to 100 points.

Political Risk is an assessment of political stability that weights 12 factors covering both political and social attributes: Government Stability, Socioeconomic Conditions, Investment Profile, Internal Conflict, External Conflict, Corruption, Military in Politics, Religious Tensions, Law and Order, Ethnic Tensions, Democratic Accountability and Bureaucracy Quality. PRS staff converts political information on these factors into risk points for each of these components on the basis of subjective analysis of the available information.

Financial Risk is an assessment a country's ability to pay its way. In essence this requires a system of measuring a country's ability to finance its official, commercial, and trade debt obligations. It weights the five factors: Foreign Debt as a Percentage of GDP, Foreign Debt Service as a Percentage of XGS, Current Account as a Percentage of XGS, Net Liquidity as Months of Import Cover and Exchange Rate Stability.

Economic Risk Rating is to provide a means of assessing a country's current economic strengths and weaknesses. In general terms where its strengths outweigh its weaknesses it will present a low economic risk and where its weaknesses outweigh its strengths it will present a high economic risk. It weights the five factors GDP per Head of Population, Real Annual GDP Growth, Annual Inflation Rate, Budget Balance as a Percentage of GDP, Current Account Balance as a Percentage of GDP.

Each component is assigned a maximum numerical value (risk points). The maximum points able to be awarded to any particular risk component is pre-set within the system and depends on the importance (weighting) of that component to the overall risk of a country. The minimum number of points that can be assigned to each component is zero.

Summary Statistics for Economic Performance Regressions in Tables 3-4.

Variable	Number of Observations	Mean	Standard Deviation	Min.	Max.
Growth Rate	820	0.01	0.07	-0.44	0.22
GDP 1975-1980	820	8,856	6,645	670	32,517
Trade: Openness	820	0.23	0.19	0	0.83
Institutions: German Legal Origin	53	0.09	0.28	0	1
Scandinavian Legal Origin	53	0.09	0.28	0	1
Socialist Legal Origin	53	0.29	0.45	0	1
English Legal Origin	53	0.21	0.41	0	1
French Legal Origin	53	0.33	0.47	0	1
Geography: Latitude	53	0.40	0.18	0.09	0.71
Fuel Exports	42	0.03	0.07	0	0.33
Country Risk	42	0.28	0.12	0.09	0.52
Economic Attributes:					
Unfair for Poor – L	40	0.68	0.15	0.35	0.88
No Escape – L	40	0.57	0.19	0.12	0.87
Government help Poor – L	38	2.64	0.21	2.07	2.91
Business Ownership – L	56	1.97	0.29	1.58	2.78
Fair Pay – L	55	0.24	0.12	0.05	0.61
Non-Economic Attributes:					
Environment – L	42	0.56	0.11	0.30	0.78
Tradition vs Technology - R	39	0.46	0.15	0.08	0.70
Homosexuals – L	56	3.14	1.22	1.29	6.58
Tolerance – L	38	0.61	0.15	0.19	0.83
Capitalists – L	38	0.09	0.10	0.01	0.53

* Data are from World Economic Indicators and the World Values Surveys.

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