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Cross-Country Determinants of Life
Satisfaction:
Exploring Different Determinants across
Groups in Society.

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Abstract

This paper explores a wide range of determinants of life satisfaction exploiting a database of 73 countries, based in turn on about 100 000 observations. The determinants can be categorized in four groups: political, economic, institutional factors and human development and culture. The relevance of these factors is estimated on country-level averages of satisfaction of sub-groups of national populations according to gender, income and political orientation, using OLS, robust regression and Extreme Bounds Analysis techniques. Our results show that only a small number of factors robustly influence life satisfaction across countries while the importance of a large number of alternative factors suggested in the previous literature is rejected.

Keywords

Life Satisfaction, Institutions, Extreme Bounds Analysis

JEL Classification

I31, H10, H40

1. Introduction

Although the literature on the economics of happiness is relatively new, it already generated substantial attention. Part of the literature has concentrated on exploring individual-level determinants of life satisfaction (and neglecting aggregate determinants) while another part, which our study belongs to, deals with the country-specific determinants of satisfaction across countries.[1] Previous research identified a range of institutional, economic and ecological determinants of well-being. For example, the amount of social capital (represented by the share of the population stating that 'most people can be trusted') has been shown to be a relevant factor of people's life satisfaction (Bjørnskov, 2003). Dorn et al. (2005) suggest that people in democratic countries are considerably happier than in other political systems. Additional – and important – determinants of happiness are unemployment rates, inflation and the disruptive effects of communism (Oswald, 1997; Diener and Seligman, 2004). Surprisingly, earlier cross-country studies (Easterlin, 1995; Oswald, 1997) do not find an impact of income (as measured by GDP per capita) on satisfaction (and happiness), whereas more recent contributions do (DiTella, MacCulloch, and Oswald 2003).

There are important gaps in the existing literature. First, a wide variety of variables has been suggested as determinants of life satisfaction, but there is little consensus in the literature which of those variables really matter. Most authors do not carefully examine the sensitivity of their empirical findings. Thus it is hard to tell whether the variables reported to be significant in a particular regression are really robustly related to life satisfaction. The aim of this paper is to fill this gap. We analyze to what extent variables that have been suggested in the literature as influencing life satisfaction are indeed robust determinants. We use Extreme Bounds Analysis to do this.

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[1] One exception is Helliwell (2003) who analyzes individual-level World Values Survey data with both individual-level and national effects.

A second gap in the literature is the focus of most of the existing articles on entire national populations. Arguably, there is reason to expect that the impact of the factors examined varies between different subpopulations. How do economic, political, institutional and human developmental factors affect subjective life satisfaction of different subpopulations? This is the second question our paper deals with. For this purpose, we use World Values Survey data and explore whether about 50 different factors have different impacts on (a) people in different income groups, classified into low income, middle income and high income, (b) men and women, and (c) people voting to the left or the right of the middle, respectively.

Our approach of splitting the population into different groups has a major advantage over aggregated studies: if some factors affect, for example, the average life satisfaction of only one group in society, estimating the effect on the entire population will tend to bias the coefficient towards zero and hence make the factor appear less important and robust, although it might be relevant for that particular group. Again, we explore the robustness of the results using Extreme Bounds Analysis.

The paper proceeds as follows. Section 2 presents our hypotheses and data. The methodology is described in section 3 while section 4 presents the empirical results. Section 5 summarizes the results and draws tentative implications for future research while section 6 concludes.

2. Hypotheses and Data

As noted in the introduction, a large number of cross-country factors have been suggested as determinants of life satisfaction – or are treated as such in the public debate and by politicians. In

this paper we investigate the influence of those aggregate factors on various societal groups with respect to their self-reported life satisfaction.[2]

These groups are chosen based on either self-reported income levels (low, middle, and high), gender, or political orientation. We obtained these data from the World Value Survey reporting levels of life satisfaction on a ten point scale of more than 100,000 interviewed individuals in 73 countries over the period 1997-2000, which were then aggregated at the country level.[3] Regarding the choice of explanatory variables, we follow the previous literature. They loosely correspond to the hypotheses introduced in the following.

The independent variables are listed in Table 1. They are allocated to four broad sets of explanatory factors under the headings of political, economic, institutional and, respectively, human development as described below.[4]

INSERT TABLE 1 ABOUT HERE

2.1. Political factors

First, political factors are likely to have an impact on the average life satisfaction across nations. Based on theoretical models of political economy, stronger democratic institutions might lead to an allocation of goods and resources closer to citizens' preferences. They are thus likely to have a positive impact on people's subjective well-being.[5] Furthermore, people in longer established

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[2] Note that some theoretical literature suggests that there is a difference between life satisfaction and happiness, which is used in some of the studies cited here (Veenhoven, 2000). In fact, the two concepts are probably not synonymous, as indicated by the surprisingly low correlation between individual answers to both questions in the World Values Survey (rho = 0.44).

[3] The exact question was: "All things considered, how satisfied are you with your life as a whole these days?". A card was then shown to the interviewee with a scale ranging from 1 (dissatisfied) to 10 (satisfied).

[4] Appendix Table A1 gives descriptive statistics.

[5] See Downs (1957), Feld and Kirchgässner (2001), Besley and Coate (2001); for empirical corroboration of the median voter theorem see, e.g., Pommerehne (1978), Gerber (1996, 1999); for the impact on well-being also Frey and Stutzer (2000).

democracies have been shown to be happier than those in younger democracies (see Dorn et al., 2005). Similarly, countries' independence might also positively affect life satisfaction as preferences should be more respected than under foreign rule. On the other hand, populations in newly founded countries may not suffer from ingrained power structures and remnants of, e.g., feudal systems.

As regards the ideology and structure of the government, no clear prediction can be made as each individual is affected in a different way by any government policy. Nevertheless sociologists and political scientists frequently expect a shift towards the political right will immiserize the poor as redistributive measures are conjectured to be restrained (e.g. Bauman, 1998). The impact of government fractionalization is also not obvious a priori. It might lead to excessive growth in the budget and the exploitation of the tax base as a 'fiscal commons', thereby shrinking people's net wages to be spent on goods and services (Roubini and Sachs, 1989; de Haan and Sturm, 1997; Kontopoulos and Perotti, 1999; Volkerink and de Haan, 2001). On the other hand, the more parties are needed to form a coalition the more likely it is for a specific societal group or local district to benefit from a pork-barrel legislation and log-rolling.[6] Furthermore, broader coalitions might represent larger portions of the population compared to a single majority government (Lijphart 1977), potentially making citizens feel better even if government fractionalization could slow down the political decision-making process substantially as compromises have to be sought (e.g. Bawn, 1999; Ganghof, 2003). Similarly, a bicameral system potentially increases the number of veto-players in political systems that are likely to block any policy change, particularly changes related to government spending.[7] Depending on the status quo, the various societal groups will be affected differently by political stability, i.e. maintaining the current political, economic and social situation.

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[6] See Weingast, Shepsle and Johnsen (1981), Tullock (1981), Besley and Coate (1997, 1998) on the inefficiencies created through a representative political system.

[7] See Romer and Rosenthal (1978), Tsebelis (1995) for a theoretical model and, e.g., Bawn (1999), McCubbins (1991), Alt and Lowry (1994) for empirical tests.

Traditionally, however, bicameralism with its checks-and-balances has been viewed more positively and thought to prevent the tyranny of a simple majority (or even minority) in the legislative chamber, thereby providing political and social stability (e.g. König, 2001).

In addition, the influence of having a monarch as head of state does not appear predictable for people's satisfaction with their lives. Nowadays, in Europe most monarchies are constitutional, with the monarch having representative functions only. On the other hand, there are some non-European, particularly Arab countries in which absolute monarchs rule while parliament has only advisory power.[8] Nevertheless, a common positive trait of these countries might be that the monarch as head of state exerts unifying and stabilizing forces bridging ethnic fractionalization and differences in party ideologies either as a positive role model or as an object of the hatred of his own people.[9]

Finally, postcommunist states experienced a hard time of social, political and economic disorder during their transition process. Since this adaptation process is still taking place, compared to well-established democracies and constitutional monarchies, people residing in post-communist states are likely to experience a lower level of well-being (Helliwell, 2002; Teksoz and Sanfey, 2005). However, it might also be conjectured that communism itself exerted a depressing effect on its populations in the past which still echoes in the current level of well-being.

2.2. Economic factors

A number of economic factors are likely to influence subjective life satisfaction. First, income – whether it is personal or the national average – is a source of well-being in almost all standard

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[8] For a list or monarchist countries, see http://www.cosmoedu.net/politicalscience.html#monarchies (18 May 2005). See also http://www.hawaiiankingdom.org/constitutional-monarchies.shtml (18 May 2005).

[9] Bjørnskov (2005) for example finds that monarchies have substantially more trusting populations, suggesting that the monarch as a role model has a unifying and stabilizing effect on society.

economic theories.[10] We employ 2000 GDP per capita in purchasing-power adjusted US dollars from the Penn World Tables (PWT), Mark 6.1 (Heston et al., 2002). This variable is employed in natural logarithm in order to take the huge differences in GDP levels across countries, non-linearity, and the fact that national income is truncated at zero into account.

Second, we include openness to trade, measured by the sum of imports and exports as a share of GDP (Heston et al. 2002), and an index of globalization developed in Dreher (2005, 2006). Although some sociologists point to the adverse effects of globalization and further international economic integration (e.g. Bauman, 1998), economic theory often gives the opposite prediction.[11] Standard economic trade theory shows that increased economic integration leads to lower price levels induced through more competition, and that openness can lead to a greater variety of goods and thereby an increased ability to make purchases closer to preferences or vary one's consumption (e.g. Lancaster, 1980; Dixit and Stiglitz, 1977). On the other hand, workers in sectors with a comparative disadvantage might experience lower wages or loose their jobs as a consequence of globalization whereas the income of the capital owners stays more or less unaffected or even benefit (Dixit and Norman, 1980). In addition, globalization is often thought to increase uncertainty which is likely to decrease satisfaction.

Moreover, the effect of government consumption is also not obvious a priori. On the one hand, governments finance important public goods such as education and infrastructure that might provide the basis for present and future economic prosperity. Yet, on the other hand, governments and public administrations do not have full information on citizens' preferences, and government

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[10] A positive impact of current or lagged GDP levels on 'happiness' was found in, DiTella, MacCulloch, and Oswald (2003). However, virtually no study has found an impact of income on life satisfaction in countries where the majority of the population have their basic needs covered.

[11] See Dreher (2005, 2006) for a summary, and an empirical test of how globalization affects economic policy and, respectively, economic growth.

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administrations have been shown to seek rents and maximize budgets beyond the point of optimality (e.g. Niskanen, 1975).

Another variable belonging to the group of economic factors is the investment price level (relative to the US), which also derives from PWT. This variable can be viewed as an alternative measure of international economic integration. It can, however, also be viewed as the protection of workers' wages through unions. This makes investment in a country more expensive relative to the US, where unions have less power. As a third hypothesis, the investment price level might measure the returns to investments and hence provides an indication of the current business climate.

In addition, we employ the average tariff rate from Gwartney and Lawson's (2002) economic freedom index, which also measures the exposure of a country to international competition. Industrialized or well developed countries, however, are not necessarily open: good examples of wealthy and still highly protected countries are Switzerland and Norway.[12]

The degree of income inequality might be important as it determines the relative income position of individuals.[13] However, for people with below median income the direction of the impact is not obvious a priori. Comparably poor people might be negatively influenced by inequality when envy prevails. Inequality, however, also might entail opportunities. Poor people in unequal societies might expect to increase their income, while the chance to escape poverty is smaller when all are equally poor. Regarding life-satisfaction of people with above median income the dominant impact is likely to be positive. In any case, we might observe different impacts between the low income and the high income groups.

A similar interpretation can be given to welfare transfers and subsidies as a measure of the welfare system. If welfare payments are correctly targeted according to their stated goals, they

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[12] The correlation between openness measures and national income is about -0.7, but the Variance Inflation Factors (VIFs) are consistently low, so there should be no problem identifying effects due to collinearity.

[13] In fact, a number of individual-level studies have shown that relative income positions matter for happiness (e.g. Fox and Kahneman 1992).

should decrease income inequality and raise the disposable income of the needy, such as (working) poor and single parents. It is also possible these societal groups are particularly at risk to experience a drop in future income. Furthermore, such transfers might reduce distributional conflicts between societal groups and so lead to less crime and thus enhance the well-being of all members of society alike. Also, persons with a leftist ideology should be more in favor of redistributive measures (for theory and empirical corroboration, see Alesina, DiTella and MacCulloch 2004).[14] If however, social mobility is perceived as high, (potential) welfare recipients might even fear the costs of redistribution more than they value its benefits. A similar interpretation can be given to the top marginal tax rate: it serves as a proxy of the progressivity of the income taxes and potential redistribution through the tax system, of which lower income earners profit. On the other hand, as alluded below, a higher to marginal tax might also be linked to a wasteful government spending, making all equally worse off.

As indicators of economic uncertainty, we first include the inflation rate, then the standard deviation of the growth rate during the 1990s, and finally, real GDP growth over the previous five years and the level of public debt to GDP as two measures of expected future well-being. Also, the unemployment rate can be viewed as such an (in)stability indicator. Graham and Pettinato (2001) for example find a strong negative effect of inflation and unemployment on life satisfaction, suggesting that economic uncertainty and instability may lead to financial and psychic costs for all groups in society, as all might be subject to its adverse consequences. A high unemployment rate might for some groups reflect a particularly higher risk of becoming and staying unemployed. As long as unemployment rates are low, the individual chances of finding a new job are more or less equal for all societal groups. Most likely, higher unemployment rates will more negatively affect

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[14] A negative effect was corroborated in these papers for persons with a leftist political conviction. Analogously, a positive influence of a more generous unemployment benefit system on happiness of both employed and unemployed persons was found by DiTella, MacCulloch and Oswald (2003).

low-skilled persons and female workers. In many countries among our sample there is an oversupply of unskilled labor (at given wage levels). Furthermore, in times of recession women are released faster than their male colleagues in some of those countries. As regards GDP growth, higher growth rates imply rising personal incomes which should be positive for all societal groups; indeed, a positive impact on happiness was detected by DiTella, MacCulloch and Oswald (2003). Finally, the share of public debt to GDP, however, might proxy for bad governance of politicians or an ongoing recession which often gives reason to increase tax rates and to cut government spending on welfare, investments, infrastructure and education.

Finally, access to technology (measured as the average use of mobile phones, internet and cable TV per 1000 inhabitants) enters the economic control variables. The 1990s were characterized by the rapid spread of information technology, which may have caused worry and concern among older people in particular. Through modern means of communication, people in poor countries can more easily compare their life with those of people in richer countries, potentially decreasing their satisfaction. To the contrary, the spread of technology opened new possibilities to people in rich and poor countries alike. Therefore, the impact of technology on satisfaction is not obvious a priori.

2.3. Institutional factors

Institutions are also likely to impact satisfaction. We employ measures of the rule of law (legal quality), overall governance; the quality of regulations of business, credit and labor, social trust; confidence in parliament, the lack of corruption; and the Gastil press freedom index.[15] From a broader perspective, also religions and the heterogeneity of the resident population form 'institutions' in the sense of norm-influencing factors.

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[15] The measure of overall governance is the average of all six indices in Kaufman et al. (2003), covering voice and accountability, political stability, control of corruption, rule of law, regulatory quality and government effectiveness. Although Kaufman et al. (2003) argue for the opposite, Bjørnskov (2005) shows that the six indices cannot be separated statistically and therefore all measure one underlying governance factor. Using the overall measure thus might capture effects that any of the six subindices fail to sufficiently proxy for.

Legal quality and the quality of business regulations reduce enforcement costs of contracts and make – analogously to economic models of crime (Becker 1968) – the adherence to an established business contract more likely. Thus, market transactions are facilitated and economic uncertainty is reduced. Similarly, the lack of corruption reduces transaction costs and fosters a more efficient allocation of resources. A free, unrestrained press increases transparency and makes it easier for citizens to control politicians and other important decision-makers in society. In sum, all these institutional factors can be expected to positively impact on life satisfaction.

Similarly, following Putnam's (1993) seminal work, a number of studies suggest that social capital, defined as trust, norms and networks, affect life satisfaction positively (e.g. Bjørnskov, 2003; Helliwell, 2003). Countries with high levels of social capital are characterized by better legal quality, less corruption, and more honest behavior in general (e.g. Knack, 2001) – factors that all should lead to more life satisfaction. More recently, Uslaner (2002) and Bjørnskov (2005) have shown that these effects are entirely due to social trust. Similarly, a higher level of trust and social capital might be present when citizens have a higher confidence in governing structures and the actions of their representatives, captured by the confidence in parliament measure.

Social tensions between different societal groups created through either economic (e.g. income inequality) or non-economic factors (e.g. ethnic diversity or religion) might lead to violent crime.[16] Thus, the prediction on the influence of ethnic diversity is clear-cut and should be negative, while the effect of the share of various religious groups might depend on the philosophy and peacefulness the religion contains. In this study, the most frequent and wide-spread religious confessions are taken into account as determinants.

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[16] See Alesina, DiTella and MacCulloch (2004) for arguments linking inequality and protection of property with happiness.

2.4 Human development and culture

Regarding human development and culture, some of our control variables reflect values that exist in specific societies, others proxy for the quality of public goods. Both infant death rates, life expectancy, and fertility rates are objective measures of the quality of life. A more developed welfare state and healthcare system should lead to an increase in longevity, a lower infant death rate, and a lower number of children per fertile woman who, particularly in developing countries, have to subsidize their parents when they grow old.

Also, enrolment rates in primary and secondary schooling form part of various indices of the quality of human life. Missing child education is a measure of poverty, whereas schooling of children can be associated with a promising financial future for the child (and sometimes for the parents also). For this reason, schooling of children might be particularly important for low-income families. On the other hand, schooling also makes people more informed about society and the surrounding world as well as enabling them to better understand it and assess potential risks and opportunities. While this ability arguably ought to clear away uncertainty, it may also reduce people's chances of being happily ignorant. As a final measure of overall education, we employ the country average IQ score as a measure of the quality of schooling, i.e. the extent to which the education system provides people with analytical skills.[17]

We also include an indicator of gender discrimination, which might be expected to have a negative effect on women's life satisfaction and persons with a leftist ideological position. However, given that discrimination induces conflicts between the genders, it could be equally well expected that the effects are similar for both sexes.

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[17] Intelligence might be to some extent inherited, i.e. a matter of genes. However, whether the standard IQ tests primarily measure genetic dispositions or the quality and quantity of schooling is a question on which we prefer to remain agnostic.

Arguably, geographical factors might affect life satisfaction also. Generally speaking, a moderately warm and friendly climate might make people feeling satisfied with their lives by, e.g., relieving them of the physical stress of extreme temperatures or the psychological stress of large parts of the year lived without sufficient or with abundant sunlight. For this reason, people living in extreme cold or in the desert, to the contrary, are probably less satisfied, especially because nowadays through mass media they can compare their living conditions with those all over the world. We employ a country's average temperature, and its latitude and longitude to account for this geographical determinant.

Finally, using ISSP data, Dorn et al. (2005) have shown that persons residing in predominantly English-speaking countries systematically report higher levels of subjective happiness than persons in other countries. For this reason, we also employ a dummy for countries with English as their main official language.

3. Methodology

Due to data restrictions and the time invariance of observed cross-national levels of well-being we estimate cross-section regressions. The dependent variable is aggregated average life satisfaction for the various societal groups in about 70 countries. We estimate OLS regressions with Huber-White-Sandwich standard errors which have been corrected for heteroscedasticity. Ramsey specification tests of omitted variables have been carried out for each variation of the model. Statistically, averages are sensitive to outliers, for which reason robustness checks for the OLS estimates have to be carried out.

In our model, life satisfaction is viewed as a linear function of a vector M containing the aggregate variables that form our baseline specification:

$$Y = \beta M + u \,, \tag{1}$$

where the dependent variable, Y, is an average of reported life-satisfaction for a particular societal group of the country in which this group resides.

Consequently, in addition to exploring a large array of variables, we also provide sensitivity tests along two dimensions. First, as is well-known, least squares estimates in small samples can perform rather poorly and t-statistics are not reliable when the distribution of residuals is not normal, and in particular when the distribution is heavy-tailed. Applying a fitting criterion less vulnerable to potential outliers may therefore be needed. The robust regression technique does exactly this by weighting observations in an iterative process: Starting with the OLS specification (equation 1), estimates are obtained through weighted least squares where the weights depend on the residuals from the previous iteration with observations with relatively large residuals getting a smaller weight. This process continues until convergence, resulting in estimates not being overly influenced by any specific observation.

Second, an additional robustness problem is the appropriate choice of covariates. Clearly, one of the main challenges in empirical analysis when there is no established benchmark is coming up with a reliable and robust model. To examine which explanatory variables are robustly related to our dependent variable, we employ variants of the so-called Extreme Bounds Analysis (EBA) as suggested by Leamer (1983) and Levine and Renelt (1992). The EBA has been widely used in the economic growth literature.[18] The central difficulty in this research – which also applies to the research topic of the present paper – is that several different models may all seem reasonable given the data, but yield different conclusions about the parameters of interest. As pointed out by Temple (2000), presenting only the results of the model which is preferred by the author(s) can be

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[18] See Sturm and de Haan (2004) for further discussion.

misleading. This problem is ameliorated by the EBA, which can be exemplified as follows. Equations of the following general form are estimated:

$$Y = \alpha M + \beta F + \gamma Z + u,$$ (2)

where Y is the dependent variable; M is a vector of 'standard' explanatory variables; F is the variable of interest; Z is a vector of up to three (here we follow Levine and Renelt, 1992) possible additional explanatory variables, which according to the literature may be related to the dependent variable; and u is an error term. Traditionally, the extreme bounds test for variable F states that if the lower extreme bound for β – i.e. the lowest value for β minus two standard deviations – is negative, while the upper extreme bound for β – i.e. the highest value for β plus two standard deviations – is positive, the variable F is not robustly related to Y. A robust relation, however, is present when the upper and the lower bounds are at the same side of zero.

As argued by Temple (2000), it is rare in empirical research that we can say with certainty that one model dominates all other possibilities in all dimensions. In these circumstances, it makes sense to provide information about how sensitive the findings are to alternative modeling choices. The EBA procedure as described above provides a relatively simple criterion for such a test. Sala-i-Martin (1997a, 1997b), however, criticizes the suitability of the EBA arguing that the test applied poses too rigid a threshold in most cases: if the distribution of β has some positive and some negative support, then one is bound to find at least one regression for which the estimated coefficient changes sign if a sufficient number of regressions are run. For this reason, we will not only report the extreme bounds, but also the percentage of the regressions in which the coefficient of the variables in F are significantly different from zero at the 5 percent level. Moreover, instead of analyzing just the extreme bounds of the estimates of the coefficient of a particular variable, we

follow Sala-i-Martin's (1997a, 1997b) suggestion to analyze the entire distribution of estimates. Following this suggestion, we not only report the unweighted parameter estimate of β and its standard deviation but also the unweighted cumulative distribution function (CDF(0)), i.e. the fraction of the cumulative distribution function lying on one side of zero. In this paper, we will base our conclusions regarding this dimension of the robustness of variables on the Sala-i-Martin variant of the EBA.[19]

Regarding the baseline model, i.e. standard variables to be included in the M-vector, we follow the previous literature. We include GDP per capita, a measure of social trust, government consumption, openness of the country, the investment price level and a dummy whether this country is a post-communist state or not. The main reason for including these variables in the baseline model was that they proved to be the most robust and influential determinants of average life satisfaction for the whole sample and all societal sub-groups in preliminary test regressions and conform well with the results of theory and previous empirical studies. Furthermore, the M-vector includes regional dummies also (for Asia and the Pacific, Latin America, North Africa and the Middle East, and Sub-Saharan Africa), which account for unobserved shared cultural values. For the EBA analysis, in addition to the variables of the baseline model (M-vector), one variable at a time enters the F-vector, with up to three other variables entering the regression in all possible combinations. In total, each result (reported in the rows of Tables 4, 6, 8 and 10) is based on more than 12,000 regressions.

In what follows, we turn to the results of our empirical analysis.

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[19] Sala-i-Martin (1997a) proposes using the (integrated) likelihood to construct a weighted CDF(0). However, the varying number of observations in the regressions due to missing observations in some of the variables poses a problem. Sturm and de Haan (2001) show that as a result this goodness of fit measure may not be a good indicator of the probability that a model is the true model and the weights constructed in this way are not equivariant for linear transformations in the dependent variable. Hence, changing scales will result in rather different outcomes and conclusions. We therefore restrict our attention to the unweighted version.

4. Empirical Results

We start with the description of the OLS and robust regression (RR) results of the baseline model for the overall sample and its various subgroups. Then, we analyze the potential influence of additional variables using both OLS, and RR. EBA estimation outcomes complete each subsection. For each variable we report the lower and upper extreme bounds (column 1 and 2), the average beta coefficient (column 5),[20] and the average of the beta's standard deviation (column 6). The CDF(0) and the percent of regressions in which the corresponding coefficient is significantly different from zero (at the five percent level of significance) are shown in columns 3 and 4. In general, the robustness test is passed if the CDF(0) has a value of at least 0.90.

Table 2 displays the OLS and robust regression (RR) estimation results of our baseline model. As can be seen in the table, GDP per capita never proves significant in the overall sample. This is consistent with some previous empirical analyses. Social trust increases life satisfaction, whereas government consumption is negatively associated with well-being – possibly caused by a misallocation of goods and resources and wasteful behavior of Leviathan-like bureaucrats corroborating the theory of bureaucracy. Openness, however, is associated with higher levels of life satisfaction as would be expected from standard economic trade theory but opposite to popular beliefs. Also in line with our hypotheses, life satisfaction rises with the influence of the investment price level and is on average substantially lower in societies with a communist past. For the baseline model in the full sample, robust regression results are consistent with the OLS results.

Turning to the empirical results for the sub-samples by income, gender or political orientation, Figure 1 shows that there are differences between the various societal groups across countries. With respect to income groups, the difference between the lower and middle group is significant at the 10 percent level only, while the difference between those groups and the upper

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[20] Note that it is not sensible to interpret the quantitative values of the beta coefficients, as they are averaged over all regressions, including insignificant coefficients also.

group is significant at conventional levels. Likewise, the difference between the two ideological sides of the political spectrum is significant at the 10 percent level, while there is no difference in levels between men and women.[21]

As regards the impact of the baseline variables on the various societal subgroups, Table 2 shows that – in line with the results for the full sample – GDP per capita is never significant. In the OLS regressions, social trust increases life satisfaction of persons in the upper income group, of male residents, and of persons voting to the right of the political middle only. In the robust regressions, however, social trust significantly increases life satisfaction of all groups, although the estimate is substantially larger for the middle income group.

Throughout all societal groups, higher government consumption is negatively associated with well-being, although the effect seems larger for men than for women. The gender difference is puzzling but could be caused by women having a higher likelihood of being publicly employed, or placing greater emphasis on publicly provided services such as schooling and health care. In the robust regressions, however, the effect is insignificant for the upper income group. It is hence possible that persons with high incomes are systematically less affected by these government consumption decisions because a relatively larger share of their income remains when subtracting fixed costs of housing, food etc. and the rich group is therefore relatively less affected by government consumption. In addition, openness leads to higher levels of life satisfaction for all groups (OLS and RR), as observed for the full sample. However, a remarkable finding should be stressed here as the effect of openness is significantly larger for the leftwing group than for the rightwing group, which is traditionally thought of being more in favor of open trade and economic globalization. Also in line with our hypothesis, the influence of the investment price level is positive for all subsamples in the OLS estimation results, but insignificant for the upper income

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[21] Significances of differences between groups are obtained by regressing the baseline model determinants on the difference in the dependent variable.

segment in the robust regression results and larger for women than for men. Finally, and as expected, people in societies with a communist past are on average less satisfied (OLS and RR) regardless of their relative position in society.

INSERT TABLE 2 ABOUT HERE

In what follows, we include additional variables to the baseline model, directly testing the hypotheses introduced above. We also report the results of the Extreme Bounds Analysis for our various sub-samples. However, due to space restraints the estimates of our baseline variables are not shown in the tables. We discuss the impact of the groups of additional variables in the following sub-sections.

4.1. Political factors

Regarding political factors, most of them appear to be insignificant for all income groups and gender in Table 3. This is true for government fractionalization, current political ideology and its average over the last 10 years, the degree of democracy (measured by the Gastil or the Polity IV index) and the monarchy variable.

Interestingly, democratic legacy significantly increases well-being of persons in the upper income category, and the male and female subsamples alike, with coefficients significant at the 10 percent level. Democratic legacy increases the well-being of particularly that income group because it is the relatively richer persons who fear being deprived of their wealth in autocratic societies or through a political overturn. It is therefore likely that the results obtained for men and women are driven by those earning high incomes.

A bicameral parliament is associated with higher levels of life satisfaction of the lower income group (only OLS), of men and the leftwing group (both OLS and RR). Since bicameral systems favor maintaining the status quo, it is obviously these societal groups which benefit most from a stable political and economic situation. Possibly, policies in certain countries around the year 2000[22] which also entailed cuts in the social system might have occurred to a lesser extent in countries with such a political system, favoring persons with a lower income. Certainly, such cuts have been opposed by persons with a leftist orientation. It is also possible that, in general, men prefer political stability to a larger extent than women or that effects do not pertain to women who tend to be married to men who bear the major part of the family's living expenses.

The number of years a country has been independent appears to decrease life satisfaction for all groups, contradicting our hypothesis. There are two explanations: first, based on the aspiration level theory, independence might raise people's satisfaction because independence may constitute a possibility to overturn an old system that people have been unhappy with, e.g. feudalism, entrenched power elites and special interests, but after some time adaptation to a new level of satisfaction takes place and people fall back to their pre-change level of satisfaction. Second, a positive change in the political system might induce high expectations about positive personal future developments (e.g. a rising income trajectory), which, when the societal and personal costs of such a change become eminent, are (partly or fully) disappointed.

Turning to the results of Extreme Bounds Analysis, Table 4 shows that life satisfaction is robustly related to government fractionalization, bicameral parliaments and years of independence in the full sample. While all those variables have a CDF(0) greater than 0.90, column 3 shows that only years of independence have a significant influence in a substantial share of the regressions. As can be seen from the table, the results for independence and bicameral systems also hold in all sub-

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[22] The surveys were carried out in 1996-1997 for some countries, but for most of the countries in 1999-2000.

classifications. Government fractionalization, which was never significant in any OLS or RR regression, keeps its influence in the sample of left voters and for females. The results also show that living in monarchies is negatively associated with well-being of people in the upper income group in 93 percent of the regressions although its coefficient is never significant in the OLS or RR regressions in Table 3.

INSERT TABLE 3 ABOUT HERE

INSERT TABLE 4 ABOUT HERE

4.2. Economic factors

Table 5 displays the results for the additional economic factors. As can be seen in the table, only two factors are significant at conventional levels, and only when they are estimated robustly. Public debt as percentage of GDP seems to reduce the life satisfaction of the middle income group, the income segment which bears most of the tax burden in a country, and growth stability contributes positively to the well-being of the upper income group, although it should be stressed that the latter effect seems rather large. When the samples are split according to gender and political conviction, only one variable has a significant impact: Inflation significantly affects women negatively, with a coefficient significant at the ten percent level. This result does not survive in the robust regression, which shows that the OLS results were driven by the negative effect of inflation during episodes of particularly high inflation (as is also true for the results of previous studies, e.g. Bjørnskov, 2003; Graham and Pettinato, 2001). Such episodes are necessarily special and will therefore be weighted down by the robust estimation technique.

Regarding the remaining eight variables, not one has a significant coefficient in any subsample, pointing to the relative irrelevance of economic factors for subjective life satisfaction.

This is corroborated by the EBA results of Table 6. As can be seen, life satisfaction of the low income group is robustly related to inequality, inflation, and growth stability, with the average coefficient of inequality being negative, and the other two being positive. Growth over the previous five years matters for male life satisfaction, while females are robustly influenced by inflation. Intuitively, left voters are on average more satisfied when the top marginal tax rate is high.

INSERT TABLE 5 ABOUT HERE

INSERT TABLE 6 ABOUT HERE

4.3. Institutional factors

Turning to institutional factors, we report the OLS and RR results in Table 7, while estimation outcomes of the EBA are shown in Table 8. As can be seen from the robustness test, most of the institutional determinants do not exhibit a robust and significant impact on well-being. Exceptions are confidence in parliament and certain religious denominations. The results of the OLS and RR regressions (Table 7) show a positive impact of being a Protestant or Catholic on well-being throughout all samples. This result is particularly noteworthy as we have already controlled for GDP levels and included regional dummies in our model specification. Also, being a Muslim appears to lead to higher satisfaction for people in the middle and upper income segments, as well as for persons with a leftist and rightist ideology. Hindis report significantly lower levels of well-being if the sample is split by income groups (OLS), but strangely not for the whole sample. In the subsample of persons with a leftist ideology, Hindi religious confession is associated with lower levels of well-being (OLS). Also Buddhists appear to be less satisfied with life in the gender- and ideology-related subsamples (OLS results or robust regression results). Interestingly, Buddhists in the low income sample are significantly happier whereas in the upper income group they are

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significantly less happy (OLS). However, this is hardly surprising considering the Buddhist conception of the afterlife in which virtue in this life is rewarded in the next. Being at the 'bottom' of society thus, all other things being equal, increases chances of being reincarnated at a higher level, and vice versa for individuals in the upper income segment.[23] The different effects for income segments for Buddhists are therefore consistent with their internalizing their likely reincarnation status. In general, the most robust results are observed for Protestants and Catholics, whereas for the remaining confessions differences between the OLS and robust regressions results are usually detected. However, by comparing an OLS regression with these religious variables with a two-stage regression employing the variables as instruments for social trust, we find that an F-test cannot reject that the overall effects of Protestant, Catholic and Muslim religion are fully mediated through their effects on social trust (F=.44). The EBA partly corroborates the OLS and RR estimates: the EBA results show that Protestants and Buddhists are on average more satisfied with their life, while Orthodox, Catholic and Hindi believers are less so.

Of the remaining factors, confidence in parliament in particular appears to increase life satisfaction (OLS) in general, for people with a lower income (OLS) and those with an upper income (RR), and for both leftwing and rightwing persons with a similar magnitude.[24] We should also note that this institutional factor always shows a positive sign for all sub-populations and passes the EBA tests.

In the robust regressions reported in Table 8, ethnic diversity is associated with an increase in life satisfaction for persons with lower and upper income, but not for the whole sample. Life satisfaction levels of subsamples formed according to political ideology and gender are also not affected by ethnic diversity. As the EBA shows, moreover, its impact on life satisfaction is not

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[23] For more information on Buddhism, interested readers can consult the Encyclopaedia Brittanica or Wikipedia at http://en.wikipedia.org/wiki/Buddhism (27/09/2005).

[24] Note that the WVS codes confidence in parliament from 1 (full confidence) to 4 (no confidence). In order to avoid confusion, we recode the variable such that higher values imply more confidence.

robust, and depends on the underlying specification. Obviously, the view that ethnic diversity leads to more conflicts and thus makes people less well off cannot be supported with our data.

INSERT TABLE 7 ABOUT HERE

INSERT TABLE 8 ABOUT HERE

4.4. Human development and culture

The results for human development factors are displayed in Tables 9 and 10. Turning to the OLS and RR regression results, contrary to our priori hypothesis, primary and secondary schooling do not exert a significant impact. Other insignificant coefficients pertain to life expectancy, gender discrimination, the average temperature in a country, and the latitude of a country. In addition, in our analysis the coefficient of the English language dummy is not significant at any conventional level which does not support earlier empirical findings.[25] Except for the robust regression results for the middle class, infant mortality does not affect life satisfaction of any subpopulation. As can be seen from the results of EBA, only life expectancy is robustly related to life satisfaction in the overall sample, with a positive average coefficient (which, however, becomes insignificant in the OLS and RR regressions).

In contrast to the large number of non-results, average IQ in a country is associated with lower levels of well-being for all three income segments, both genders and both political convictions. Given that persons with higher IQ either perceive the world as more complex or do indeed have more opportunities to choose from – contrary to our prediction – it is more likely that people value being happily ignorant, which might, for example, allow them to avoid the displeasure

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[25] It is important to note that Dorn et al. (2005) uses the 'happiness' question while we focus on 'life satisfaction'. See also footnote 3.

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of taking decisions in a complex environment.[26] In the sub-samples, the EBA analysis shows also that well-being is associated with the average IQ – but again negatively.

Average fertility, however, is associated with higher satisfaction levels in the upper income segment (OLS and RR) as for those with a leftwing ideological position (OLS). It is possible that the social net effect of children is viewed positively by leftist people and those in the upper income segment who might fear too strong demand for redistribution to be undertaken by the government, or simply that they place more relative value on having children, yet the EBA results cannot corroborate this finding.

Finally, longitude of the country is associated with increases in life satisfaction for those persons with a low income (OLS and RR results), although for any other subpopulation, it does not appear to be decisive. This variable, among other things, measures the distance to Europe and could hence capture specific effects of, e.g., 'the new world', i.e. it might capture the effects of remnants of pioneer spirits and a perceived higher social mobility. In the EBA results, however, the coefficients are insignificant for all sub-samples.

INSERT TABLE 9 ABOUT HERE

INSERT TABLE 10 ABOUT HERE

5. Summary of Results and Discussion

Our findings support a number of previous results from both the empirical life satisfaction literature as well as neoclassical and public choice economic theory while refuting others. All tests are conducted on a baseline specification, showing that openness to trade, investment prices – probably proxying for business climate and product and process quality – and social trust are positively

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[26] The Christian Bible contains a quote that nicely captures this apparently absurd effect: "For in much wisdom is much grief: and he that increaseth knowledge increaseth sorrow" (King James Version, Ecclesiastes 1:18).

associated with life satisfaction while the government's share of the creation of income and having a communist past are strongly negatively associated with life satisfaction across groups in society. We do, however, find slight differences in the magnitude with which these factors influence the satisfaction of groups divided along income, gender and political conviction. Economic globalization appears to be beneficial for subjective life satisfaction, as openness to trade is strongly and robustly associated with higher satisfaction levels for all groups, but we also find the surprising result that people voting for leftwing parties derive relatively more satisfaction from international trade than do those voting for parties to the right of the middle. In other words, the political group that is viewed as being most opposed to further international integration is the one that seems to derive the most pleasure from that very integration.

We furthermore tested a large set of additional factors that have been suggested to affect life satisfaction in the previous literature, including economic, political, institutional variables and determinants relating to human development. Among the political factors, the existence of a bicameral system, a monarchy and the years of independence turned out to exert a robust influence on average life satisfaction. Particularly lower income groups, men, and leftwing voters seem to profit from a bicameral system while the number of years that a country has been independent appears to exert a negative influence on the life satisfaction of all societal groups equally and leftwing voters seem to be less satisfied in monarchies.

Among the economic factors, only few were found to be significant for some societal groups, as the middle income class appeared negatively affected by public debt and the upper income segment positively by growth stability. Arguably, however, the small number of robust economic variables does not necessarily imply that economic development is irrelevant for life satisfaction. Still, a number of these factors might exert an indirect effect through other variables of

the baseline model, as, for example, investment prices that reflect production and process quality tend to increase with the level of economic development.

As regards institutional factors, we observe that confidence in parliament matters for many societal groups by increasing their level of satisfaction. Also, religious denominations play a role, with Protestants and Catholics particularly being systematically better off than others, and followers of the Hindi and Buddhist tradition in general being worse off. We conclude that culture does matter for life satisfaction, if measured by religion, although it should be stressed that further statistical tests cannot reject that the overall effects of Protestant, Catholic and Muslim religion are fully mediated through their effects on social trust.

Among the various human development indicators tested, the national average score in standardized intelligence tests (IQ) turned out to have a significantly negative effect on life satisfaction for the whole sample and all sub-groups. Fertility was found to matter for leftwing voters and members of the upper income segment, while the latitude of a country – probably indicating a 'new world effect' of pioneer spirit and perceived social mobility – appeared to increase life satisfaction of the low income segment.

The results also hold broad implications for the theory of life satisfaction as most effects can be attributed to two main categories. The first category pertains to a better match of supplied goods to costumers' preferences, and the second is related to political, social or economic stability. The first category comprises openness to trade, government spending and investment prices. The strong positive association between openness to trade and life satisfaction and its strong negative association with the government's share of total income both point in the same direction. When governments spend relatively more of the national income, the share within the control of individuals necessarily decreases. Moreover, state-owned enterprises, in which some of this income is generated, are subject to political demand and control, and less to market demand than private

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enterprises, implying that publicly produced private goods may tend to be less aligned with the preferences of consumers than privately produced goods. The same conclusion, but with the opposite sign, goes for openness to trade as economic trade theory stresses its non-pecuniary benefits by welfare improvements through an increase in the variety of goods, which makes it easier for individuals to fit their consumption to their own preferences. Likewise, given that investment prices capture differences in the quality of goods produced domestically, the evidence also indicates that people derive satisfaction from being able to buy products of high quality. The overall implication thus seems to be that while national income per se may not matter for life satisfaction, the quality of individual consumption and individuals' control over it certainly do.

The second category comprises factors that affect or reflect the political, social and economic stability of the nation. Social trust and confidence in the political system, both of which are positively associated with life satisfaction, are direct measures of social and political stability. Similarly, having a bicameral political system may also provide some political and economic stability that appears to be valued by some groups of voters. Public debt also affects life satisfaction of the middle and upper income group, respectively, pointing to the implication that both current and future economic stability does matter for individuals' subjective well-being.

The three remaining robust influences – communist past, years of independence, and intelligence – point in two different directions. For the two former, one possible explanation consistent with anecdotal evidence would suggest that both former communist and very long-established countries tend to be shaped by rather hierarchical and sclerotic social structures, which make social mobility extremely low. In other words, both measures may capture the perceived inability of individuals to move up the social ladder through their own doing, which thus entails a substantial loss of personal control. Finally, the finding that average intelligence is strongly associated with lower life satisfaction may at first seem absurd. However, Goethe is alleged to have

said that "Only when we know a little do we know anything; doubt grows with knowledge", which indicates that analytical capacity implies not only a better evaluation of risk, but also a higher risk perceptiveness in everyday life: hence, particularly high intelligence may lead to lower life satisfaction compared to the relatively carefree existence of those that are not able to grasp the complexity of life and society. This area must surely be of considerable interest in years to come.

6. Conclusions

The literature on cross-country determinants of life satisfaction has generated a large number of factors that supposedly affects the average satisfaction with life across countries. In this paper, using OLS, robust regression techniques and Extreme Bounds Analysis, we test whether a number of these factors do robustly influence life satisfaction; that is, if the findings of previous studies survive a robustness test regularly applied in recent empirical work. In addition and as the second contribution of this analysis, we split the national samples in three ways, enabling us to compare the impacts of the factors on the lower, middle and upper third of the personal income distributions, the two genders separately, and voters to the left and right of the political middle. This approach allows us to obtain more accurate estimates of diverse factors whenever they have different impacts on separate groups in society.

Our results indicate that only some are in line with previous findings from both the life satisfaction literature as well as neoclassical and public choice economic theory. Of the baseline specification, openness to trade, investment prices, social trust, governments' share of the creation of income and having a communist past are strong predictors of life satisfaction. We also tested a large set of additional factors that might potentially affect life satisfaction, especially political, economic, and institutional factors as well as indicators of human development. Among them, only a few showed a robust significance for subpopulations or the whole population. In particular, of the

political factors the existence of a bicameral system (in some groups), the years of independence (all groups) and monarchy (one group) turned out to be influential. Among the economic factors, only public debt and growth stability were found to be significant for some societal groups. Regarding institutional factors, we observe that for many subpopulations confidence in parliament and culture – measured by religion – does matter for life satisfaction. Among the various human development indicators tested, the national average IQ turned out to have a particularly strong and significant negative effect on life satisfaction. For some population segments, fertility and the latitude of a country – probably indicating a 'new world effect' of pioneer spirit and perceived social mobility – also appeared to be influential.

Our results from in depth robustness analysis, however, reject the impact of the majority of the variables brought forward in previous studies. Among them are, e.g., welfare states, democracy, unemployment rates and education – all of which have been presented as significant predictors of satisfaction in previous studies. This clearly shows that it is not sufficient to report those results that authors prefer but to take the robustness regarding outliers and different specifications properly into account. Our results thus stress the need for more statistical care in this literature.

As a last comment, it must be stressed that we have not considered differential impacts of any variable across characteristics that pertain to countries. As such, all factors are assumed to have the same impact on societal groups across countries, which may not be a natural assumption. While our work here stresses the overriding importance of exploring the robustness of empirical findings, an important question for future research is therefore whether factors have heterogeneous impacts across countries, depending on their specific social, cultural, political and economic characteristics.

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Figure 1. Life satisfaction, different groups

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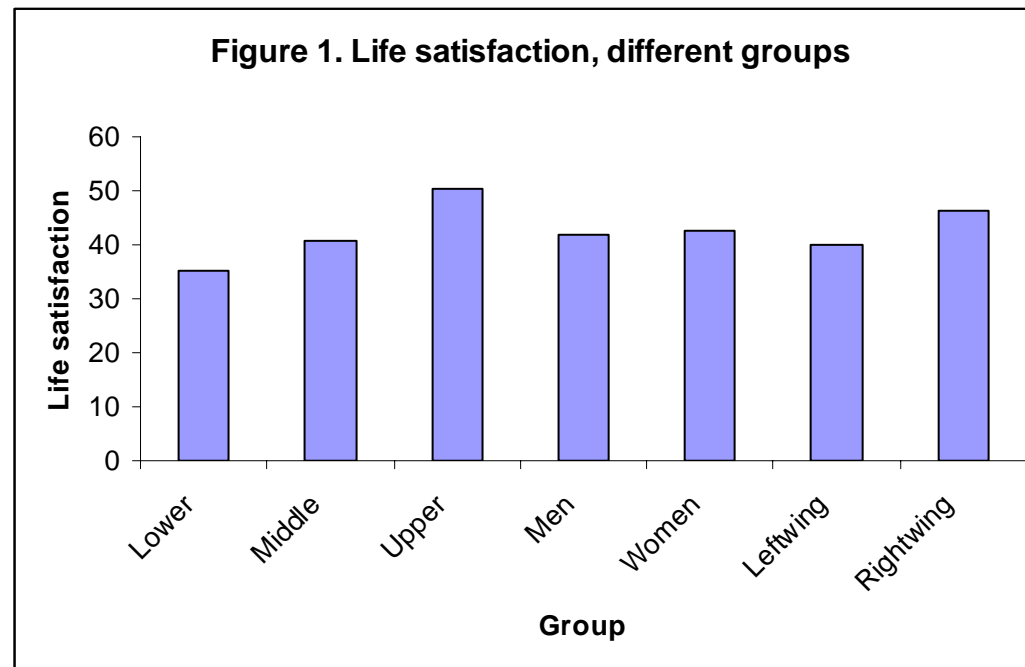
Table 1. Independent Variables

Baseline variables		
Log GDP per capita	Government consumption	Investment price
Social trust	Openness	Postcommunist
Political factors		
Government fractionalization	Democracy, Polity IV	Years of independence
Political ideology, 10-yr average	Democracy, Gastil index	Monarchy
Political ideology, current	Democratic legacy	Bicameralism
Economic factors		
Average tariff rate	Inflation	Compound growth, 5 years
Subsidies	Unemployment	Growth stability
Top marginal tax rate	Public debt, % of GDP	Access to technology
Globalization index, 1995	Income inequality	
Institutional factors		
Governance	Confidence in parliament	Muslims
Legal quality	Ethnic diversity	Hindi
Regulatory quality	Protestants	Buddhists
Lack of corruption	Catholics	
Press freedom	Orthodox	
Human development factors		
Primary schooling	Infant mortality	Average temperature
Secondary schooling	Life expectancy	Latitude
Average IQ	Gender discrimination	Longitude
Fertility	English speaking	

Table 2. Baseline Results – Income Groups

Dependent variable	All		Lower		Middle		Upper	
Estimation	OLS	Robust	OLS	Robust	OLS	Robust	OLS	Robust
Log GDP per capita	.819	-.206	1.391	-.117	1.829	0.842	-1.119	-1.062
	(2.176)	(2.329)	(2.229)	(2.217)	(2.489)	(2.372)	(2.859)	(2.856)
Social trust	.211*	.284***	.140	.291**	.208	.454***	.292**	.306*
	(.119)	(.102)	(.125)	(.103)	(.149)	(.110)	(.145)	(.132)
Government	-.337**	-.389**	-.320**	-.452**	-.348**	-.490**	-.342**	-.306
consumption	(.129)	(.158)	(.143)	(.148)	(.158)	(.159)	(.168)	(.191)
Openness	.085***	.090***	.072***	.083***	.076***	.084***	.080***	.081**
	(.017)	(.021)	(.016)	(.020)	(.019)	(.021)	(.020)	(.025)
Investment price	11.961***	11.702**	12.162***	12.544**	11.0822**	14.896**	9.235*	7.236
	(4.329)	(4.608)	(4.382)	(4.335)	(4.746)	(4.638)	(5.173)	(5.584)
Postcommunist	-21.032***	-22.337***	-20.147***	-19.995***	-23.825***	-18.713***	-24.577***	-26.829***
	(4.813)	(4.170)	(5.059)	(4.085)	(6.240)	(4.370)	(5.716)	(4.199)
Observations	73	73	71	71	71	71	71	71
Adjusted R square	.795		.772		.761		.727	
F statistic	49.89	31.86	48.47	30.79	42.01	34.79	29.23	19.57
RMSE	9.018		9.032		10.299		10.551	
RESET test	2.24*		.49		2.10		3.14**	
Jarque-Bera test			6.897*		7.146*		6.740*	

Note: all regressions include a constant term and regional dummies. *** (**) [*] denotes significance at p<.01 (p<.05) [p<.10].

Table 2 (continued). Baseline Results – Gender and Political Groups

Dependent variable	Men		Women		Leftwing		Rightwing	
Estimation	OLS	Robust	OLS	Robust	OLS	Robust	OLS	Robust
Log GDP per capita	-.173	-.878	2.183	1.087	.664	-1.279	1.439	.807
	(2.248)	(2.346)	(2.222)	(2.413)	(2.658)	(2.351)	(2.845)	(2.732)
Social trust	.217*	.274**	.189	.263*	.150	.239**	.224*	.257**
	(.119)	(.103)	(.123)	(.106)	(.114)	(.098)	(.116)	(.114)
Government	-.400***	-.446**	-.297**	-.352*	-.386***	-.455***	-.334**	-.349**
consumption	(.136)	(.159)	(.131)	(.163)	(.123)	(.146)	(.129)	(.169)
Openness	.085***	.091***	.079***	.087***	.101***	.107***	.080***	.085***
	(.016)	(.021)	(.018)	(.021)	(.021)	(.022)	(.023)	(.026)
Investment price	10.249**	9.764*	12.343***	12.154*	11.921***	10.309**	10.975**	10.636**
	(4.173)	(4.640)	(4.661)	(4.774)	(3.721)	(4.294)	(4.577)	(4.991)
Postcommunist	-23.275***	-24.276***	-20.064***	-21.652***	-22.247***	-26.236***	-20.448***	-21.522***
	(4.769)	(5.428)	(5.019)	(4.321)	(5.445)	(4.026)	(5.216)	(4.679)
Observations	73	73	73	73	70	70	70	70
Adjusted R square	.797		.777		.794		.783	
F statistic	58.67	32.68	40.27	28.24	54.80	37.78	38.22	24.90
RMSE	9.195		9.238		9.120		9.191	
RESET test	1.63		2.20*		1.88		1.72	
Jarque-Bera test	7.262*		6.213*		5.79(*)	6.049*	6.691*	6.465*

Note: all regressions include a constant term and regional dummies. *** (**) [*] denotes significance at p<.01 (p<.05) [p<.10].

Table 3. Results – Political Factors

Dependent variable, group	All		Lower		Middle		Upper	
Estimation	OLS	Robust	OLS	Robust	OLS	Robust	OLS	Robust
				BASELINE INCLUDED				
Gov. fractionalization	8.891*	8.922*	1.158	-2.675	6.323	4.992	5.953	4.822
	(4.652)	(4.873)	(5.073)	(4.712)	(5.871)	(5.164)	(5.297)	(6.442)
	[.793, 72]	[30.24, 72]	[.755, 70]	[28.27, 70]	[.751, 70]	[29.86, 70]	[.716, 70]	[16.00, 70]
Political ideology , 10-yr	1.015	.912	.353	-.499	.807	-.714	-.249	-.857
	(2.144)	(2.399)	(2.175)	(2.175)	(2.479)	(2.374)	(2.377)	(2.889)
	[.779, 71]	[25.37, 71]	[.748, 69]	[27.03, 69]	[.742, 69]	[29.45, 69]	[.712, 69]	[16.93, 69]
Political ideology, current	.282	.429	-.132	-.689	-.101	-.797	-.256	-3.510
	(2.725)	(2.576)	(2.659)	(2.304)	(2.926)	(2.576)	(3.386)	(2.979)
	[.782, 72]	[25.63, 72]	[.754, 70]	[28.44, 70]	[.747, 70]	[29.34, 70]	[.712, 70]	[18.76, 70]
Democracy, Gastil index	-.459	-.353	.592	.989	-.1035	.675	-.1466	.143
	(.990)	(.972)	(.954)	(.781)	(1.056)	(.963)	(1.129)	(1.196)
	[.783, 72]	[25.68, 72]	[.756, 70]	[37.39, 70]	[.747, 70]	[30.33, 70]	[.712, 70]	[16.10, 70]
Democracy, Polity IV	.040	-.279	-.078	-.495*	-.011	-.454	.122	.037
	(.392)	(.332)	(.395)	(.281)	(.399)	(.352)	(.465)	(.447)
	[.784, 70]	[29.27, 70]	[.758, 68]	[38.25, 68]	[.749, 68]	[30.35, 68]	[.712, 68]	[15.02, 68]
Democratic legacy	.283	.244	.191	.184	.253	.110	.366*	.379*
	(.176)	(.169)	(.177)	(.174)	(.207)	(.175)	(.213)	(.205)
	[.801, 73]	[28.28, 73]	[.772, 71]	[23.46, 71]	[.764, 71]	[31.117, 71]	[.737, 71]	[18.58, 71]
Bicameral parliament	3.841	2.631	4.728**	3.949	4.505	3.328	4.388	3.304
	(2.417)	(2.332)	(2.329)	(2.427)	(2.836)	(2.794)	(3.002)	(3.023)
	[.801, 73]	[27.49, 73]	[.782, 71]	[24.05, 71]	[.768, 71]	[21.98, 71]	[.733, 71]	[16.23, 71]
Years of independence	-.008***	-.008***	-.009***	-.008**	-.011***	-.011***	-.008**	-.006
	(.003)	(.004)	(.003)	(.004)	(.003)	(.003)	(.003)	(.005)
	[.789, 72]	[27.75, 71]	[.784, 70]	[23.14, 70]	[.778, 70]	[34.58, 70]	[.730, 70]	[16.29, 70]
Monarchy	-2.461	-6.332**	-3.069	-5.611**	-3.603	-6.259*	-4.853	-4.897
	(3.018)	(2.948)	(2.903)	(2.772)	(3.298)	(3.258)	(3.086)	(4.004)
	[.794, 73]	[39.55, 73]	[.771, 71]	[38.57, 71]	[.761, 71]	[34.50, 71]	[.729, 71]	[18.57, 71]

Note: all regressions include a constant term and regional dummies. *** (**) [*] denotes significance at p<.01 (p<.05) [p<.10]. In squared brackets are the adjusted R square of the regression and the number of observations.

Table 3 (continued). Results – Political Factors

Dependent variable, group	Men		Women		Leftwing		Rightwing	
Estimation	OLS	Robust	OLS	Robust	OLS	Robust	OLS	Robust
			BASELINE INCLUDED					
Gov. fractionalization	6.005	4.382	7.049	6.428	6.509	5.540	6.431	5.798
	(4.737)	(5.167)	(4.917)	(5.286)	(4.542)	(4.728)	(4.853)	(5.549)
	[.789, 72]	[27.87, 72]	[.769, 72]	[23.74, 72]	[.787, 69]	[31.87, 69]	[.776, 69]	[20.97, 69]
Political ideology , 10-yr	.461	.338	.955	.407	-.080	-.013	.136	-.083
	(2.178)	(2.394)	(2.127)	(2.486)	(2.217)	(2.293)	(2.128)	(2.639)
	[.783, 71]	[26.90, 71]	[.758, 71]	[22.36, 71]	[.775, 68]	[23.23, 68]	[.767, 68]	[20.09, 68]
Political ideology, current	.598	.695	.533	.214	-.498	-.108	-.618	-.779
	(2.879)	(2.577)	(2.607)	(2.654)	(3.080)	(2.473)	(2.787)	(2.835)
	[.785, 72]	[26.86, 72]	[.762, 72]	[23.04, 72]	[.781, 69]	[30.52, 69]	[.770, 69]	[20.77, 69]
Democracy, Gastil index	.131	.189	-.665	-.677	1.137	.8541	.578	.446
	(1.039)	(.969)	(.992)	(1.002)	(1.371)	(1.084)	(1.302)	(1.269)
	[.785, 72]	[26.83, 72]	[.764, 72]	[22.49, 72]	[.785, 69]	[31.46, 69]	[.771, 69]	[20.59, 69]
Democracy, Polity IV	-.072	-.501	-.034	-.315	-.078	-.382	.078	-.033
	(.375)	(.313)	(.400)	(.347)	(.413)	(.363)	(.406)	(.416)
	[.789, 70]	[35.06, 70]	[.762, 70]	[25.43, 70]	[.779, 67]	[30.03, 67]	[.775, 67]	[20.85, 67]
Democratic legacy	.314*	.291*	.319*	.316*	.308	.345*	.337	.349*
	(.183)	(.161)	(.180)	(.172)	(.222)	(.174)	(.208)	(.198)
	[.805, 73]	[33.47, 73]	[.785, 73]	[25.63, 73]	[.799, 70]	[33.33, 70]	[.790, 70]	[23.53, 70]
Bicameral parliament	4.113*	.291*	3.509	.316*	5.129**	3.789*	3.896	3.329
	(2.439)	(.161)	(2.477)	(.172)	(2.405)	(2.151)	(2.455)	(2.564)
	[.804, 73]	[33.47, 73]	[.781, 73]	[25.63, 73]	[.807, 70]	[34.15, 70]	[.789, 70]	[21.97, 70]
Years of independence	-.007***	-.007*	-.009***	-.010***	-.008***	-.008**	-.008***	-.009**
	(.003)	(.004)	(.003)	(.003)	(.003)	(.003)	(.003)	(.004)
	[.799, 72]	[28.29, 72]	[.791, 72]	[28.61, 72]	[.801, 69]	[37.85, 69]	[.788, 69]	[23,73, 69]
Monarchy	-3.288	-3.920	-3.582	-8.161**	-4.090	-5.426*	-3.027	-3.341
	(2.772)	(3.276)	(3.209)	(2.906)	(2.783)	(2.958)	(3.093)	(3.546)
	[.797, 73]	[31.30, 73]	[.777, 73]	[40.10, 73]	[.796, 70]	[37.45, 70]	[.782, 70]	[22.78, 70]

Note: all regressions include a constant term and regional dummies. *** (**) [*] denotes significance at p<.01 (p<.05) [p<.10]. In squared brackets are the adjusted R square of the regression and the number of observations.

Table 4. Extreme Bounds Analysis, Political Factors

	(1) lower bound	(2) upper bound	(3) % sign.	(4) CDF(0)	(5) beta	(6) StD.
Full Sample						
Government Fractionalization	-10.10	30.58	25.49	0.93	8.19	4.80
Political ideology , 10-yr	-7.25	12.54	0.00	0.66	0.79	2.36
Political ideology, current	-16.39	9.98	0.00	0.60	-0.44	3.15
Democracy, Gastil index	-5.56	8.81	0.17	0.62	0.22	1.32
Democracy, Polity IV	-1.75	2.23	0.01	0.64	-0.09	0.46
Democratic legacy	-0.46	1.13	0.22	0.21	1.71	0.84
Bicameral parliament	-3.77	12.96	4.30	0.92	3.71	2.49
Years of Independence	-0.02	0.00	98.92	1.00	-0.01	0.00
Monarchy	-14.62	10.63	2.40	0.82	-3.01	3.08
Low Income						
Government Fractionalization	-19.64	26.82	0.17	0.67	2.06	5.46
Political ideology , 10-yr	-9.05	10.82	0.02	0.65	-0.50	2.40
Political ideology, current	-15.95	10.41	0.00	0.66	-1.23	3.12
Democracy, Gastil index	-4.09	13.52	5.65	0.76	1.27	1.42
Democracy, Polity IV	-1.69	2.29	0.01	0.62	0.00	0.49
Democratic legacy	-0.57	1.22	0.21	0.22	0.41	0.81
Bicameral parliament	-2.80	13.42	40.64	0.97	4.93	2.50
Years of Independence	-0.02	0.00	99.99	1.00	-0.01	0.00
Monarchy	-15.05	10.16	5.12	0.84	-3.37	3.07
Middle Income						
Government Fractionalization	-17.76	33.27	10.65	0.85	7.19	6.10
Political ideology , 10-yr	-10.26	14.35	0.00	0.63	-0.17	2.80
Political ideology, current	-19.73	11.84	0.00	0.65	-1.38	3.54
Democracy, Gastil index	-6.01	15.17	4.25	0.66	0.70	1.59
Democracy, Polity IV	-1.81	2.24	0.00	0.63	-0.03	0.49
Democratic legacy	-0.63	1.42	0.25	0.25	2.35	0.83
Bicameral parliament	-4.59	14.75	7.48	0.94	4.84	3.02
Years of Independence	-0.03	0.00	99.83	1.00	-0.01	0.00
Monarchy	-16.73	10.92	7.58	0.85	-3.91	3.40
High Income						
Government Fractionalization	-15.78	30.89	5.83	0.83	6.22	5.73
Political ideology , 10-yr	-11.77	12.64	0.02	0.67	-0.99	2.69
Political ideology, current	-18.05	14.84	0.23	0.67	-1.62	3.74
Democracy, Gastil index	-7.90	11.82	0.24	0.65	0.30	1.61
Democracy, Polity IV	-1.87	2.80	0.92	0.67	0.23	0.54
Democratic legacy	-0.44	1.67	0.43	0.24	26.57	0.94
Bicameral parliament	-5.46	15.00	2.29	0.91	4.50	3.14
Years of Independence	-0.02	0.01	76.65	0.98	-0.01	0.00
Monarchy	-17.49	8.59	22.52	0.93	-5.30	3.23

Notes: Each row is based on 12341 regressions.
Baseline variables included in all regressions.

(1) lower bound	(1) lower bound	(2) upper bound	(3) % sign.	(4) CDF(0)	(5) beta	(6) StD.
Male						
Government Fractionalization	-12.61	29.49	13.44	0.88	6.92	5.06
Political ideology , 10-yr	-9.46	11.77	0.00	0.62	-0.19	2.43
Political ideology, current	-16.61	12.31	0.00	0.60	-0.33	3.35
Democracy, Gastil index	-5.37	9.17	0.03	0.63	0.44	1.48
Democracy, Polity IV	-1.69	2.38	0.02	0.63	-0.04	0.47
Democratic legacy	-0.41	1.30	0.36	0.21	21.23	0.94
Bicameral parliament	-4.32	12.93	13.01	0.94	4.28	2.60
Years of Independence	-0.02	0.00	93.73	0.99	-0.01	0.00
Monarchy	-16.23	8.76	9.76	0.88	-3.75	2.97
Female						
Government Fractionalization	-13.39	32.00	20.10	0.90	7.86	5.27
Political ideology , 10-yr	-8.80	12.56	0.00	0.62	0.23	2.37
Political ideology, current	-16.02	11.00	0.00	0.60	-0.49	3.09
Democracy, Gastil index	-6.07	8.85	0.05	0.67	-0.40	1.45
Democracy, Polity IV	-1.83	2.20	0.39	0.64	-0.04	0.48
Democratic legacy	-0.47	1.37	0.36	0.22	18.83	0.94
Bicameral parliament	-4.38	12.89	6.69	0.92	3.81	2.60
Years of Independence	-0.02	0.00	99.89	1.00	-0.01	0.00
Monarchy	-18.67	10.33	10.17	0.87	-4.11	3.30
Left						
Government Fractionalization	-10.42	30.70	17.92	0.90	7.40	5.00
Political ideology , 10-yr	-10.06	10.44	0.00	0.63	-0.55	2.46
Political ideology, current	-17.31	11.69	0.00	0.64	-1.24	3.53
Democracy, Gastil index	-4.52	12.80	2.07	0.83	1.94	1.80
Democracy, Polity IV	-1.55	2.36	0.00	0.63	0.04	0.50
Democratic legacy	-0.37	1.30	0.35	0.23	10.96	0.92
Bicameral parliament	-1.54	13.86	78.88	0.98	5.62	2.56
Years of Independence	-0.02	0.00	98.89	1.00	-0.01	0.00
Monarchy	-16.31	9.89	16.31	0.91	-4.40	2.99
Right						
Government Fractionalization	-14.25	29.86	10.56	0.87	6.73	5.19
Political ideology , 10-yr	-9.77	11.86	0.00	0.64	-0.52	2.39
Political ideology, current	-18.01	10.37	0.00	0.70	-1.79	3.16
Democracy, Gastil index	-5.15	12.36	4.73	0.72	1.14	1.70
Democracy, Polity IV	-1.25	2.44	0.44	0.68	0.21	0.47
Democratic legacy	-0.38	1.24	0.33	0.22	11.58	0.92
Bicameral parliament	-3.74	11.97	4.71	0.93	3.97	2.60
Years of Independence	-0.02	0.00	93.77	0.99	-0.01	0.00
Monarchy	-17.91	10.42	9.08	0.84	-3.54	3.21

Notes: Each row is based on 12341 regressions.
Baseline variables included in all regressions.

Table 5. Results – Economic Factors

Dependent variable, group	All		Lower		Middle		Upper	
Estimation	OLS	Robust	OLS	Robust	OLS	Robust	OLS	Robust
				BASELINE INCLUDED				
Average tariff rate	.259	.312	.299	.197	.517	.432	.208	.101
	(.320)	(.307)	(.321)	(.312)	(.351)	(.359)	(.369)	(.355)
	[.746, 65]	[18.29, 65]	[.712, 63]	[14.65, 63]	[.710, 63]	[15.26, 63]	[.689, 63]	[13.34, 63]
Income inequality	.092	-.033	.331	.303	.179	.243	.148	.106
	(.241)	(.233)	(.246)	(.182)	(.261)	(.240)	(.266)	(.280)
	[.778, 67]	[27.94, 67]	[.773, 66]	[44.64, 66]	[.745, 66]	[30.02, 66]	[.721, 66]	[19.07, 66]
Inflation	-.029	-.023	-.033*	-.026	-.023	-.012	-.017	-.017
	(.018)	(.036)	(.018)	(.035)	(.020)	(.039)	(.024)	(.044)
	[.783, 70]	[23.56, 70]	[.758, 68]	[20.68, 68]	[.745, 68]	[20.96, 68]	[.713, 68]	[14.75, 68]
Unemployment	-.217	-.287	-.258	-.253	-.169	-.140	-.026	-.016
	(.203)	(.219)	(.206)	(.207)	(.225)	(.251)	(.255)	(.282)
	[.798, 69]	[30.67, 69]	[.782, 67]	[28.88, 67]	[.764, 67]	[24.14, 67]	[.727, 67]	[15.73, 67]
Globalization index, 1995	-1.249	-1.095	.991	1.839	-.798	.063	-2.685	-3.189
	(1.554)	(1.822)	(1.483)	(1.704)	(2.048)	(2.070)	(2.281)	(2.101)
	[.749, 64]	[17.64, 64]	[.711, 62]	[16.36, 62]	[.704, 62]	[14.78, 62]	[.694, 62]	[13.70, 62]
Compound growth, 5 years	-12.286	-10.938	-5.339	-2.644	-7.323	-5.161	-16.369	-15.475
	(8.808)	(11.015)	(8.134)	(10.432)	(9.927)	(12.458)	(11.541)	(13.685)
	[.782, 68]	[23.95, 68]	[.744, 66]	[22.24, 66]	[.744, 66]	[19.67, 66]	[.715, 66]	[14.41, 67]
Growth stability	-43.550	-30.102	-85.629	-67.657	-56.744	-26.431	-91.164	-205.387**
	(59.924)	(72.223)	(57.724)	(53.965)	(62.068)	(79.504)	(85.525)	(78.193)
	[.777, 65]	[24.73, 65]	[.748, 63]	[40.05, 63]	[.742, 63]	[21.28, 63]	[.712, 63]	[20.35, 63]
Subsidies	.076	.095	.017	.028	.069	.104	.027	.042
	(.091)	(.103)	(.080)	(.102)	(.115)	(.119)	(.110)	(.114)
	[.773, 65]	[19.85, 65]	[.749, 63]	[17.84, 63]	[.734, 63]	[16.30, 63]	[.741, 63]	[15.50, 63]
Top marginal tax rate	.019	-.015	-.001	-.068	.033	-.013	.089	.142
	(.109)	(.133)	(.127)	(.133)	(.132)	(.159)	(.121)	(.139)
	[.756, 66]	[19.49, 66]	[.727, 64]	[16.84, 64]	[.707, 64]	[14.31, 64]	[.701, 64]	[19.34, 64]
Public debt, % of GDP	-.052	-.043	-.034	-.034	-.067	-.077*	-.039	-.034
	(.035)	(.046)	(.039)	(.034)	(.044)	(.043)	(.044)	(.057)
	[.753, 64]	[21.49, 64]	[.727, 62]	[36.41, 62]	[.718, 62]	[26.97, 62]	[.678, 62]	[11.85, 62]
Access to technology	.022	.021	.014	-.004	.022	.016	.020	.023
	(.023)	(.020)	(.024)	(.020)	(.028)	(.024)	(.026)	(.025)
	[.796, 72]	[27.48, 72]	[.772, 70]	[25.45, 70]	[.760, 70]	[22.30, 70]	[.728, 70]	[17.04, 70]

Note: all regressions include a constant term and regional dummies. *** (**) [*] denotes significance at p<.01 (p<.05) [p<.10]. In squared brackets are the adjusted R square of the regression and the number of observations.

Table 5 (continued). Results – Economic Factors

Dependent variable, group	Men		Women		Leftwing		Rightwing	
Estimation	OLS	Robust	OLS	Robust	OLS	Robust	OLS	Robust
			BASELINE INCLUDED					
Average tariff rate	.283	.383	.229	.258	.335	.260	.139	.121
	(.317)	(.301)	(.326)	(.320)	(.296)	(.295)	(.319)	(.327)
	[.756, 65]	[20.85, 65]	[.714, 65]	[15.18, 65]	[.742, 63]	[20.72, 63]	[.729, 63]	[15.11, 63]
Income inequality	.301	.220	.126	.090	.288	.259	.180	.179
	(.239)	(.239)	(.246)	(.247)	(.249)	(.231)	(.266)	(.271)
	[.786, 67]	[27.84, 67]	[.758, 67]	[22.43, 67]	[.782, 65]	[29.93, 65]	[.766, 65]	[19.85, 65]
Inflation	-.014	-.010	-.035*	-.029	-.025	-.014	-.017	-.015
	(.019)	(.036)	(.018)	(.037)	(.017)	(.034)	(.019)	(.037)
	[.785, 70]	[24.57, 70]	[.763, 70]	[21.50, 70]	[.783, 67]	[27.21, 67]	[.774, 67]	[20.13, 67]
Unemployment	-.164	-.228	-.099	-.147	-.101	-.128	-.192	-.253
	(.215)	(.224)	(.209)	(.229)	(.217)	(.211)	(.211)	(.239)
	[.796, 69]	[30.29, 69]	[.778, 69]	[27.14, 69]	[.789, 67]	[32.59, 67]	[.788, 67]	[23.02, 67]
Globalization index, 1995	-.520	-.274	-.770	-.498	-.587	-.149	.201	.321
	(1.599)	(1.808)	(1.643)	(1.907)	(1.609)	(1.712)	(1.717)	(1.884)
	[.757, 64]	[19.29, 64]	[.719, 64]	[14.96, 64]	[.743, 62]	[20.72, 62]	[.739, 62]	[15.44, 62]
Compound growth, 5 years	-15.111	-12.997	-8.180	-6.517	-12.514	-10.568	-9.598	-7.334
	(9.388)	(10.805)	(8.698)	(11.491)	(8.118)	(9.656)	(8.542)	(11.454)
	[.789, 66]	[27.02, 66]	[.756, 66]	[20.33, 66]	[.778, 67]	[31.39, 67]	[.768, 67]	[20.08, 67]
Growth stability	-44.996	-35.853	-60.445	-50.889	-72.941	-40.272	-59.969	-39.645
	(64.405)	(67.619)	(60.331)	(74.935)	(56.129)	(65.369)	(57.519)	(78.216)
	[.779, 65]	[31.20, 65]	[.754, 65]	[21.29, 65]	[.769, 64]	[30.08, 64]	[.758, 64]	[19.12, 64]
Subsidies	.063	.074	.057	.081	-.012	.009	.031	.041
	(.089)	(.102)	(.094)	(.109)	(.101)	(.103)	(.099)	(.112)
	[.783, 65]	[21.42, 65]	[.749, 65]	[17.19, 65]	[.776, 63]	[22.06, 63]	[.765, 63]	[17.56, 63]
Top marginal tax rate	.084	.059	.078	.065	.153	.066	.024	-.000
	(.109)	(.133)	(.114)	(.137)	(.103)	(.126)	(.115)	(.144)
	[.764, 66]	[21.35, 66]	[.731, 66]	[17.64, 66]	[.759, 63]	[24.11, 63]	[.737, 63]	[15.64, 63]
Public debt, % of GDP	-.050	-.038	-.054	-.045	-.056	-.044	-.044	-.042
	(.037)	(.045)	(.036)	(.048)	(.039)	(.045)	(.042)	(.052)
	[.763, 64]	[25.88, 64]	[.736, 64]	[18.66, 64]	[.755, 61]	[22.81, 61]	[.742, 61]	[15.20, 61]
Access to technology	.016	.015	.024	.023	.021	.008	.017	.014
	(.022)	(.020)	(.024)	(.021)	(.023)	(.019)	(.024)	(.021)
	[.798, 72]	[28.84, 72]	[.778, 72]	[24.68, 70]	[.796, 69]	[31.40 69]	[.787, 69]	[22.30, 69]

Note: all regressions include a constant term and regional dummies. *** (**) [*] denotes significance at p<.01 (p<.05) [p<.10]. In squared brackets are the adjusted R square of the regression and the number of observations.

Table 6. Extreme Bounds Analysis, Economic Factors

	(1) lower bound	(2) upper bound	(3) % sign.	(4) CDF(0)	(5) beta	(6) StD.
Full Sample						
Average tariff rate	-1.17	1.21	0.00	0.63	0.08	0.33
Income Inequality	-0.71	1.53	0.00	0.75	0.20	0.27
Inflation	-0.11	0.08	5.88	0.89	-0.03	0.02
Unemployment	-1.59	0.78	0.32	0.84	-0.28	0.26
Globalization index, 1995	-10.13	7.97	0.55	0.69	-0.82	1.98
Compound growth, 5 years	-51.54	27.11	5.11	0.88	-12.95	10.24
Growth Stability	-316.78	208.83	0.70	0.77	-49.31	61.82
Subsidies	-0.35	0.39	0.01	0.68	0.04	0.10
Top marginal tax rate	-0.38	0.76	0.37	0.65	0.05	0.12
Public debt, % of GDP	-0.26	0.22	1.11	0.82	-0.04	0.04
Access to Technology	-0.07	0.11	0.82	0.81	0.02	0.03
Low Income						
Average tariff rate	-1.03	1.39	0.04	0.79	0.29	0.34
Income Inequality	-0.57	1.52	7.01	0.90	0.37	0.27
Inflation	-0.13	0.07	10.32	0.91	-0.03	0.02
Unemployment	-1.78	0.72	2.11	0.89	-0.35	0.27
Globalization index, 1995	-8.27	9.41	1.11	0.73	1.19	1.97
Compound growth, 5 years	-41.13	49.38	0.04	0.71	-5.06	9.46
Growth Stability	-415.85	167.92	4.72	0.90	-91.26	64.89
Subsidies	-0.36	0.42	0.35	0.65	0.02	0.09
Top marginal tax rate	-0.51	0.65	0.01	0.63	0.03	0.14
Public debt, % of GDP	-0.26	0.22	0.78	0.75	-0.03	0.05
Access to Technology	-0.09	0.11	0.54	0.76	0.02	0.03
Middle Income						
Average tariff rate	-0.98	1.71	1.55	0.89	0.48	0.37
Income Inequality	-1.01	1.58	0.65	0.78	0.24	0.29
Inflation	-0.13	0.12	0.58	0.82	-0.02	0.02
Unemployment	-1.83	0.95	0.00	0.78	-0.26	0.30
Globalization index, 1995	-10.80	10.82	0.01	0.66	0.19	2.52
Compound growth, 5 years	-50.43	52.67	0.40	0.73	-7.28	11.92
Growth Stability	-421.42	233.59	0.56	0.81	-66.30	69.69
Subsidies	-0.44	0.53	0.02	0.68	0.05	0.13
Top marginal tax rate	-0.51	0.77	0.04	0.67	0.06	0.15
Public debt, % of GDP	-0.35	0.24	1.09	0.85	-0.06	0.05
Access to Technology	-0.08	0.14	1.41	0.80	0.03	0.03
High Income						
Average tariff rate	-1.24	1.49	0.00	0.67	0.16	0.38
Income Inequality	-0.88	1.50	0.11	0.77	0.23	0.29
Inflation	-0.13	0.14	0.59	0.76	-0.02	0.03
Unemployment	-1.93	1.06	0.37	0.69	-0.15	0.32
Globalization index, 1995	-10.42	10.08	3.12	0.75	-1.10	2.41
Compound growth, 5 years	-68.67	46.34	8.61	0.87	-16.55	13.17
Growth Stability	-495.27	215.18	19.31	0.88	-119.52	85.83
Subsidies	-0.44	0.44	0.00	0.61	0.01	0.12
Top marginal tax rate	-0.38	0.85	2.88	0.83	0.14	0.13
Public debt, % of GDP	-0.26	0.24	0.12	0.72	-0.03	0.05
Access to Technology	-0.08	0.13	1.49	0.81	0.03	0.03

Notes: Each row is based on 12341 regressions.

Baseline variables included in all regressions.

Table 6 (continued). Extreme Bounds Analysis, Economic Factors

	(1) lower bound	(2) upper bound	(3) % sign.	(4) CDF(0)	(5) beta	(6) StD.
Male						
Average tariff rate	-1.12	1.45	0.00	0.77	0.26	0.33
Income Inequality	-0.63	1.57	4.89	0.90	0.37	0.26
Inflation	-0.10	0.11	0.33	0.72	-0.01	0.02
Unemployment	-1.50	0.89	0.06	0.78	-0.23	0.29
Globalization index, 1995	-9.29	9.88	0.04	0.67	0.26	2.01
Compound growth, 5 years	-57.85	29.34	11.11	0.91	-15.73	10.90
Growth Stability	-357.35	230.82	2.71	0.76	-54.61	68.73
Subsidies	-0.35	0.42	0.11	0.70	0.05	0.10
Top marginal tax rate	-0.34	0.74	0.39	0.80	0.12	0.13
Public debt, % of GDP	-0.29	0.21	2.00	0.86	-0.05	0.04
Access to Technology	-0.07	0.11	1.03	0.79	0.02	0.02
Female						
Average tariff rate	-1.23	1.30	0.00	0.71	0.19	0.34
Income Inequality	-0.82	1.43	0.01	0.74	0.19	0.27
Inflation	-0.12	0.09	16.86	0.92	-0.03	0.02
Unemployment	-1.41	0.95	0.00	0.72	-0.17	0.28
Globalization index, 1995	-9.85	9.30	0.13	0.66	-0.10	2.10
Compound growth, 5 years	-43.23	40.54	0.10	0.76	-7.31	10.00
Growth Stability	-332.48	188.11	0.88	0.81	-61.64	64.64
Subsidies	-0.35	0.43	0.03	0.68	0.04	0.10
Top marginal tax rate	-0.36	0.75	1.08	0.80	0.11	0.13
Public debt, % of GDP	-0.27	0.21	0.17	0.83	-0.05	0.05
Access to Technology	-0.07	0.12	2.97	0.83	0.03	0.03
Left						
Average tariff rate	-0.87	1.48	0.45	0.84	0.32	0.31
Income Inequality	-0.67	1.55	0.44	0.87	0.33	0.28
Inflation	-0.12	0.09	3.99	0.86	-0.02	0.02
Unemployment	-1.54	1.04	0.00	0.69	-0.15	0.29
Globalization index, 1995	-9.17	9.05	0.05	0.65	-0.06	2.07
Compound growth, 5 years	-52.89	38.26	7.53	0.88	-12.67	9.96
Growth Stability	-418.84	185.62	4.35	0.87	-80.46	64.05
Subsidies	-0.45	0.38	0.00	0.61	-0.01	0.11
Top marginal tax rate	-0.23	0.86	6.32	0.91	0.18	0.12
Public debt, % of GDP	-0.29	0.24	1.23	0.86	-0.05	0.05
Access to Technology	-0.08	0.12	1.41	0.82	0.03	0.03
Right						
Average tariff rate	-1.16	1.26	0.00	0.66	0.12	0.33
Income Inequality	-0.79	1.34	0.00	0.75	0.20	0.28
Inflation	-0.11	0.10	0.28	0.74	-0.01	0.02
Unemployment	-1.63	0.77	0.13	0.82	-0.27	0.28
Globalization index, 1995	-8.13	9.52	0.06	0.68	0.80	2.08
Compound growth, 5 years	-49.21	46.46	1.09	0.81	-9.60	10.11
Growth Stability	-371.76	200.61	2.90	0.84	-70.24	63.23
Subsidies	-0.40	0.45	0.00	0.64	0.03	0.11
Top marginal tax rate	-0.43	0.64	0.02	0.68	0.06	0.13
Public debt, % of GDP	-0.26	0.21	0.17	0.77	-0.04	0.05
Access to Technology	-0.09	0.12	0.64	0.77	0.02	0.03

Notes: Each row is based on 12341 regressions.
Baseline variables included in all regressions.

Table 7. Results – Institutional Factors

Dependent variable, group	All		Lower		Middle		Upper	
Estimation	OLS	Robust	OLS	Robust	OLS	Robust	OLS	Robust
				BASELINE INCLUDED				
Governance	1.403	1.347	1.414	1.241	.813	-1.576	-1.640	-.996
	(2.393)	(2.622)	(2.355)	(2.593)	(2.787)	(2.644)	(2.818)	(3.210)
	[.793, 73]	[28.38, 73]	[.769, 71]	[25.00, 71]	[.757, 71]	[31.40, 71]	[.723, 71]	[17.59, 71]
Legal quality	.303	.397	.205	.400	.358	.454	-.644	-.411
	(.814)	(1.134)	(.779)3	(1.111)	(.968)	(1.277)	(1.102)	(1.279)
	[.743, 65]	[17.65, 65]	[.707, 63]	[15.24, 63]	[.698, 63]	[14.95, 63]	[.689, 63]	[13.25, 63]
Regulatory quality	-.527	-.527	-.261	.180	-.038	-1.017	1.235	1.047
	(1.279)	(1.522)	(1.222)	(1.465)	(1.547)	(1.476)	(1.480)	(1.686)
	[.743, 65]	[17.69, 65]	[.707, 63]	[15.91, 63]	[.697, 63]	[22.00, 63]	[.691, 63]	[14.22, 63]
Lack of corruption	1.148	.983	.993	.661	.936	-.307	.091	.254
	(1.002)	(1.022)	(.911)	(.958)	(1.264)	(1.051)	(1.150)	(1.278)
	[.786, 72]	[28.27, 72]	[.758, 70]	[26.94, 70]	[.749, 70]	[29.03, 70]	[.712, 70]	[16.12, 70]
Press freedom	-.096	-.100	-.047	-.090	-.109	-.125	-.077	-.069
	(.081)	(.081)	(.076)	(.079)	(.088)	(.094)	(.090)	(.101)
	[.787, 72]	[25.33, 72]	[.756, 70]	[22.18, 69]	[.753, 70]	[20.09, 70]	[.715, 70]	[15.23, 69]
Confidence in parliament	8.328*	7.056	7.902*	6.507	8.817	7.562	8.169	16.669***
	(4.862)	(4.891)	(4.521)	(4.832)	(5.994)	(5.479)	(6.891)	(5.327)
	[.803, 71]	[27.84, 71]	[.779, 69]	[23.48, 69]	[.773, 69]	[22.79, 69]	[.733, 69]	[22.89, 69]
Ethnic diversity	-.307	-.329	1.059	8.624*	4.432	13.227**	4.275	1.740
	(6.934)	(6.120)	(7.006)	(4.618)	(7.923)	(5.932)	(8.182)	(7.759)
	[.782, 72]	[25.60, 72]	[.755, 70]	[45.32, 70]	[.748, 70]	[33.09, 70]	[.714, 70]	[15.93, 70]
Protestants	1.669***	1.711***	1.746***	1.804***	2.200***	2.500***	2.287***	2.295***
	(.504)	(.598)	(.476)	(.565)	(.568)	(.590)	(.564)	(.656)
Catholics	1.003**	.851*	.964**	.963**	1.463***	1.227**	1.769***	1.672***
	(.417)	(.506)	(.393)	(.459)	(.457)	(.499)	(.419)	(.556)
Orthodox	-.329	-.308	-.139	-.135	-.246	-.226	-.293	-.170
	(.311)	(.549)	(.318)	(.515)	(.316)	(.538)	(.495)	(.599)
Muslims	.057	.172	.344	.479	.859**	.815	1.519***	1.471**
	(.521)	(.572)	(.358)	(.602)	(.400)	(.635)	(.513)	(.706)
Hindi	-.857	-35.996	-6.199**	-7.092	-7.059*	-61.524	-7.502*	-34.112
	(4.255)	(46.629)	(2.989)	(6.640)	(3.986)	(45.834)	(4.116)	(.50.994)
Buddhists	-.811	-.912	1.183*	-1.066	-.815	-.8573	-1.593**	-1.614
	(.644)	(1.071)	(.708)	(.9694)	(.734)	(1.057)	(.767)	(1.176)
	[.821, 73]	[19.68, 73]	[.801, 71]	[19.79, 70]	[.806, 71]	[22.39, 70]	[.808, 71	[16.73, 70]

Note: all regressions include a constant term and regional dummies. *** (**) [*] denotes significance at p<.01 (p<.05) [p<.10]. In squared brackets are the adjusted R square of the regression and the number of observations.

Table 7 (continued). Results- Institutional Factors

Dependent variable, group	Men		Women		Leftwing		Rightwing	
Estimation	OLS	Robust	OLS	Robust	OLS	Robust	OLS	Robust
				BASELINE INCLUDED				
Governance	-.728	-.759	-.728	1.737	-.134	-.638	1.383	1.487
	(2.397)	(2.629)	(2.397)	(2.729)	(2.167)	(2.407)	(2.432)	(2.790)
	[.794, 73]	[29.42, 73]	[.794, 73]	[24.55, 73]	[.791, 70]	[33.74, 70]	[.780, 70]	[22.16, 70]
Legal quality	-.155	-.039	-.155	.711	.097	.097	.440	.506
	(.804)	(1.129)	(.804)	(1.168)	(.822)	(1.076)	(.784)	(1.192)
	[.752, 65]	[19.20, 65]	[.752, 65]	[15.09, 65]	[.736, 63]	[20.96, 63]	[.729, 63]	[14.99, 63]
Regulatory quality	-.453	-.349	-.453	.616	-.615	-.529	1.039	1.234
	(1.293)	(1.519)	(1.293)	(1.584)	(1.134)	(1.395)	(1.217)	(1.561)
	[.752, 65]	[19.31, 65]	[.752, 65]	[15.01, 65]	[.737, 63]	[21.53, 63]	[.731, 63]	[15.26, 63]
Lack of corruption	.368	.106	.368	.863	1.148	.315	1.506	1.242
	(.993)	(1.053)	(.993)	(1.081)	(.986)	(1.002)	(1.037)	(1.155)
	[.785, 72]	[26.76, 72]	[.785, 72]	[23.06, 72]	[.785, 69]	[30.32, 69]	[.777, 69]	[20.55, 69]
Press freedom	-.042	-.039	-.042	-.131	-.009	-.033	-.094	-.128
	(.085)	(.082)	(.085)	(.082)	(.095)	(.085)	(.094)	(.098)
	[.786, 72]	[26.59, 72]	[.786, 72]	[23.09, 72]	[.781, 69]	[30.41, 69]	[.774, 69]	[20.93, 69]
Confidence in parliament	6.449	5.364	6.449	7.939	10.479**	6.705	11.087**	9.837*
	(5.157)	(4.993)	(5.157)	(4.9294)	(5.080)	(4.939)	(4.780)	(5.627)
	[.800, 71]	[27.72, 71]	[.800, 71]	[26.75, 71]	[.804, 69]	[31.95, 69]	[.796, 69]	[22.92, 69]
Ethnic diversity	2.679	3.145	2.679	4.309	2.055	2.783	6.659	8.139
	(6.824)	(6.083)	(6.824)	(6.146)	(6.660)	(5.780)	(6.546)	(6.704)
	[.786, 72]	[27.35, 72]	[.786, 72]	[24.56, 72]	[.782, 69]	[31.57, 69]	[.774, 69]	[21.53, 69]
Protestants	1.777***	1.895***	1.777***	1.974***	1.558***	1.385***	2.182***	2.182***
	(.487)	(.581)	(.487)	(.585)	(.482)	(.513)	(.439)	(.547)
Catholics	1.037**	.897*	1.037**	.965*	.987**	.878**	1.032**	.698
	(.407)	(.491)	(.407)	(.494)	(.446)	(.435)	(.404)	(.466)
Orthodox	-.209	-.237	-.209	-.401	-.409	-.499	-.299	-.286
	(.314)	(.532)	(.314)	(.536)	(.291)	(.481)	(.344)	(.513)
Muslims	.073	.450	.073	.856	.544*	.603	.672*	.709
	(.535)	(.555)	(.535)	(.558)	(.294)	(.557)	(.384)	(.593)
Hindi	-1.529	-35.477	-1.529	-41.921	-6.771**	-9.985	-4.595	-6.451
	(4.344)	(45.243)	(4.344)	(45.552)	(3.046)	(6.336)	(4.011)	(8.254)
Buddhists	-1.251*	-1.329	-1.251*	-.695	-1.257*	-.856	-1.317	-1.768*
	(.634)	(1.039)	(.634)	(1.047)	(.672)	(.924)	(.885)	(.981)
	[.827, 73	[21.90, 72]	[.827, 73	[19.57, 72]	[.823, 70]	[28.28, 70]	[.835, 70]	[23.27, 70]

Note: all regressions include a constant term and regional dummies. *** (**) [*] denotes significance at p<.01 (p<.05) [p<.10]. In squared brackets are the adjusted R square of the regression and the number of observations.

Table 8. Extreme Bounds Analysis, Institutional Factors

	(1) lower bound	(2) upper bound	(3) % sign.	(4) CDF(0)	(5) beta	(6) StD.
Full Sample						
Governance	-31.18	19.43	0.32	0.67	0.08	3.03
Legal Quality	-3.44	5.91	0.08	0.64	0.11	0.90
Regulatory Quality	-7.98	4.34	0.03	0.66	-0.55	1.36
Lack of Corruption	-4.20	9.43	7.11	0.86	1.43	1.18
Press Freedom	-0.65	0.55	0.45	0.71	-0.06	0.10
Confidence in Parliament	-5.68	36.71	59.20	0.98	10.93	5.04
Ethnic Diversity	-25.34	30.37	0.01	0.60	0.63	7.46
Protestants	-0.07	0.31	85.12	0.99	0.11	0.05
Catholics	-0.13	0.21	7.08	0.81	0.04	0.04
Orthodox	-0.28	0.09	68.98	0.98	-0.09	0.04
Muslims	-0.22	0.17	0.01	0.67	-0.02	0.05
Hindi	-14.14	10.94	8.20	0.91	-0.15	0.14
Buddhists	-26.14	407.53	7.50	0.91	3.11	1.45
Low Income						
Governance	-24.61	21.50	0.41	0.69	0.89	3.05
Legal Quality	-3.64	5.15	0.00	0.63	0.10	0.88
Regulatory Quality	-7.47	5.69	0.00	0.63	-0.38	1.30
Lack of Corruption	-5.06	8.28	1.24	0.82	1.08	1.12
Press Freedom	-0.84	0.60	5.71	0.68	-0.05	0.10
Confidence in Parliament	-9.95	36.18	38.98	0.96	9.89	5.03
Ethnic Diversity	-24.26	32.34	0.48	0.67	3.16	7.32
Protestants	-0.05	0.32	95.91	0.99	0.13	0.04
Catholics	-0.18	0.21	5.95	0.77	0.04	0.05
Orthodox	-0.26	0.11	12.66	0.93	-0.07	0.04
Muslims	-0.20	0.24	0.02	0.65	-0.01	0.05
Hindi	-20.45	18.10	10.95	0.85	-0.60	0.68
Buddhists	-171.37	418.01	7.95	0.91	2.65	1.91
Middle Income						
Governance	-37.58	23.83	0.59	0.68	0.12	3.58
Legal Quality	-4.17	6.32	0.00	0.65	0.36	1.07
Regulatory Quality	-8.70	6.48	0.00	0.61	-0.08	1.61
Lack of Corruption	-5.05	11.11	2.46	0.80	1.38	1.47
Press Freedom	-1.08	0.56	5.92	0.79	-0.11	0.12
Confidence in Parliament	-10.34	46.16	33.64	0.95	11.91	6.46
Ethnic Diversity	-23.31	40.07	1.78	0.75	5.90	8.09
Protestants	-0.08	0.40	87.21	0.99	0.14	0.06
Catholics	-0.17	0.27	7.94	0.86	0.07	0.05
Orthodox	-0.38	0.11	51.23	0.97	-0.11	0.05
Muslims	-0.20	0.30	0.16	0.66	0.02	0.05
Hindi	-22.85	21.41	4.52	0.80	-0.83	0.84
Buddhists	-203.89	484.99	6.12	0.91	2.72	2.29
High Income						
Governance	-41.00	15.73	2.07	0.74	-2.28	3.33
Legal Quality	-7.06	4.20	0.57	0.72	-0.66	1.15
Regulatory Quality	-4.86	8.64	0.70	0.79	1.31	1.52
Lack of Corruption	-5.69	10.54	0.70	0.71	0.64	1.28
Press Freedom	-1.01	0.48	1.49	0.71	-0.07	0.12
Confidence in Parliament	-15.64	43.03	25.04	0.91	10.95	6.86
Ethnic Diversity	-27.65	35.76	0.15	0.70	4.12	8.11
Protestants	-0.10	0.42	73.76	0.98	0.14	0.06
Catholics	-0.12	0.30	33.53	0.94	0.09	0.05
Orthodox	-0.39	0.10	76.84	0.98	-0.13	0.05
Muslims	-0.20	0.44	2.06	0.78	0.06	0.07
Hindi	-22.51	19.26	0.92	0.70	-0.47	0.90
Buddhists	-187.55	470.39	17.35	0.95	2.76	2.23

Notes: Each row is based on 12341 regressions.

Baseline variables included in all regressions.

Table 8 (continued). Extreme Bounds Analysis, Institutional Factors

	(1) lower bound	(2) upper bound	(3) % sign.	(4) CDF(0)	(5) beta	(6) StD.
Male						
Governance	-32.74	16.92	0.49	0.70	-1.52	3.06
Legal Quality	-3.96	5.67	0.02	0.65	-0.14	0.90
Regulatory Quality	-7.77	4.74	0.00	0.65	-0.49	1.35
Lack of Corruption	-5.14	9.05	0.26	0.72	0.65	1.19
Press Freedom	-0.69	0.57	0.11	0.64	-0.02	0.11
Confidence in Parliament	-11.33	35.67	14.26	0.91	8.54	5.73
Ethnic Diversity	-22.66	32.35	0.49	0.69	3.76	7.31
Protestants	-0.06	0.34	95.09	0.99	0.13	0.04
Catholics	-0.14	0.22	6.73	0.82	0.05	0.05
Orthodox	-0.29	0.13	58.29	0.97	-0.08	0.04
Muslims	-0.25	0.27	0.05	0.70	-0.02	0.05
Hindi	-16.45	22.46	0.02	0.64	-0.26	0.76
Buddhists	-123.15	429.14	30.28	0.95	2.71	1.72
Female						
Governance	-33.40	17.65	0.53	0.71	0.88	3.11
Legal Quality	-3.36	6.05	0.07	0.72	0.59	0.97
Regulatory Quality	-6.72	5.58	0.00	0.64	0.42	1.41
Lack of Corruption	-4.76	9.21	5.55	0.85	1.41	1.22
Press Freedom	-0.76	0.46	1.90	0.82	-0.11	0.11
Confidence in Parliament	-7.56	37.09	56.03	0.97	11.40	5.40
Ethnic Diversity	-21.45	33.34	0.70	0.70	4.03	7.35
Protestants	-0.07	0.36	89.52	0.99	0.13	0.05
Catholics	-0.14	0.22	8.52	0.82	0.05	0.05
Orthodox	-0.29	0.10	74.89	0.98	-0.10	0.04
Muslims	-0.24	0.24	0.00	0.67	-0.02	0.05
Hindi	-20.95	25.47	0.06	0.61	-0.20	0.78
Buddhists	-126.88	436.06	5.66	0.87	2.86	1.90
Left						
Governance	-30.40	21.22	1.03	0.69	-0.81	3.00
Legal Quality	-4.47	6.36	0.00	0.64	0.10	0.93
Regulatory Quality	-7.75	3.58	0.02	0.70	-0.70	1.24
Lack of Corruption	-4.04	12.66	5.66	0.87	1.58	1.22
Press Freedom	-0.76	0.68	0.89	0.66	0.02	0.12
Confidence in Parliament	-7.91	38.87	50.66	0.97	11.95	5.81
Ethnic Diversity	-24.96	30.27	0.02	0.66	2.93	7.18
Protestants	-0.10	0.33	66.30	0.98	0.11	0.05
Catholics	-0.14	0.23	7.52	0.83	0.05	0.05
Orthodox	-0.29	0.11	80.97	0.98	-0.10	0.04
Muslims	-0.20	0.28	0.03	0.63	0.00	0.04
Hindi	-21.68	23.88	3.06	0.77	-0.37	0.75
Buddhists	-285.05	445.84	20.36	0.94	5.06	6.29
Right						
Governance	-33.28	20.09	0.96	0.72	0.75	3.23
Legal Quality	-4.31	4.80	0.01	0.68	0.31	0.87
Regulatory Quality	-5.19	7.79	0.01	0.76	0.96	1.30
Lack of Corruption	-4.28	11.51	14.98	0.90	1.78	1.24
Press Freedom	-0.90	0.49	5.80	0.75	-0.09	0.12
Confidence in Parliament	-8.44	38.65	62.68	0.97	12.00	5.47
Ethnic Diversity	-16.33	39.84	7.35	0.87	8.77	6.97
Protestants	-0.01	0.36	99.98	1.00	0.17	0.04
Catholics	-0.15	0.22	6.42	0.71	0.03	0.04
Orthodox	-0.27	0.12	70.71	0.98	-0.09	0.04
Muslims	-0.16	0.32	0.58	0.69	0.03	0.05
Hindi	-21.24	20.40	0.29	0.65	-0.22	0.79
Buddhists	-275.04	477.62	7.08	0.92	7.31	6.58

Notes: Each row is based on 12341 regressions.
Baseline variables included in all regressions.

Table 9. Results – Human Development Factors

Dependent variable, group	All		Lower		Middle		Upper	
Estimation	OLS	Robust	OLS	Robust	OLS	Robust	OLS	Robust
				BASELINE INCLUDED				
Primary schooling	.064	.091	.057	.105	.057	.098	.100	.094
	(.079)	(.108)	(.093)	(.111)	(.086)	(.130)	(.121)	(.1481)
	[.788, 70]	[24.04, 70]	[.757, 68]	[22.11, 68]	[.751, 68]	[19.96, 68]	[.722, 68]	[15.04, 68]
Secondary schooling	.034	.029	.036	-.090	-.042	-.143*	-.026	-.035
	(.061)	(.076)	(.063)	(.057)	(.069)	(.074)	(.071)	(.092)
	[.789, 70]	[24.65, 70]	[.754, 68]	[43.53, 68]	[.753, 68]	[31.74, 68]	[.742, 68]	[16.74, 68]
Average IQ	-.431	-.361	-.738**	-.749***	-.770**	-.794**	-.978***	-.911**
	(.295)	(.272)	(.308)	(.296)	(.347)	(.303)	(.352)	(.355)
	[.799, 73]	[35.99, 73]	[.789, 71]	[26.11, 71]	[.776, 71]	[33.11, 71]	[.755, 68]	[20.46, 71]
Fertility	1.245	.525	1.399	1.221	2.969	2.981	6.239**	5.775*
	(2.182)	(2.287)	(2.299)	(2.433)	(2.592)	(2.518)	(2.677)	(2.917)
	[.793, 73]	[28.04, 73]	[.769, 71]	[25.56, 71]	[.761, 71]	[30.87, 71]	[.743, 71]	[19.77, 71]
Infant mortality	-.012	.049	.116	.172	.166	.297**	.118	.140
	(.109)	(.121)	(.100)	(.129)	(.113)	(.125)	(.118)	(.168)
	[.783, 71]	[25.32, 71]	[.760, 69]	[24.51, 69]	[.751, 69]	[35.54, 69]	[.718, 69]	[15.87, 69]
Life expectancy	.499	.422	.316	.324	.085	-.268	-.016	-.004
	(.381)	(.468)	(.352)	(.475)	(.419)	(.484)	(.589)	(.584)
	[.796, 72]	[27.21, 72]	[.772, 70]	[23.14, 70]	[.757, 70]	[29.76, 70]	[.725, 70]	[16.56, 70]
Gender discrimination	.152	.061	.032	-.079	-.219	-.421	-.182	-.256
	(.212)	(.253)	(.239)	(.338)	(.273)	(.369)	(.292)	(.391)
	[.797, 68]	[23.21, 68]	[.759, 66]	[19.39, 66]	[.759, 66]	[20.85, 66]	[.748, 66]	[16.20, 66]
Average temperature	-.129	-.023	-.131	.199	-.411	-.221	.024	.078
	(.384)	(.307)	(.396)	(.287)	(.457)	(.389)	(.429)	(.407)
	[.778, 69]	[26.13, 69]	[.753, 67]	[33.60, 67]	[.744, 67]	[20.71, 67]	[.711, 67]	[15.96, 67]
Latitude	-.104	-.056	-.209	-.170	-.125	-.043	-.177	-.159
	(.145)	(.136)	(.133)	(.138)	(.167)	(.159)	(.162)	(.169)
	[.789, 72]	[26.12, 72]	[.770, 70]	[23.06, 70]	[.753, 70]	[21.57, 70]	[.723, 70]	[16.61, 70]
Longitude	.027	.035	.049**	.064**	.027	.041	-.002	.006
	(.027)	(.035)	(.025)	(.031)	(.032)	(.039)	(.029)	(.048)
	[.788, 72]	[34.41, 72]	[.767, 70]	[41.85, 70]	[.752, 70]	[30.79, 70]	[.717, 70]	[16.59, 70]
English speaking	-.049	-.106	4.229	4.745	1.614	2.976	-3.752	-2.406
	(3.179)	(4.208)	(2.861)	(3.556)	(3.712)	(4.395)	(4.387)	(5.266)
	[.792, 73]	[28.29, 73]	[.771, 71]	[36.98, 71]	[.758, 71]	[29.46, 71]	[.725, 71]	[17.08, 71]

Note: all regressions include a constant term and regional dummies. *** (**) [*] denotes significance at p<.01 (p<.05) [p<.10]. In squared brackets are the adjusted R square of the regression and the number of observations.

Table 9 (continued). Results – Human Development Factors

Dependent variable, group	Men		Women		Leftwing		Rightwing	
Estimation	OLS	Robust	OLS	Robust	OLS	Robust	OLS	Robust
				BASELINE INCLUDED				
Primary schooling	.088	.122	.069	.101	-.012	.068	.115	.142
	(.089)	(.107)	(.082	(.111)	(.080)	(.103)	(.076)	(.115)
	[.792, 70]	[25.64, 70]	[.766, 70]	[21.96, 70]	[.783, 68]	[30.13, 68]	[.779, 68]	[21.76, 68]
Secondary schooling	-.006	-.024	.002	-.009	-.014	-.019	.017	.017
	(.065)	(.074)	(.067)	(.079)	(.058)	(.071)	(.063)	(.082)
	[.794, 70]	[27.26, 70]	[.766, 70]	[21.42, 70]	[.784, 68]	[30.70, 68]	[.772, 68]	[20.44, 68]
Average IQ	-.594*	-.438	-.489	-.490*	-.702**	-.507*	-.714**	-.746**
	(.299)	(.293)	(.315)	(.279)	(.313)	(.298)	(.335)	(.337)
	[.807, 73]	[30.79, 73]	[.782, 73]	[32.91, 73]	[.807, 70]	[34.31, 70]	[.796, 70]	[23.84, 70]
Fertility	2.109	1.458	1.724	1.264	4.340**	3.408	3.591	3.423
	(2.249)	(2.263)	(2.387)	(2.361)	(1.984)	(2.276)	(2.461)	(2.691)
	[.798, 73]	[30.41, 73]	[.775, 73]	[25.03, 73]	[.801, 70]	[34.70, 70]	[.786, 70]	[22.22, 70]
Infant mortality	.041	.119	-.031	.066	.054	.123	.136	.192
	(.113)	(.118)	(.116)	(.121)	(.112)	(.132)	(.119)	(.149)
	[.787 ,71]	[28.23, 71]	[.762, 71]	[24.93, 71]	[.783, 68]	[30.74, 68]	[.778, 68]	[22.02, 68]
Life expectancy	.293	.229	.483	.411	.439	.332	.193	.154
	(.381)	(.469)	(.386)	(.484)	(.367)	(.449)	(.402)	(.503)
	[.797, 72]	[28.03, 72]	[.776, 72]	[23.92, 72]	[.795, 69]	[30.60, 69]	[.785, 69]	[22.35, 69]
Gender discrimination	.114	-.013	.152	.029	-.147	-.455	-.124	-.219
	(.226)	(.247)	(.237)	(.267)	(.258)	(.299)	(.258)	(.359)
	[.802, 68]	[25.61, 68]	[.770, 68]	[19.93, 68]	[.789, 66]	[33.69, 66]	[.782, 66]	[20.66, 66]
Average temperature	-.017	.130	.006	.240	-.352	-.094	-.403	-.348
	(.384)	(.311)	(.402)	(.314)	(.484)	(.336)	(.459)	(.381)
	[.781, 69]	[26.34, 69]	[.753, 69]	[23.17, 69]	[.775, 66]	[29.06, 66]	[.769, 66]	[19.92, 66]
Latitude	-.194	-.119	-.183	-.176	-.193	-.098	-.218	-.174
	(.142)	(.135)	(.147)	(.135)	(.155)	(.138)	(.156)	(.162)
	[.797, 72]	[29.02, 72]	[.773, 72]	[26.05, 72]	[.792, 69]	[32.98, 69]	[.781, 69]	[20.80, 69]
Longitude	.038	.041	.046	.052	.038	.041	.042	.047
	(.026)	(.037)	(.029)	(.038)	(.028)	(.036)	(.025)	(.041)
	[.793, 72]	[31.35, 72]	[.772, 72]	[26.49, 72]	[.789, 69]	[32.72, 69]	[.777, 69]	[21.77, 69]
English speaking	.614	.735	2.976	2.988	2.381	1.347	3.393	3.642
	(3.013)	(4.223)	(3.266)	(4.327)	(2.868)	(3.906)	(3.120)	(4.514)
	[.794, 73]	[29.31, 73]	[.775, 73]	[25.27, 73]	[.792, 70]	[32.72, 70]	[.782, 70]	[21.95, 70]

Note: all regressions include a constant term and regional dummies. *** (**) [*] denotes significance at p<.01 (p<.05) [p<.10]. In squared brackets are the adjusted R square of the regression and the number of observations.

Table 10. Extreme Bounds Analysis, Human Development Factors

	(1) lower bound	(2) upper bound	(3) % sign.	(4) CDF(0)	(5) beta	(6) StD.
Full Sample						
Primary Schooling	-0.30	0.48	0.23	0.73	0.06	0.09
Secondary Schooling	-0.28	0.31	0.04	0.72	0.04	0.07
Average IQ	-1.77	0.95	6.07	0.86	-0.40	0.34
Fertility	-9.91	11.17	0.02	0.64	0.60	2.47
Infant Mortality	-1.07	0.93	0.26	0.71	-0.10	0.16
Life Expectancy	-0.82	2.92	22.49	0.94	0.78	0.46
Gender Discrimination	-0.88	1.23	0.99	0.87	0.25	0.21
Average Temperature	-2.33	1.57	0.00	0.62	-0.12	0.44
Latitude	-0.97	0.46	0.36	0.83	-0.17	0.17
Longitude	-0.11	0.16	3.10	0.88	0.04	0.03
English speaking	-14.21	14.74	0.01	0.64	0.30	3.49
Low Income						
Primary Schooling	-0.29	0.58	0.25	0.72	0.06	0.10
Secondary Schooling	-0.27	0.30	0.03	0.70	0.03	0.07
Average IQ	-2.23	0.67	73.02	0.98	-0.81	0.35
Fertility	-10.87	12.52	0.11	0.71	1.42	2.78
Infant Mortality	-0.88	1.95	0.29	0.81	0.17	0.20
Life Expectancy	-1.37	3.70	1.67	0.76	0.35	0.45
Gender Discrimination	-1.18	1.22	0.00	0.63	0.02	0.28
Average Temperature	-2.44	1.92	0.34	0.66	-0.21	0.50
Latitude	-1.01	0.36	13.28	0.92	-0.25	0.16
Longitude	-0.10	0.14	17.23	0.92	0.05	0.03
English speaking	-10.52	18.08	3.60	0.87	3.97	3.21
Middle Income						
Primary Schooling	-0.41	0.59	0.06	0.69	0.05	0.10
Secondary Schooling	-0.38	0.26	0.96	0.74	-0.05	0.07
Average IQ	-2.56	0.95	51.04	0.96	-0.83	0.42
Fertility	-10.32	16.96	1.35	0.84	3.42	3.18
Infant Mortality	-0.99	2.44	4.97	0.87	0.25	0.22
Life Expectancy	-1.70	4.72	0.20	0.70	0.29	0.53
Gender Discrimination	-1.60	1.03	1.85	0.77	-0.25	0.31
Average Temperature	-2.91	1.86	1.35	0.80	-0.51	0.56
Latitude	-1.08	0.49	1.64	0.81	-0.19	0.19
Longitude	-0.15	0.15	0.00	0.75	0.03	0.04
English speaking	-15.70	17.66	0.10	0.67	1.50	4.03
High Income						
Primary Schooling	-0.55	0.55	0.01	0.67	0.04	0.12
Secondary Schooling	-0.36	0.27	0.30	0.74	-0.05	0.07
Average IQ	-2.46	0.86	68.47	0.98	-0.94	0.42
Fertility	-8.67	17.74	44.09	0.95	5.72	3.07
Infant Mortality	-1.22	2.01	0.44	0.75	0.13	0.23
Life Expectancy	-2.11	4.20	2.10	0.74	0.39	0.61
Gender Discrimination	-1.50	1.21	0.23	0.69	-0.16	0.33
Average Temperature	-2.38	2.29	0.00	0.61	0.03	0.54
Latitude	-1.04	0.41	4.28	0.89	-0.24	0.18
Longitude	-0.16	0.15	0.00	0.62	0.00	0.03
English speaking	-23.61	15.59	0.47	0.78	-3.54	4.49

Notes: Each row is based on 12341 regressions.

Baseline variables included in all regressions.

Table 10 (continued). Extreme Bounds Analysis, Human Development Factors

	(1) lower bound	(2) upper bound	(3) % sign.	(4) CDF(0)	(5) beta	(6) StD.
Male						
Primary Schooling	-0.26	0.51	0.08	0.79	0.09	0.10
Secondary Schooling	-0.33	0.28	0.14	0.65	-0.02	0.07
Average IQ	-2.12	0.88	27.44	0.95	-0.63	0.36
Fertility	-10.42	12.09	1.60	0.72	1.60	2.72
Infant Mortality	-0.97	1.80	0.01	0.66	0.01	0.18
Life Expectancy	-1.26	3.30	1.61	0.82	0.49	0.48
Gender Discrimination	-0.97	1.25	0.00	0.73	0.15	0.25
Average Temperature	-2.47	1.72	0.02	0.61	-0.01	0.49
Latitude	-1.09	0.39	9.86	0.92	-0.25	0.17
Longitude	-0.11	0.16	7.57	0.90	0.04	0.03
English speaking	-14.40	14.56	0.19	0.67	0.76	3.30
Female						
Primary Schooling	-0.33	0.52	0.12	0.74	0.06	0.10
Secondary Schooling	-0.35	0.30	0.01	0.63	-0.01	0.07
Average IQ	-2.12	0.94	16.93	0.92	-0.57	0.37
Fertility	-10.32	13.26	3.53	0.72	1.72	2.84
Infant Mortality	-1.05	1.71	0.01	0.67	-0.06	0.18
Life Expectancy	-0.96	3.43	8.49	0.90	0.67	0.47
Gender Discrimination	-0.98	1.28	0.02	0.76	0.18	0.26
Average Temperature	-2.46	1.71	0.01	0.61	0.00	0.49
Latitude	-1.04	0.39	11.88	0.91	-0.25	0.17
Longitude	-0.11	0.16	8.31	0.91	0.05	0.03
English speaking	-11.27	18.41	0.39	0.77	2.86	3.58
Left						
Primary Schooling	-0.49	0.35	0.02	0.69	-0.04	0.09
Secondary Schooling	-0.31	0.23	0.00	0.66	-0.02	0.06
Average IQ	-2.25	0.85	53.08	0.96	-0.74	0.37
Fertility	-6.95	14.75	26.04	0.93	4.24	2.56
Infant Mortality	-1.14	2.04	0.02	0.65	0.07	0.21
Life Expectancy	-1.06	4.26	11.68	0.90	0.65	0.46
Gender Discrimination	-1.22	1.10	0.03	0.69	-0.14	0.29
Average Temperature	-2.96	2.12	0.38	0.75	-0.42	0.60
Latitude	-1.12	0.46	2.03	0.87	-0.22	0.18
Longitude	-0.10	0.15	2.97	0.89	0.04	0.03
English speaking	-11.77	16.37	1.44	0.78	2.61	3.21
Right						
Primary Schooling	-0.32	0.51	4.42	0.84	0.10	0.09
Secondary Schooling	-0.28	0.28	0.10	0.64	0.00	0.07
Average IQ	-2.09	0.74	44.40	0.96	-0.73	0.38
Fertility	-8.37	13.80	1.59	0.86	3.44	2.97
Infant Mortality	-0.96	2.07	0.83	0.79	0.18	0.21
Life Expectancy	-1.48	4.12	0.53	0.75	0.37	0.50
Gender Discrimination	-1.17	1.08	0.06	0.65	-0.08	0.29
Average Temperature	-2.70	1.90	2.15	0.76	-0.43	0.56
Latitude	-1.06	0.39	17.39	0.91	-0.27	0.18
Longitude	-0.10	0.14	11.23	0.90	0.04	0.03
English speaking	-11.25	17.27	2.84	0.82	3.43	3.40

Notes: Each row is based on 12341 regressions.

Baseline variables included in all regressions.

Table A1. Descriptive Statistics

Variable	Average	Std. deviation	Minimum	Maximum	Observations
Access to technology	171.782	157.354	.443	499.466	75
Average IQ	92.560	8.532	66	106	75
Average tariff rate	8.839	6.489	0	32.6	66
Average temperature	14.179	6.505	4.2	27.2	72
Bicameral system	0.474	.503	0	1	76
Buddhists	2.433	14.277	0	93.0	76
Catholics	30.0855	38.299	0	98.0	76
Compound growth, 5 years	.105	.115	-.163	.484	68
Confidence in parliament	1.429	.318	0.857	2.597	74
Democracy, Polity IV	5.608	5.487	-7	10	72
English speaking	.132	.340	0	1	76
Ethnic diversity	.352	.229	.002	.9302	75
Fertility	2.818	1.414	1.435	6.974	76
GDP per capita	12,336	9,667	482	44,009	76
Gender discrimination	99.835	5.503	71.744	114.599	71
Globalization index, 1995	3.149	1.279	1.07	6.09	65
Governance	.426	.986	-1.337	1.942	76
Government consumption	18.46471	8.888	6.014	49.664	74
Government fractionalization	.299	.234	0	.815	75
Growth stability	.036	.023	.008	.112	65
Hindi	.277	1.858	0	16.0	76
Income inequality	37.434	10.031	21.50	63.43	69
Infant mortality	21.284	23.654	2.9	104	74
Inflation	14.781	33.936	-.099	242.309	71
Investment price	.8697	.355	.261	1.951	73
Lack of corruption	5.003	2.541	1.5	9.7	75
Latitude	37.281	16.778	1	65	75
Legal quality	6.672	2.001	2.35	9.62	66
Life expectancy	71.874	8.891	38.961	81.563	75
Life satisfaction, left group	40.479	19.943	8.919	77.477	73
Life satisfaction, lower group	35.388	19.084	3.572	73.196	73
Life satisfaction, men	41.696	20.231	8.646	77.0759	76
Life satisfaction, middle group	41.199	21.031	6.269	80.988	73
Life satisfaction, right group	46.294	19.582	12.256	83.293	73
Life satisfaction, upper group	50.704	19.995	6.013	87.624	73
Life satisfaction, women	42.682	19.469	7.716	77.729	76
Longitude	44.668	40.782	2	174	75
Monarchy	.1710526	.379	0	1	76
Muslims	92.12763	22.945	0	99.8	76
Openness	89.048	57.100	18.22	326.18	76
Orthodox	117.9342	28.578	0	98.0	76
Political ideology , 10-yr	.056	.509	-1	1	73
Political ideology, current	-.022	.499	-1	1	73
Press freedom	35.653	21.683	8	83	75
Primary schooling	104.204	12.457	63.26	162.296	73
Protestants	16.0412	28.125	0	95.0	76
Public debt, % of GDP	51.585	29.721	5.0	164.3	66
Regulatory quality	6.1088	1.042	3.09	8.23	66
Secondary schooling	85.992	28.505	4.824	160.76	71
Social trust	27.84679	14.17119	4.752	65.349	76
Unemployment	9.441	5.711	1.08	33.40	71
Years of independence	236.040	401.331	9	2005	75