Civil Liberties, the Unbundling of Institutions and Economic Growth

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Revised, April 2008

Abstract

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Widespread skepticism prevails among economists over a possible connection between civil liberties and the level of economic activity. Until now, empirical research on economic growth has found mixed evidence on the influence of civil liberties. Arguments about which institutions matter for growth, however, continue to suggest mechanisms that highlight the importance of the human rights captured by civil liberties. In particular we will emphasize that they can work as indicators of the prevalence of the rule of law or more narrowly of the existence of property rights institutions. The prevalence of the rule of law, we shall argue, is especially important to sustain high levels of operations in investment markets that are widely recognized as critical for growth. Disaggregation of the Freedom House Civil Liberties index allows a fresh empirical look at the effect of human rights on growth as well as an exploration of their relevance as indicators of the mechanism noted above. Our results show that one of the four subcategories of the index outperforms all available indicators of property rights institutions in explaining long-term economic growth and the level of operations in investment goods markets. This subcategory, Personal Autonomy and Individual Rights, captures the level of second generation human rights that affect the mobility of individuals with respect to housing, employment and university education, as well as the level of protection of property rights. Our findings are based on cross-country data, which is subject to a variety of well known limitations. Nonetheless, these limitations apply to any other variable ever used in this literature. Thus, one should ask why this civil liberties subcategory performs so much better using standard criteria and in the same setting.

Key words: civil liberties; human rights; long-term economic growth; rule of law; property rights institutions; socially contrived markets; investment goods markets.

JEL CODE: O10, O40, P16, P14, H40

Introduction

Relatively little work among the extensive recent empirical literature examining the impact of institutions on economic growth has focused on the role played by civil liberties. Recent attention has instead been concentrated on other measures intended to represent governance and the rule of law. Those empirical investigations that have incorporated civil liberties—most often measured by the Freedom House aggregate Civil Liberties index—have found mixed evidence of their influence on growth. For example, while Isham, Kaufmann and Pritchett (1997) present robust evidence of the impact of the aggregate Civil Liberties index on the performance of World Bank projects, Levine and Renelt (1992) find that the significance of the index is quite sensitive to changes in the conditioning set. King and Levine (1993) include the index as a covariate in their analysis of the relationship between financial development and growth, finding no evidence of civil liberties' role in shaping economic growth.

We return attention to the role of civil liberties in the context of the ongoing discussion about which institutions matter for growth, noting that these rights may be better indicators of a government's long-term commitment to the rule of law than other proxies examined in the literature, as argued by Betancourt (2004, 2006). Building on conceptual work by North (1990) and Olson (2000), we also assert that the prevalence of the rule of law—as indicated by the extent of civil liberties—is particularly crucial in determining the level of operations in certain types of markets, for example financial markets.

Given the mixed and limited empirical evidence supporting these propositions, we offer striking results on the impact of civil liberties on both income levels and the level of operations of the

investment goods market. These new empirical findings became feasible as a result of Freedom's House decision to make publicly available the four main components of its aggregate civil liberties indicators at the end of 2006.

In terms of explaining differences in income levels across countries, our work is most closely related to that of Acemoglu and Johnson (2005) on unbundling institutions. Their work focused on differentiating between contracting institutions and property rights institutions; our work focuses on differentiating between different concepts and measures of property rights institutions. Our most striking result shows that, using the same methodology as these authors, one of Freedom House's recently disaggregated components of civil liberties is far superior to the best indicator of property rights institutions Acemoglu and Johnson can find for explaining long term economic development as measured by income levels. This component is entitled "Personal Autonomy and Individual Rights" by Freedom House. It evaluates the extent of personal economic freedoms such as the choice of ownership form, employment, location and education, as well as social freedoms such as choice of marriage partners and family size.

In terms of the investment goods market, our work is closest in spirit to the work of Clague, Kiefer, Knack and Olson (1999) [heretofore CKKO] on "contract intensive money". Our most striking result in this area shows that the same component of civil liberties that explains income levels is far superior in explaining the level of operations of the investment goods markets to the alternatives in the literature, including the measure of contract intensive money used by CKKO and the property rights indicator used by Acemoglu and Johnson.

This paper also contributes to the institutions literature in more subtle forms. First, it shows that the

rule of law is a broader concept than the formal or informal protection against government and elite predation or expropriation, as characterized by Acemoglu and Johnson (2005) and Olson (2000). Our results highlight the importance of protection of individual economic rights and personal social freedoms from government activities as well as from social norms and non-governmental collective infringement. Second, it provides an opening for research into the question of why economies in East Asia are able to grow rapidly under non-democratic regimes. The beginnings of an answer lies in our main finding that not all civil liberties are created equal in terms of their impact on economic growth or investment goods markets.

The rest of this paper is organized as follows: In Section 1, we lay out a conceptual framework that relates the prevalence of civil liberties and the rule of law to the operation of certain types of markets and economic growth. We then discuss the measurement of these institutions in Section 2, comparing the newly disaggregated Freedom House Civil Liberties data with other measures used in the literature to capture the existence and quality of property rights institutions. Using these measures, we then examine the empirical evidence on the role of civil liberties in determining long-term economic growth (Section 3). We also offer results on the impact of civil liberties on the operation of certain types of markets labeled as socially contrived in the institutional literature and exemplified by the investment goods market (Section 4). We perform a variety of robustness checks on the sensitivity of the above results to features of the data in Section 5. Extension of the discussion to other issues is undertaken in Section 6. Here, we consider the role of political rights as alternative indicators of the rule of law, and the roles of geography and human capital in determining long-term growth. Finally, in our concluding remarks we offer a perspective on the paper and its implications for future research.

1. Conceptual Framework: Why Civil Liberties Matter

Succinctly put, the logic of our analysis is based on four broad propositions. First, modern economies consist of two types of markets, spontaneous and irrepressible markets and socially contrived markets. Second, a critical distinction between these two types of markets is the role that the state performs in supporting these markets. More precisely, the prevalence of the rule of law is an essential determinant of the level of operations in socially contrived markets. Third, the protection of human rights through the provision of civil liberties is one of the most—if not the most—fundamental indicators of the prevalence of the rule of law in a society. Fourth, the prevalence of the rule of law is a key factor determining the rate of economic growth in the long term. The rest of this section discusses the basis for these propositions and their implications in some detail.

Emphasis on a distinction between markets with transactions that are self-enforcing and markets with transactions that are not self-enforcing can be traced back at least to North (1990). He suggests this dichotomy, labels the two types of markets traditional and modern, respectively, and identifies three conditions that lead to self-enforcing transactions: small numbers of, repeated interactions among and information on characteristics of market participants. Similar conditions have been used in recent industrial organization literature on contracting to explain why relational contracting in developing countries is self-enforcing, for example Thompson (2005)[1].

The idea that there are two types of markets relevant for understanding economic growth was also put forth forcefully by Olson and his collaborators. They link important differences in these two

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[1] Incidentally, North (1990) also emphasized the importance of an impartial judiciary and its role as a third party enforcement mechanism in determining economic performance in modern economies, where markets with transactions that are not self-enforcing predominate.

types of markets to the differential role of government in these two types of markets. In those markets where transactions are not self-enforcing, which they labeled socially contrived, they argued that one needs contract enforcement mechanisms or, usually, these markets will not exist or operate at low levels of transactions. Exceptions arise when the gains from exchange appear so large to participants on both sides of the market that they are willing to incur the risk of non-fulfillment, for example some illegal markets. Clague, Keefer, Knack and Olson (1999), [CKKO], label these markets irrepressible. Just as in markets where transactions are self-enforcing, which they label spontaneous, explicit contract enforcement mechanisms are not necessary for these markets to thrive. These authors acknowledge the possibilities of non-governmental mechanisms that provide enforcement services, but they stress the importance of governments in providing contract enforcement mechanisms in socially contrived markets and suggest contract-intensive money (CIM) as a measure of these institutions. We accept the existence of these two types of markets and their relative importance for understanding economic growth and development as the main implication of the first proposition for our subsequent analysis.

Further insight into the role of government in different types of markets arises from papers in a conference to honor M. Olson published under the title *Market Augmenting Government*, Azfar and Cadwell (2003). In self-enforcing and irrepressible markets, the main role of the state is to provide "market augmenting services" such as law and order (the ability of governments to protect citizens from predation by other citizens, i.e. to prevent crime against property and persons by other individuals) and a medium of exchange. In socially contrived markets, however, the state needs to provide the previous services as well as contract enforcement services, for example through an independent judiciary. This is the differentiating characteristic of the role of the state in the two

types of markets and the essential market augmenting service in socially contrived markets identified by CKKO (without the label of market augmenting service, of course). It is also consistent with North's view of the difference between traditional and modern markets.

Betancourt (2004) argues that a commitment to the rule of law is another public good or "market augmenting service" that the state must provide for socially contrived markets to function at a high level[2]. This commitment entails constraining government and elite expropriation, as argued by Acemoglu and Johnson (2005), or preventing predation by government over citizens, as argued by Olson (2000). It differs from the public good "law and order" in that the latter focuses on predation by other citizens or non-government groups. It also differs from the public good "contract enforcement services" in that it is a much broader concept[3]. Furthermore, while there are private substitutes for the role of government in the provision of contract enforcement services (or of law and order), there are no private substitutes for the role of government in the provision of rule of law. Thus, our interpretation of the second proposition is that the essential difference in the role of government in these two types of markets lies in the provision of the market augmenting service or public good "rule of law" in socially contrived markets and not in providing contract enforcement mechanisms as argued by CKKO.

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[2] McGuire (2003) argues that Olson's arguments about market augmenting government follow from Samuelson's analysis of public goods and Bator's analysis of market failure. He credits Olson with bringing to our attention the idea that "...the effective functioning of private markets is itself a collective good: the better functioning they are, the more public benefit they provide." Betancourt (2006) notes that viewing market augmenting services as public goods implies that they play the role of public inputs into the operation or production of market services. The traditional modeling of public inputs such as infrastructure in the public finance literature, however, treats them as having a direct effect on production subject to economy wide diminishing returns and views them as produced under the assumption of diminishing returns, for example Feehan and Matsumoto (2000). The market augmenting services identified here seem to be subject to several features that lead to non-convexities, for example increasing returns and thresholds in their production and network externalities in their effects. We merely note this issue but do not pursue it directly in what follows.

[3] From a legal perspective, Summers (2003) illustrates the distinction in the case of secured loans by calling contract enforcement institutions for this type of loans first-order rules and the general principles of the rule of law, second-order rules.

What does one mean by the rule of law in economics? It certainly encompasses the protection of property rights. This is a widely accepted view in discussions of institutions. Property rights are usually defined at the most elementary level as the right to consume services of, the right to generate income from and the right to alienate an asset, e.g., Barzel (1989). What seems to have been relatively ignored in this literature is that the protection of human rights as part of the rule of law follows from the same logic. Violation of human rights (through loss of life, imprisonment or other less dramatic restrictions on the capabilities to make choices and enjoy their consequences) deprives individuals of property rights that emanate from every human being's most fundamental asset: her own person. These violations are inconsistent with the prevalence of the rule of law in a society. Indeed, Betancourt (2004, 2006) argues that the best indicator of a state's intentions to abide by the rule of law is the state's explicit commitment to the protection of human rights.

Part of the reason for this lack of recognition in viewing human rights as a separate but equally important dimension of property rights is an understandable but misplaced reluctance to place under the same general label something as precious as life and a physical asset such as a house. We merely note that the logic is the same without making any assertion as to the intrinsic valuations of these different rights. Furthermore, even within the category of human rights distinctions are made between the traditional ones, such as life and liberty, and more modern ones, such as economic and social freedoms. The former are frequently described as first generation human rights and the latter are frequently described as second generation human rights, e.g. Kaufmann (2004). Civil liberties usually encompass both sets of human rights.[4] One of the goals of this paper is to provide empirical evidence in support of the third proposition by examining the role of civil liberties as a measure of

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[4] Incidentally, one of the most effective mechanisms for implementing the rule of law (in terms of protecting property rights as well as first and second generation human rights) plays a similar role in providing law and order and enforcing contracts: namely, the existence of an impartial judiciary.

the prevalence of the rule of law in a society.

Relying on North's earlier work (1981), Acemoglu and Johnson (2005) distinguish between institutions supporting private contracts ("contracting institutions") and institutions constraining government and elite expropriation ("property rights institutions"). These authors put forth specific measures of each type of institution, Legal Formalism and Constraints on the Executive, respectively. Based on these two measures, they show the unimportance of contracting institutions and the importance of property rights institutions in explaining the level of income across countries and, thus, their relative importance in explaining long term economic growth. We view these results as an illustration of the fourth proposition, since property rights institutions and the specific measure used by Acemoglu and Johnson can be viewed as one manifestation of what one means by the rule of law. The prevalence of the rule of law includes the provision of institutions that protect property rights. One of our claims relevant for both the third and fourth propositions is that we have a better measure of the provision of the rule of law (and thus of property rights institutions) than the measure relied upon most heavily by Acemoglu and Johnson.

2. Measurement Issues: Civil Liberties and the Unbundling of Institutions

We proceed by following Acemoglu and Johnson (2005) in recognizing the need to differentiate between contracting institutions and property rights institutions. We differ from them in that we focus on identifying measures which capture our broader emphasis on the prevalence of the rule of law and the role of human rights as an indicator of this prevalence. Throughout, we compare these measures to the one highlighted by Acemoglu and Johnson, namely the Polity IV Constraints on the Executive variable. We also compare these measures to the one emphasized by CKKO, namely

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CIM, which is defined as the contract-based share of the money supply or CIM = (M - C)/M, where

C is currency and M is the money supply, including currency, demand deposits and time deposits.[5]

This year, for the first time ever, Freedom House agreed to release the data for every country on

each of the four subcategory scores making up the organization's aggregate civil liberties index.

Scores on the aggregate index have been available for many years. Table 1 presents the fifteen

overarching questions representing different dimensions of civil liberties on which each country is

rated. Each question is rated on a score of 0 (worst) to 4 (best). These questions are then aggregated

into four subcategories by adding the score on each of the questions making up the subcategory.

Subcategories (D), (F) and (G) are composed of four dimensions each, whereas subcategory (E) is

composed of three. Thus, the subcategory indexes for the former range from 0-16 and the one for

the latter ranges from 0-12. The scoring for the aggregate Civil Liberties index is slightly different.[6]

[Table 1 goes here]

A more detailed look at subcategory (F), which is mislabeled 'Rule of Law' from our point of view,

suffices to establish the lack of correspondence between the conceptual measure described in the

previous section and what this empirical measure represents. This subcategory reflects a rating of

four dimensions that capture very different phenomena. The first one (Is there an independent

judiciary?) reflects the existence of a mechanism that is necessary for the prevalence of the rule of

law as well as for the provision by the state of contract enforcement services and/or law and order.

The second one reflects the prevalence of the rule of law with respect to procedural issues and the

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[5] Following CKKO, we constructed our measure of the money supply from the 2005 data in International Financial Statistics by adding lines 14a (currency), 15 time deposits), 24 (demand deposits) and 25 (time and savings deposits).

[6] The aggregate index represents the sum of these four subcategory scores, which is grouped into seven roughly equal regions. The regions are scored on a scale ranging from 1 (best) to 7 (worst). For ease of comparison, we rescaled the aggregate index so that higher scores reflect better conditions.

third one reflects the prevalence of law and order. The fourth one reflects the prevalence of non-discrimination against population segments by the government.

The other three subcategories are more homogeneous in what they capture. Freedom of Expression and Belief (D) captures the ability of media (first dimension) religious institutions (second dimension) educational institutions (third dimension) and private individuals and organizations (fourth dimension) to express their views. It corresponds to one dimension of first generation human rights. The subcategory Association and Organizational Rights (E) captures the ability of individuals and organizations, including trade unions and peasant organizations, to pursue their interests collectively. It also corresponds to a (different) dimension of first generation human rights. Finally, Personal Autonomy and Individual Rights (G) captures the ability of individuals to exercise their economic rights with respect to employment, location, and ownership of property without severe infringements from the state or other individuals or groups (questions 1, 2, and 4), as well as their personal social freedoms with respect to marriage partners and family size regardless of gender (question 3). It corresponds to second generation human rights. The latter have been stressed recently by Kaufmann (2004). Subcategory G also reflects more intensely than the other categories interactions of individuals within a society as opposed to interactions with the state or its organizations.

Our dataset consists of the original data for 60 countries used by Acemoglu and Johnson (2005) supplemented in several ways. First and foremost, we merged this dataset with the Freedom House data on civil liberties and the subcategories, as well as with the organization's political rights index and subcategories discussed in further detail in section 6. We also incorporated data on CIM from International Financial Statistics mentioned in footnote 5. While not used in this section, we also

added two other datasets that are important for our robustness tests. The first one simply extends the sample by including all the OECD countries that were not ex-colonies and thus excluded from the original 60 countries; the second one consists of data we gathered on gross secondary school enrollments and "geographic" variables for the original set of 60 countries. Table A1 in the Appendix offers summary statistics on the dataset for the sample of 60 countries.

[Table 2 goes here]

In Table 2, we present the simple correlations between all four subcategories, the aggregate index (Civil Liberties), Constraints on the Executive, CIM, the political rights subcategories and secondary school enrollment rates. Not surprisingly, all of the civil liberties subcategories and the aggregate index are more highly correlated among themselves than with Constraints on the Executive or CIM. The latter has the lowest correlation with all the other indexes by a substantial margin.[7] The 'Rule of Law' (F) and the Personal Autonomy and Individual Rights (G) subcategories have their highest correlation with the aggregate index whereas Freedom of Expression and Belief (D) and Freedom of Assembly (E) have the highest correlation with each other. On the other hand, the aggregate index, Freedom of Expression and Belief and Freedom of Assembly have their lowest correlation with Personal Autonomy and Individual Rights.

It is also worthwhile to note here that some of the civil liberties subcategories are more closely correlated with certain political rights subcategories than with some of the other civil liberties ones. For example, Freedom of Expression and Belief and Association and Organizational Rights are more highly correlated with 'Electoral Process' (A) and 'Political Pluralism and Participation' (B) than

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[7] We are including CIM for completeness. Its original proponents viewed it as an indicator of contract enforcement services, not of the prevalence of the rule of law. In practice, it can capture features of both since the likelihood of flights from contract based money would be expected to be less where the rule of law prevails than where it does not prevail.

with other civil liberties. Meanwhile, the Rule of Law subcategory is most closely correlated with

the 'Functioning of Government' (C). Finally, the secondary school enrollment rate is substantially

more correlated with Personal Autonomy and Individual Rights than with any of the other

institutional variables.

3. Civil Liberties and Economic Growth

One of our arguments is that the prevalence of the rule of law as indicated by the protection of

human rights through the provision of civil liberties is a better measure of the institutions needed for

growth than the alternative measures used in the literature. In this section, we examine the empirical

power of these new measures of property rights institutions by comparing them to the main

alternative used in the literature to explain long term growth. We start our analysis by incorporating

these measures as substitutes for Constraints on the Executive in the main empirical specification

employed by Acemoglu and Johnson (2005).

[Table 3 goes here]

In the first panel of Table 3, we present the results of OLS estimation of a regression of the log of

GDP per capita in 1995 on two institutional variables: The first one, Legal Formalism, is a variable

intended to capture contracting institutions; the second variable is one from a set of different

measures intended to capture property rights institutions. For ease of comparison, we include the

variable most often used by AJ to represent property rights institutions, namely Constraints on the

Executive, in the first column, and CIM in the second column. The results of the OLS estimation in

the first panel are unambiguous. Legal Formalism continues to come in negative and statistically

insignificant at the 5%level. All of the civil liberties indicators are positive and statistically

significant at the 1% level. The main difference between these measures lies in their explanatory power. It is especially striking that the civil liberties subcategory Personal Autonomy and Individual Rights explains about 75% more of the variation in GDP per capita than the second best measure, namely Constraints on the Executive.[8]

Since the possibility of reverse causation between the institutional variables and GDP per capita is well established, we re-estimate this specification using 2SLS. As instruments for the institutional variables, we use the log of population density in 1500 and a dummy for British legal origin.[9] The results are similar in terms of signs and statistical significance to the OLS ones. However, four of the five civil liberties indicators exhibit a higher level of statistical significance than Constraints on the Executive or CIM. The only exception is the Freedom of Assembly subcategory and the results for the latter are comparable to the ones for Constraints on the Executive.

In sum, these results yield three insights: convincing evidence in favor of the proposition that the prevalence of the rule of law is a key factor in determining long-run economic growth; that civil liberties, in general, are measures of property rights institutions; and that the set of civil liberties captured in the Personal Autonomy and Individual Rights subcategory is superior to Constraints on the Executive as an empirical indicator of the prevalence of the rule of law (and thus of the level of operation of property rights institutions), at least in measuring the impact of institutions on long-term economic growth.

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[8] Not surprisingly, using a non-nested J-test, the specification relying on the Personal Autonomy and Individual Rights variable is accepted while the one relying on Constraints on the Executive is rejected at the 1% level when tested against each other.

[9] Acemoglu and Johnson also use settler mortality as an instrument in their analysis but the validity of this instrument has been challenged, see Albouy (2006). We use this instrument instead of population density in 1500 as a robustness check and discuss it in section 5.

4. Civil Liberties and the Investment Ratio

Our basic propositions assert that there are two types of markets and that the prevalence of the rule of law is far more important in determining the level of operations in the second type of markets, namely socially contrived markets, than in the first, namely spontaneous and irrepressible markets. Hence, it is desirable to consider a measure of the level of operations of socially contrived markets and explore the role of the prevalence of the rule of law in explaining this measure. In the context of aggregate data, an easily available measure of the level of operations of socially contrived markets is the level of operations of investment goods markets. These markets are usually socially contrived; they are future-oriented markets in which one of the two parties to a transaction receives most of the benefits in the present while the other receives most of the benefits in the future. This is one of the characteristics that cause transactions not to be self–enforcing.

Our measure of the level of operations in the investment goods market is the investment ratio (GDI/GDP). It provides a normalization of the variable of interest for the size of the economy. Just as in most empirical work, the measure is not a perfect fit to the theoretical or conceptual construct. While the ratio captures the level of operations in many important socially contrived markets in an economy, it also reflects the level of operations in some markets where transactions are not self-enforcing that are irrepressible markets rather than socially contrived ones, for example foreign direct investment in some extractive industries. These are markets in which the gains from exchange to both parties are so large that the prevalence of the rule of law has little or no effect on their level of operations. Nonetheless, this limitation actually supports our main finding, as it underestimates the ability of the rule of law to explain the level of operations in these markets. That is, it leads to underestimation relative to a situation in which we had separated these markets into those that are

socially contrived and those that are irrepressible.

Panel A of Table 4 presents the results of an OLS regression using the investment ratio (averaged over the 1990's) as the dependent variable and the institutional variables as the explanatory ones. The results are striking: the only variable statistically significant at the 1 % level is the Personal Autonomy and Individual Rights subcategory of civil liberties. Not surprisingly, the R^2 in this regression is two and a half times to six times higher than in any of the other six regressions. This evidence provides strong support for this particular mechanism in terms of how the prevalence of the rule of law affects economic growth, namely through the level of operations of socially contrived markets. In relative terms, second generation human rights explain variations in the level of operations of these socially contrived markets far better than any of the alternative institutional measures.[10]

Of course, the possibility of reverse causation as well as of omitted variables affecting both the investment ratio and the institutional variables also exists in these regressions. Thus, we present in panel B the results of a 2SLS regression using the log of population density in 1500 and the dummy for British colonial origin as instruments. Four of the civil liberties indicators become statistically significant at the 1 % level. CIM, Constraints on the Executive and Freedom of Assembly (E) remain insignificant at this level. Interestingly, the Personal Autonomy and Individual Rights (G) subcategory has the highest t-ratio among the four statistically significant variables at this level. In this setting several aspects of civil liberties perform better than the institutional measures used in earlier literature in terms of explaining the level of operations in socially contrived markets.

[Table 4 goes here]

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[10] Just as in the previous section, using a non-nested J-test, the specification relying on the Personal Autonomy and Individual Rights variable is accepted while the next best one relying on Constraints on the Executive is rejected at the 1% level when tested against each other.

Once again, in terms of direct effects these results yield three insights: convincing evidence that the prevalence of the rule of law is a key determinant of the level of operations in the socially contrived markets that determine investment levels; that civil liberties are a better measure of the prevalence of the rule of law (and thus of property rights institutions) than the alternatives in the literature, at least in capturing the effect of institutions on socially contrived markets; and that the Personal Autonomy and Individual Rights subcategory dominates the other measures in capturing these effects. More generally, these results also provide suggestive evidence in support of the possible causal mechanism for the effect of civil liberties and the prevalence of the rule of law on economic growth, namely through the level of operations of socially contrived markets.

5. Robustness Checks

Because of the importance of these results both as support for the conceptual framework introduced here and as an alternative for the measurement of property rights institutions, it is desirable to undertake a number of robustness checks or sensitivity analyses of our results. In this section, we consider an initial set of data-oriented robustness checks. First, we use an estimate of our preferred civil liberties subcategory for 1995 rather than the actual 2005 values released by Freedom House. Second, we report on the sensitivity of our results to dropping each observation from the sample. Third, we extend the sample to non-colonies by adding the non-included OECD countries to the data. Finally, we use settler mortality instead of population density as an instrument.

In explaining long term growth, we have posited as a dependent variable the level of GDP per capita achieved in 1995 and in explaining the level of operations of investment goods we have posited as a dependent variable the average investment-to-GDP ratio over the 1990's. Our preferred independent

variable capturing the prevalence of the rule of law is a subcategory measuring the level of Personal Autonomy and Individual Rights in 2005. To explore the sensitivity to these differences in dates, we constructed an estimate of this variable for 1995.[11] The results of using the estimated 1995 indicator of Personal Autonomy and Individual Rights are presented in Table A2 of the Appendix. They are very similar to the results for the 2005 indicator used in Tables 3 and 4. For instance, the explanatory power of this 1995 estimated variable in both regressions is far closer to the 2005 indicator than to that of any of the other indicators in Tables 3 and 4.[12]

One way of looking at the sensitivity of our analysis to outliers is to exclude each country from the sample and observe the difference it makes to the results. A succinct description of the results of this experiment is that it makes no difference. In order to provide more detail on these results without clutter, we note the following summary measures for the t-ratios of the coefficient of our preferred civil liberties subcategory (G) in each of the relevant regressions reported in Table 3. The t-ratios associated with the OLS Table 3 regression range from a minimum of 6.48 to a maximum of 7.82 with a mean of 6.89; the baseline when all 60 observations were included is 6.95. In the case of the 2SLS regression the range extends from 4.52 to 5.78, with a mean t-ratio of 5.07 and a baseline of 5.11 when all 60 observations were included. Similarly, the means for the OLS and the 2SLS regression in Table 4 were 4.00 and 3.15, respectively, whereas the baselines were 4.04 and 3.18 respectively.

Next, we extended the sample by incorporating all OECD countries not previously included in the

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[11] This was done by subtracting from the 2005 level the following term: $\{[CL\ (2005) - CL\ (1995)] * (16/7) * \rho\ (2005)\}$. The first element is the difference in the levels of the aggregate civil liberties indicator; the second element corrects for the difference in scales between the aggregate index and the Personal Autonomy and Individual Rights indicator; the third element is just the correlation between the two indicators in 2005. Thus, if the correlation were the same in the two years our estimate would equal the actual value in 1995.

[12] We also obtained GDP per capita data for 2003 and re-did our original analysis. It generated the same conclusion.

dataset because they are not former colonies. Australia, Canada, Mexico, New Zealand and the U.S. were already included. This procedure increases the sample size from 60 to 83. We present the OLS results in Table A3 of the Appendix. Our preferred institutional measure of the prevalence of the rule of law continues to have the greatest explanatory power by a wide margin in explaining long-term growth and the level of operations of investment goods markets.

Finally, as an alternative instrument to population density in 1500, we substitute the settler mortality index used by Acemoglu and Johnson (2005) in the main 2SLS regressions. This mortality index has proven to be somewhat controversial, see Albouy (2006) and Acemoglu, Johnson and Robinson's (2006) reply. In our context, use of this index as an instrument reduces sample size to 51 observations. Table A3 of the Appendix presents the 2SLS results for both the GDP and investment ratio regression sets using this instrument. The results are the same as before. The Personal Autonomy and Individual Rights subcategory outperforms all the others as the property rights institutional variable explaining long term growth and as our measure of the prevalence of the rule of law in determining the level of operations of investment goods markets.

6. Extensions

In this section we consider three extensions to the analysis that take us beyond our initial framework. They can be viewed as extensions of our results in different directions or as additional sensitivity analyses of our results. All of them required gathering of additional data. All of them raise new issues and at least two of them have given rise to controversies in the growth literature. We begin with the least controversial one, the use of political rights instead of civil liberties in their role as measures of the prevalence of the rule of law. Subsequently, we consider the effect of including

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several dimensions of geography into the analysis. Finally, we conclude by incorporating human capital into the analysis.

Political Rights

When Freedom House disaggregated the civil liberties indicator into subcategories, it also disaggregated its political rights indicators. Some contributions to the empirical explanation of long term growth have used Freedom's House aggregate indicator of political rights, for example Barro (2003). Our conceptual framework also implies that governance indicators, such as political rights, could be used as indicators of the prevalence of the rule of law. Indeed, use of Polity IV constraints on the executive can be viewed as the use of a measure of political rights. Hence, we consider the role of these indicators in affecting both long term growth and the level of operations of investment goods markets.

[Table 5 goes here]

Freedom House's political rights index is made up of three subcategories: questions capturing the existence and degree of freedom, fairness and honesty in elections, Electoral Process (A); questions on the nature of participation in the political process by individuals and groups, Political Pluralism and Participation (B); and questions on the effectiveness of governance, Functioning of Government(C)[13]. In Table 5, we compare each of the subcategories of political rights with our preferred civil liberties measure. The comparison entails using these variables as the institutional variable capturing the prevalence of the rule of law in our regressions explaining long term growth and the level of operations of investment goods markets. In all cases our preferred measure of civil liberties, Personal Autonomy and Individual Rights, outperforms each of the political rights

variables by a wide margin in terms of explanatory power in the case of OLS or the value of the t-ratio in the case of 2SLS.[14]

Geography

There are a number of dimensions of a country's geography that have been viewed as important in determining long-run growth by a number of authors. For instance, latitude has been used by Hall and Jones (1999) and others as an indicator of tropical climate. Thus, we consider the absolute value of a country's latitude as an explanatory variable. Similarly, whether or not a country is landlocked has been used by Faye, et al. (2004) to capture access to markets and infrastructure costs. Therefore we also include an indicator of whether or not a country is landlocked as an explanatory variable[15]. Additionally, Kiszewski et al (2004) have developed an indicator of a country's exogenous malaria ecology; Sachs (2003, 2005) shows that the environment for this disease affects a country's GDP. Hence, we also include the malaria ecology index as an explanatory variable[16].

[Table 6 goes here]

In Table 6, we present the results of adding all three variables to a subset of our regressions explaining long-term growth. This subset shows that our main results are not affected by the addition of the geography variables. The Personal Autonomy and Individual Rights indicator leads to the highest explanatory value among the institutional variables and is as statistically significant as

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[13] For details see Freedom in the World 2005, Freedom House (2006, pp. 780-781).

[14] Incidentally, the aggregate political rights index does worse than at least one of the subcategories in these comparisons.

[15] The dummy for landlocked countries was drawn directly from the Faye et al (2004) dataset; it equals 1 for landlocked countries and 0 for countries that border an ocean or major body of water. The landlocked countries included in our sample of ex-colonies are: Bolivia, Botswana, Burkina Faso, Ethiopia, Malawi, Mali, Nepal, Niger, Paraguay, Swaziland, Uganda, Zambia, and Zimbabwe.

[16] The malaria ecology index developed by Kiszewski et al (2004) represents the relative stability of malaria transmission based on the biologic characteristics of mosquitoes present in a country. The index varies between 0 and 39.

it was before the inclusion of the geography variables in the OLS regressions. It retains the highest

t-value among the institutional variables in the 2SLS regressions and is statistically significant at any

reasonable level. Among the geography variables, the landlocked and the latitude indicators have no

effect on long term growth in the 2SLS regressions and some limited effect in the OLS regressions.

By contrast, the malaria ecology index has a powerful negative effect on long term growth in nearly

all of the OLS and the 2SLS regressions. In the latter, however, it is statistically significant at the

5% but not at the 1% level when our preferred institutional variable is used.

Human Capital

Glaeser, et al.'s (2004) criticism of the original Acemoglu, Johnson and Robinson (2001) article on

the "Colonial Origins of Comparative Development" argues that settlers brought to the colonies at

least one other characteristic known to be useful for growth, namely human capital. Thus, we

investigate the effect of human capital on our results. For this purpose, we seek a variable that is

available for our sample of 60 countries and that represents human capital or one of its major

aspects. We follow Mankiw, Romer and Weil (1992) in using the secondary school gross

enrollment ratio as our proxy for human capital.[17]

In Table 7 we present the results of incorporating human capital in the regressions. Panel A shows

the results of OLS estimation. The introduction of human capital leads to all the institutional

variables but one becoming statistically insignificant at the 5% level. Not surprisingly at this point,

the exception is the civil liberties subcategory (G), Personal Autonomy and Individual Rights. It

also has the highest R^2. The human capital variable is highly correlated with the level of per capita

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[17] We use the 1995 gross secondary school enrollment rate drawn from the World Bank's World Development Indicators. The measure is defined as the number of total pupils enrolled in secondary school, regardless of age, expressed as a percentage of the total population in the theoretical age group for secondary education (World Bank EdStats Database).

income. It explains 78% of the variation by itself. Nevertheless, the most striking result is its lack of statistical significance at any reasonable level when we correct for reverse causation by using 2SLS with the same instruments as in earlier regressions (panel B).[18] The only variable statistically significant at the 5 % level when both institutions and human capital are included in the 2SLS regressions is the Personal Autonomy and Individual Rights subcategory.

[Table 7 goes here]

Use of human capital raises additional issues with respect to endogeneity. We have two endogenous variables, legal formalism and property rights institutions, and two instruments, a dummy for British legal origin and the log of population density in 1500. These instruments were fine for our earlier purposes because the log of population density was a very good instrument for the property rights variables used earlier and British legal origin was a very good instrument for legal formalism. For instance, in the first stage regressions reported in Panel A of Table A5 in the Appendix, British legal origin is the only statistically significant variable at the 0.1 % level and explains over 50% of the variation in legal formalism when the log of population density is included. Similarly, the log of population density in 1500 is the only statistically significant variable when explaining our preferred institutional variable and it explains over 30% of the variation when British legal origin is included. This neat separation is not the case when using British legal origin as an instrument for the secondary school enrollment rate. For example, it can also be seen in the same table that the log of population density in 1500 is a good instrument for both the institutional variable and the human capital variable and British legal origin is not as good an instrument for the schooling variable as it

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[18] Since legal formalism has no effect on any of our earlier results, we drop it from the regression and use British legal origin as an instrument for the human capital variable. An argument for this use of the British legal origin dummy is that the well known British inclination toward measurement, for example British colonies usually had better statistics than the colonies of other European powers, would have also resulted in the provision of higher levels of education.

was for legal formalism.

In the empirical growth literature, ethnic fractionalization has been identified as an instrument for human capital, for example Durlauf, Johnson and Temple (2005). The rationale is that the higher the level of ethnic fractionalization in a society, the lower is the level of human capital, since education is normally publicly provided and any groups controlling the state would be disinclined to empower other groups through education. We adopt the measure of ethnic fractionalization employed by Alesina, Develeeschauwer, Easterly, Kurlat and Wacziarg (2003).[19] It can be seen from Panel B of Table A5 that this measure is a better instrument for secondary school enrollment than British legal origin in terms of both statistical significance and explanatory power.

[Table 8 goes here]

To conclude our discussion, we present in Table 8 the results of explaining the level of GDP per capita in terms of human capital, institutions, and geography. Panel A shows the results of OLS estimation. We add the malaria ecology variable to the ones in Table 7 in order to capture the role of geography, since it had turned out to be the only statistically significant geography measure in the results reported in Table 6. It has no effect on growth once human capital and institutions are included. Just as in Table 7, both human capital and institutions matter in explaining growth in this setting, although the effect of institutions is only captured when using the Personal Autonomy and Individual Rights subcategory. Panel B presents the results of 2SLS estimation using all three instruments in the first stage.[20] When our preferred measure of property rights is used, only the

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[19] The ethnic fractionalization variable is computed as one minus the Herfindahl index of ethnolinguistic group shares in each country and reflects the probability that two randomly selected individuals from a population belong to different groups.
[20] We performed over-identification tests on the instruments and the hypothesis that they had a direct effect in the regression was rejected in every case.

institutional variable is statistically significant at the 5% level, although human capital is statistically significant at the 10% level. While initially surprising, this result may also reflect the effect of institutions—particularly second generation human rights—on the level of human capital.

Concluding Remarks

Our results are remarkably robust. Civil liberties matter in determining the level of long-term economic growth as indicators of the prevalence of the rule of law in general and of property rights institutions in particular. They also have a powerful effect in determining the level of operations in socially contrived markets. The civil liberties that matter most in these settings are those associated with second generation human rights. One needs to note in this context, however, that it is difficult to believe that one can maintain high levels of second generation rights without having some minimal levels of first generation rights. Conceptually, for instance, one of the mechanisms for securing these rights (an impartial judiciary) is the same in both cases. Empirically, the lowest correlation in our sample among the four civil liberties subcategories is 75%. More generally, we view our results as an unusually strong and auspicious step in the process of unbundling of institutions and in understanding their role in the economy.

There remains substantial scope for exploring in greater detail the role of institutions in different socially contrived markets. For instance, considering the arguments about the causal impact of financial development on economic growth (for example, Levine (2005)), further research may fruitfully focus on more narrowly defined financial markets, such as stock, credit, and insurance markets, as especially relevant socially contrived markets. In particular, one might assess the degree to which greater civil liberties may both deepen financial development and expand access to finance.

Further investigation could also examine the extent to which the prevalence of civil liberties shapes substitution patterns across alternative financial mechanisms, i.e. whether foreign investment is pursued through stock markets, debt markets, or direct investment. These patterns may have implications for the operating efficiency of financial markets, knowledge spillovers and other channels of economic growth.

Our empirical results on the Personal Autonomy and Individual Rights (G) subcategory capture important aspects of economic and social freedoms experienced by individuals, including protections from both state control and social norms. Thus, further research may want to explore linkages between the prevalence of this aspect of the rule of law and the nature of interactions among a society's institutions, the agents making up the society and the resulting collective outcomes. Perhaps more importantly, our results open up the issue of to what extent are other civil liberties or political rights necessary for the existence of high levels of second generation rights that seem to best explain high levels of economic development. This is a question that has been avoided in the literature to a large extent. Our results indicate that it needs to be confronted even if the answer is unlikely to be a simple, straightforward one. Without addressing this issue, the analysis of institutions will remain woefully incomplete by its failure to enhance our understanding of the most dramatic economic growth experiences since World War II, namely the East Asian economies.

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Table 1: Freedom House Civil Liberties Categories

FH Civil Liberties Category	Sub-Issues
D. Freedom of Expression and Belief	1. Are there free and independent media and other forms of cultural expression?
	2. Are religious institutions and communities free to practice their faith and express themselves in public and private?
	3. Is there academic freedom and is the educational system free of extensive political indoctrination?
	4. Is there open and free private discussion?
E. Associational and Organizational Rights	1. Is there freedom of assembly, demonstration, and open public discussion?
	2. Is there freedom for nongovernmental organizations?
	3. Are there free trade unions and peasant organizations or equivalents, and is there effective collective bargaining?
F. Rule of Law	1. Is there an independent judiciary?
	2. Does the rule of law prevail in civil and criminal matters? Are police under direct civilian control?
	3. Is there protection from political terror, unjustified imprisonment, exile, or torture, whether by groups that support or oppose the system? Is there freedom from war and insurgencies?
	4. Do laws, policies, and practices guarantee equal treatment of various segments of the population?
G. Personal Autonomy and Individual Rights	1. Does the state control travel or choice of residence, employment, or institution of higher education?
	2. Do citizens have the right to own property and establish private businesses? Is private business activity unduly influenced by government officials, the security forces, political parties/organizations, or organized crime?
	3. Are there personal social freedoms, including gender equality, choice of marriage partners, and size of family?
	4. Is there equality of opportunity and the absence of economic exploitation?

Table 2: Correlation among institutional variables for 60 ex-colonies

	Const. on Exec.	CIM	Agg. Civil Lib. Index	Free.of Exp. & Belief (D)	Assoc. & Organ.. Rights (E)	Rule of Law (F)	Person. Auto. & Indiv. Rights (G)	Elect. Process (A)	Politi. Plural. & Part. (B)	Funct. Of Gov. (C)	Second. School Enroll.
Constraints on the Executive	1										
CIM	0.113	1									
Aggregate Civil Liberties Index	0.6651	0.2015	1								
Freedom of Expression & Belief (D)	0.6145	0.2262	0.8958	1							
Associational and Organiz. Rights (E)	0.6647	0.2251	0.9094	0.9316	1						
Rule of Law (F)	0.615	0.2013	0.9153	0.784	0.7929	1					
Personal Autonomy & Individual Rights (G)	0.6864	0.2663	0.8895	0.7471	0.7598	0.8353	1				
Electoral Process (A)	0.6159	0.1988	0.8507	0.8723	0.8832	0.7407	0.7364	1			
Political Pluralism & Participation (B)	0.6709	0.1529	0.8857	0.91	0.9235	0.7911	0.7736	0.8867	1		
Functioning of Government (C)	0.5891	0.1924	0.898	0.8137	0.8262	0.905	0.8275	0.8183	0.8378	1	
Secondary School Enrollment	0.4958	0.3041	0.4407	0.3221	0.3469	0.4275	0.6413	0.2999	0.331	0.4213	1

Table 3 A: OLS, dependent variable is log GDP per capita in 1995

	Constraints on Executive	CIM	Aggregate Civil Liberties Index	Freedom of Expression & Belief (D)	Association & Organiz. Rights (E)	Rule of Law (F)	Personal Autonomy & Individual Rights (G)
Legal Formalism	-0.13 (0.1008)	-0.0544 (0.1134)	-0.1115 (0.1029)	-0.1632 (0.1068)	-0.1421 (0.1079)	-0.0619 (0.109)	-0.049 (0.0867)
Property Rights (column heading)	0.2934*** (0.067)	2.0405** (0.728)	0.3568*** (0.0882)	0.1154** (0.0348)	0.1305** (0.0424)	0.1201*** (0.0359)	0.2384*** (0.0343)
Constant	7.103** (0.53)	6.538** (0.84)	9.564** (0.49)	7.256** (0.58)	7.488** (0.56)	7.268** (0.58)	5.957** (0.51)
Observations	60	60	60	60	60	60	60
R- Squared	0.27	0.1429	0.2424	0.1829	0.1637	0.1847	0.4717

The Freedom House Civil Liberties measure has been reversed around zero so that a higher score corresponds to better civil liberties. Standard errors in parentheses, * significant at 5%, ** significant at 1%, *** significant at 0.1%

Table 3 B: 2SLS, dependent variable is log GDP per capita in 1995

	Constraints on Executive	CIM	Aggregate Civil Liberties Index	Freedom of Expression & Belief (D)	Association & Organiz. Rights (E)	Rule of Law (F)	Personal Autonomy & Individual Rights (G)
Legal Formalism	-0.0019 (0.211)	0.18 (0.3391)	-0.0742 (0.1656)	-0.1496 (0.1776)	-0.0443 (0.2043)	0.0782 (0.1843)	-0.0841 (0.13)
Property Rights (column heading)	0.8776** (0.2726)	11.980* (5.4633)	0.8047*** (0.2001)	0.3138*** (0.0844)	0.4444** (0.1354)	0.3123*** (0.0819)	0.3733*** (0.073)
Constant	3.8049* (1.7101)	-2.5314 (5.2327)	10.837*** (0.856)	4.8282*** (1.2466)	4.5424** (1.4844)	5.1622*** (1.1451)	4.8303*** (0.9061)
Observations	60	60	60	60	60	60	60
R- Squared	-	-	-	-	-	-	-

The instruments used in all specifications are the log of population density in 1500 and a dummy for British legal origin. The Freedom House Civil Liberties measure has been reversed around zero so that a higher score corresponds to better civil liberties. Standard errors in parentheses, * significant at 5%, ** significant at 1%, *** significant at 0.1%

Table 4 A: OLS, dependent variable is Investment/GDP averaged over 1990's

	Constraints on Executive	*CIM*	*Aggregate Civil Liberties Index*	*Freedom of Expression & Belief (D)*	*Association & Organizat. Rights (E)*	*Rule of Law (F)*	*Personal Autonomy & Individual Rights (G)*
Legal Formalism	-0.9372	-0.8611	-0.8108	-1.0597	-0.9768	-0.7061	-0.5424
	(0.7627)	(0.7605)	(0.8145)	(0.7691)	(0.7798)	(0.79)	(0.703)
Property Rights (column heading)	0.9988	3.8351	1.3794*	0.4393	0.3361	0.4077	1.123***
	(0.5073)	(5.2292)	(0.6518)	(0.2502)	(0.3067)	(0.2602)	(0.2783)
Constant	12.0098**	13.1505*	20.861***	12.0124**	14.2011***	12.5834**	4.727
	(3.9885)	(6.0611)	(3.6103)	(4.199)	(4.0377)	(4.1934)	(4.1439)
Observations	60	60	60	60	60	60	60
R- Squared	0.088	0.0351	0.0969	0.076	0.0461	0.0662	0.2425

The Freedom House Civil Liberties measure has been reversed around zero so that a higher score corresponds to better civil liberties. Standard errors in parentheses, * significant at 5%, ** significant at 1%, *** significant at 0.1%

Table 4 B: 2SLS, dependent variable is Investment/GDP averaged over 1990's

	Constraints on Executive	*CIM*	*Aggregate Civil Liberties Index*	*Freedom of Expression & Belief (D)*	*Association & Organizat. Rights (E)*	*Rule of Law (F)*	*Personal Autonomy & Individual Rights (G)*
Legal Formalism	-1.337	-0.4588	-1.6856	-2.0499	-1.5415	-0.9502	-1.7336
	(1.3658)	(2.021)	(1.1536)	(1.1794)	(1.3366)	(1.2611)	(1.0086)
Property Rights (column heading)	4.2354*	57.8129	3.8836**	1.5145**	2.1446*	1.5073**	1.8017**
	(1.7648)	(32.5631)	(1.3943)	(0.5607)	(0.8859)	(0.5607)	(0.5666)
Constant	-1.9178	-32.4967	32.017***	3.0206	1.6413	4.6326	3.0309
	(11.0714)	(31.1888)	(5.9645)	(8.2806)	(9.7126)	(7.8349)	(7.0307)
Observations	60	60	60	60	60	60	60
R- Squared	-	-	-	-	-	-	-

The instruments used in all specifications are the log of population density in 1500 and a dummy for British legal origin. The Freedom House Civil Liberties measure has been reversed around zero so that a higher score corresponds to better civil liberties. Standard errors in parentheses, * significant at 5%, ** significant at 1%, *** significant at 0.1%

Table 5 A, Political Rights: Dependent variable is log GDP per capita in 1995

	Aggregate Political Rights Index	Aggregate Political Rights Index	Electoral Process (A)	Electoral Process (A)	Political Pluralism & Participat. (B)	Political Pluralism & Participat. (B)	Function. Of Govern. (C)	Function. Of Govern. (C)
Specification	*2SLS*	*OLS*	*2SLS*	*OLS*	*2SLS*	*OLS*	*2SLS*	*OLS*
Legal Formalism	-0.1357 (0.1907)	-0.1346 (0.1071)	-0.2576 (0.1897)	-0.1792 (0.1069)	*-0.1274 (0.2069)*	*-0.1468 (0.1094)*	*0.0566 (0.1935)*	-0.0692 (0.1077)
Political Rights (column heading)	0.6954** (0.2008)	0.225** (0.0696)	0.3366*** (0.0957)	0.1138** (0.0335)	*0.3183** (0.0996)*	*0.0845** (0.0306)*	*0.4082*** (0.1136)*	0.1442*** (0.0414)
Constant	5.2491*** (1.2403)	7.4632*** (0.5505)	6.3245*** (0.9987)	7.7931*** (0.4869)	*5.2078*** (1.3548)*	*7.6993*** (0.5411)*	*5.1237*** (1.2229)*	7.3318*** (0.5546)
Observations	60	60	60	60	60	60	60	60
R-squared	-	0.1758	-	0.1886	-	*0.1402*	-	0.1960

The instruments used in the 2SLS specifications are the log of population density in 1500 and a dummy for British legal origin. The Freedom House Political Rights measure has been reversed around zero so that a higher score corresponds to better rights. Standard errors in parentheses, * significant at 5%, ** significant at 1%, *** significant at 0.1%

Table 5 B, Political Rights: Dependent variable is Investment/GDP averaged over 1990's

	Aggregate Political Rights Index	Aggregate Political Rights Index	Electoral Process (A)	Electoral Process (A)	Political Pluralism & Participat. (B)	Political Pluralism & Participat. (B)	Function. Of Govern. (C)	Function. Of Govern. (C)
Specification	*2SLS*	*OLS*	*2SLS*	*OLS*	*2SLS*	*OLS*	*2SLS*	*OLS*
Legal Formalism	-1.9827 (1.2632)	-0.9537 (0.7739)	-2.571 (1.288)	-1.0804 (0.7813)	-1.9426 (1.2799)	-0.9988 (0.7715)	-1.0548 (1.2755)	-0.6972 (0.7791)
Political Rights (column heading)	3.3561* (1.33)	0.7311 (0.5032)	1.6245* (0.6502)	0.316 (0.2452)	1.536* (0.6164)	0.3404 (0.2156)	1.9699* (0.7488)	0.5579 (0.2994)
Constant	5.0522 (8.215)	13.4067** (3.9787)	10.2419 (6.7824)	14.8335*** (3.5602)	4.8524 (8.3821)	13.5135*** (3.8165)	4.4466 (8.0622)	12.2251** (4.0125)
Observations	60	60	60	60	60	60	60	60
R-squared	-	0.0608		0.0536		0.0668	-	0.0819

The instruments used in the 2SLS specifications are the log of population density in 1500 and a dummy for British legal origin. The Freedom House Political Rights measure has been reversed around zero so that a higher score corresponds to better rights. Standard errors in parentheses, * significant at 5%, ** significant at 1%, *** significant at 0.1%

Table 6, Geography: Dependent variable is log GDP per capita 1995

	Constraints on Executive	Constraints on Executive	Aggregate Civil Liberties Index	Aggregate Civil Liberties Index	Personal Autonomy & Individual Rights (G)	Personal Autonomy & Individual Rights (G)
Specification	*2SLS*	*OLS*	*2SLS*	*OLS*	*2SLS*	*OLS*
Legal Formalism	-0.0439	-0.0953	-0.0472	-0.0873	-0.0545	-0.054
	(0.2162)	(0.0869)	(0.144)	(0.0824)	(0.1239)	(0.0769)
Property Rights (column heading)	0.9204*	0.1398*	0.7221***	0.217**	0.3586***	0.1464***
	(0.3583)	(0.0664)	(0.1874)	(0.0672)	(0.0802)	(0.0339)
Malaria Ecology Index	0.0337	-0.0375*	-0.053**	-0.0512**	-0.0338*	-0.0423**
	(0.0422)	(0.0153)	(0.0177)	(0.0133)	(0.0157)	(0.0125)
Landlocked Dummy	-0.4879	-0.642*	-0.1216	-0.4821	0.2603	-0.2373
	(0.479)	(0.2511)	(0.3462)	(0.2441)	(0.3422)	(0.2393)
Latitude, Absolute Value	0.0418	2.0406*	0.5578	1.7658*	-0.1833	1.2337
	(1.8315)	(0.8527)	(1.1605)	(0.8135)	(1.0776)	(0.7758)
Constant	3.69	7.6343***	10.6572***	9.142***	5.0041***	6.6627***
	(2.0921)	(0.5322)	(0.8864)	(0.4796)	(0.9539)	(0.5156)
Observations	60	60	60	60	60	60
R-squared	-	0.5005		0.5519	-	0.6141

The instruments used in the 2SLS specifications are the log of population density in 1500 and a dummy for British legal origin The Freedom House Political Rights measure has been reversed around zero so that a higher score corresponds to better rights.   Standard errors in parentheses, * significant at 5%, ** significant at 1%, *** significant at 0.1%

Table 7 A, Human Capital: OLS, dependent variable is log GDP per capita 1995

	Without Institutions	*Cons. on Executive*	*CIM*	*Aggregate Civil Liberties Index*	*Freedom of Expression & Belief (D)*	*Association & Organiz. Rights (E)*	*Rule of Law (F)*	*Personal Autonomy & Individual Rights (G)*
Secondary School Enrollment, 1995	0.0345***	0.033***	0.03***	0.033***	0.0331***	0.0335***	0.0336***	0.0295***
	(0.0023)	(0.0028)	(0.0025)	(0.0026)	(0.0025)	(0.0025)	(0.0027)	(0.003)
Property Rights (column heading)		0.0474	0.6583	0.0819	0.0329	0.0259	0.0166	0.0704*
		(0.0417)	(0.3608)	(0.0515)	(0.0184)	(0.0228)	(0.0199)	(0.0268)
Constant	6.3632***	6.210***	5.89***	6.710***	6.0375***	6.1992***	6.2733***	5.9407***
	(0.129)	(0.187)	(0.2898)	(0.2527)	(0.2225)	(0.1941)	(0.1689)	(0.203)
Observations	60	60	60	60	60	60	60	60
R- Squared	0.7819	0.7867	0.7939	0.7912	0.7934	0.7867	0.7845	0.8054

The Freedom House Civil Liberties measure has been reversed around zero so that a higher score corresponds to better civil liberties. Standard errors in parentheses, * significant at 5%, ** significant at 1%, *** significant at 0.1%

Table 7 B, Human Capital: 2SLS, dependent variable is log GDP per capita 1995

	Without Institutions	*Cons. on Executive*	*CIM*	*Aggregate Civil Liberties Index*	*Freedom of Expression & Belief (D)*	*Association & Organiz. Rights (E)*	*Rule of Law (F)*	*Personal Autonomy & Individual Rights (G)*
Secondary School Enrollment, 1995	0.0467***	0.0004	-0.1395	0.0128	0.021	0.0084	-0.0253	0.0141
	(0.0063)	(0.0464)	(0.9819)	(0.022)	(0.0157)	(0.0329)	(0.0897)	(0.0168)
Property Rights (column heading)		0.871	41.59	0.6223	0.1972	0.3781	0.4522	0.2802*
		(0.8282)	(218.60)	(0.3671)	(0.103)	(0.3014)	(0.5509)	(0.13)
Constant	5.788***	3.8089	-19.507	9.363***	4.6457***	4.5118***	5.5317***	4.7073***
	(0.307)	(2.0147)	(133.03)	(2.1556)	(0.7161)	(1.1828)	(0.9731)	(0.6124)
Observations	60	60	60	60	60	60	60	60

The instruments used in all specifications are the log of population density in 1500 and a dummy for British legal origin. The Freedom House Civil Liberties measure has been reversed around zero so that a higher score corresponds to better civil liberties. Standard errors in parentheses, * significant at 5%, ** significant at 1%, *** significant at 0.1%

Table 8 A Human Capital & Geography: OLS, dependent variable is log GDP per capita

	Without Institutions	*Cons. on Executive*	*CIM*	*Aggregate Civil Liberties Index*	*Freedom of Expression & Belief (D)*	*Association & Organiz. Rights (E)*	*Rule of Law (F)*	*Personal Autonomy & Individual Rights (G)*
Secondary School Enrollment, 1995	0.033***	0.032***	0.032***	0.03***	0.031***	0.032***	0.031***	0.028***
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Property Rights (column heading)		0.039	0.627	0.093	0.035	0.028	0.022	0.072**
		(0.04)	(0.36)	(0.05)	(0.02)	(0.02)	(0.02)	(0.03)
Malaria Ecology	-0.009	-0.007	-0.007	-0.012	-0.011	-0.01	-0.012	-0.011
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Constant	6.484***	6.322***	6.007***	6.92***	6.161***	6.32***	6.397***	6.07***
	(0.18)	(0.26)	(0.33)	(0.3)	(0.25)	(0.23)	(0.2)	(0.23)
R-squared	0.785	0.788	0.796	0.797	0.798	0.791	0.79	0.81

The Freedom House Civil Liberties measure has been reversed around zero so that a higher score corresponds to better civil liberties. Standard errors in parentheses, * significant at 5%, ** significant at 1%, *** significant at 0.1%.

Table 8 B, Human Capital & Geography: 2SLS, dependent variable is log GDP per capita

	Without Institutions	*Cons. on Executive*	*CIM*	*Aggregate Civil Liberties Index*	*Freedom of Express. & Belief (D)*	*Assoc. & Organiz. Rights (E)*	*Rule of Law (F)*	*Personal Autonomy & Individual Rights (G)*
Secondary School Enrollment, 1995	0.047***	0.035**	-0.085	0.031**	0.038***	0.039***	0.03*	0.021
	(0.01)	(0.01)	(0.59)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Property Rights (column heading)		0.32	27.113	0.343	0.095	0.112	0.119	0.237*
		(0.23)	(121.34)	(0.18)	(0.05)	(0.08)	(0.09)	(0.11)
Malaria Ecology	0.018	0.03	-0.071	-0.006	0.005	0.008	-0.012	-0.003
	(0.02)	(0.02)	(0.42)	(0.02)	(0.02)	(0.02)	(0.03)	(0.02)
Constant	5.668***	4.639***	-9.874	7.649***	5.032***	5.186***	5.683***	4.784***
	(0.37)	(0.86)	(69.63)	(1.11)	(0.5)	(0.51)	(0.38)	(0.56)

The instruments used in all specifications are the log of population density in 1500, ethnic fractionalization, and a British legal dummy. The Freedom House Civil Liberties measure has been reversed around zero so that a higher score corresponds to better civil liberties. Standard errors in parentheses, * significant at 5%, ** significant at 1%, *** significant at 0.1%.

Appendix

Table A1: Summary Statistics for Sample of 60 Former Colonies

Variable	Mean	Std. Dev.	Min	Max
Log of GDP Per Capita, 1995	7.998	1.034	6.162	10.250
Investment/GDP, Ave. over 1990's	13.123	7.001	2.898	42.182
Legal Formalism	3.913	1.161	1.579	6.009
Constraints on the Executive	4.786	1.746	1.18	7
CIM	0.820	0.181	0	0.995
Aggregate Civil Liberties Index	3.167	1.355	1	6
Freedom of Expression & Belief (D)	11.967	3.570	3	16
Associational & Organizational Rights (E)	8.167	2.953	2	12
Rule of Law (F)	8.1	3.526	1	15
Personal Autonomy & Individual Rights (G)	9.367	2.934	1	16
Electoral Process (A)	7.967	3.701	0	12
Political Pluralism & Participation (B)	10.333	4.157	1	16
Functioning of Government (C)	6.5	3.023	0	12
Malaria Ecology	5.102	7.802	0	31.548
Landlocked Dummy	0.217	0.415	0	1
Latitude, Absolute Value	0.195	0.127	0.011	0.667
Secondary School Enrolment	47.338	26.474	5.44	100

Table A2: Using Estimated Personal Autonomy & Individual Rights (G) in 1995

Dependent Variable	Log GDP pc, 1995	Log GDP pc, 1995	Investment/GDP, 1990s	Investment/GDP, 1990s
Specification	*2SLS*	*OLS*	*2SLS*	*OLS*
Legal Formalism	0.0189	-0.0292	-1.2364	-0.5074
	(0.1324)	(0.0883)	(1.0643)	(0.7305)
Personal Autonomy & Individual Rights (G) (1995)	0.3278***	0.2135***	1.582**	0.8936**
	(0.0634)	(0.0316)	(0.5098)	(0.2613)
Constant	5.309***	6.4091***	5.3409	7.9799*
	(0.8218)	(0.4747)	(6.6064)	(3.9265)
Observations	60	60	60	60
R-squared	-	0.4585	-	0.1918

The instruments used in the 2SLS specifications are the log of population density in 1500 and a dummy for British legal origin. Standard errors in parentheses, * significant at 5%, ** significant at 1%, *** significant at 0.1%

Table A3 A, all OECD: OLS, dependent variable is log GDP per capita 1995

	Constraints. on Executive	CIM	Aggregate Civil Liberties Index	Freedom of Expression & Belief (D)	Association & Organization Rights (E)	Rule of Law (F)	Personal Autonomy & Individual Rights (G)
Legal Formalism	-0.1962*	-0.2981*	-0.1742	-0.2723*	-0.2354	-0.0786	-0.074
	(0.0926)	(0.1158)	(0.0993)	(0.1001)	(0.0991)	(0.0951)	(0.0729)
Property Rights (column heading)	0.437***	-1.018**	0.442***	0.1907***	0.2265***	0.193***	0.2782***
	(0.0562)	(0.3617)	(0.0792)	(0.0311)	(0.0353)	(0.0245)	(0.0223)
Constant	6.885***	10.33***	10.17***	7.050***	7.310***	6.897***	5.764***
	(0.5014)	(0.5216)	(0.4281)	(0.5713)	(0.5265)	(0.4949)	(0.4138)
Observations	83	83	83	83	83	83	83
R- Squared	0.4689	0.1528	0.365	0.3671	0.3847	0.476	0.6841

The Freedom House Civil Liberties measure has been reversed around zero so that a higher score corresponds to better civil liberties. Standard errors in parentheses, * significant at 5%, ** significant at 1%, *** significant at 0.1%

Table A3 B, all OECD: OLS, dependent variable is Investment/GDP, averaged over 1990's

	Constraints. on Executive	CIM	Aggregate Civil Liberties Index	Freedom of Expression & Belief (D)	Association & Organization Rights (E)	Rule of Law (F)	Personal Autonomy & Individual Rights (G)
Legal Formalism	-1.3235	-1.783*	-1.3615	-1.663*	-1.5098*	-0.7389	-0.6809
	(0.7175)	(0.7683)	(0.7895)	(0.7318)	(0.7379)	(0.729)	(0.65)
Property Rights (column heading)	1.956***	-5.71***	2.05**	0.866***	0.975***	0.916***	1.366***
	(0.436)	(2.4005)	(0.6302)	(0.227)	(0.2632)	(0.1877)	(0.1988)
Constant	10.438**	26.69***	25.85***	11.026**	12.753**	9.7751*	3.7746
	(3.8865)	(3.4609)	(3.4054)	(4.1746)	(3.9194)	(3.7925)	(3.6896)
Observations	83	83	83	83	83	83	83
R- Squared	0.2476	0.1205	0.1908	0.2032	0.196	0.2744	0.4077

The Freedom House Civil Liberties measure has been reversed around zero so that a higher score corresponds to better civil liberties. Standard errors in parentheses, * significant at 5%, ** significant at 1%, *** significant at 0.1%

Table A4 A, Settler Mortality: 2SLS, dependent variable is log GDP per capita in 1995

	Constraints on Executive	CIM	Aggregate Civil Liberties Index	Freedom of Expression & Belief (D)	Association. & Organization Rights (E)	Rule of Law (F)	Personal Autonomy & Individual Rights (G)
Legal Formalism	0.0545 (0.2422)	0.2748 (0.2949)	0.5143 (0.8892)	0.2837 (1.0874)	0.7506 (1.4527)	0.9243 (1.0843)	0.1953 (0.185)
Property Rights (column heading)	0.992** (0.2923)	11.0125** (3.4819)	3.3453 (2.7255)	1.7133 (1.9863)	2.0529 (2.3429)	1.212 (0.9277)	0.5687*** (0.1185)
Constant	3.0548 (2.0124)	-2.1057 (3.6916)	16.2111* (6.2582)	-13.9752 (27.0579)	-12.0768 (24.4894)	-5.6269 (11.5592)	1.7393 (1.6725)
Observations	51	51	51	51	51	51	51

The instruments used are the log of settler mortality and a dummy for British legal origin. The Freedom House Civil Liberties measure has been reversed around zero so that a higher score corresponds to better civil liberties. Standard errors in parentheses, * significant at 5%, ** significant at 1%, *** significant at 0.1%

Table A4 B, Settler M: 2SLS, dependent variable is Investment/GDP (averaged over 1990s)

	Constraints on Executive	CIM	Aggregate Civil Liberties Index	Freedom of Expression & Belief (D)	Association. & Organization Rights (E)	Rule of Law (F)	Personal Autonomy & Individual Rights (G)
Legal Formalism	-0.8015 (1.5456)	0.2412 (1.803)	1.3753 (4.3473)	0.2837 (5.2136)	2.4938 (7.0644)	3.3161 (5.4185)	-0.135 (1.205)
Property Rights (column heading)	4.696* (1.8651)	52.1333* (21.2898)	15.8366 (13.3255)	8.1109 (9.5233)	9.7186 (11.3933)	5.7378 (4.6356)	2.6921** (0.7717)
Constant	-6.3718 (12.8413)	-30.8018 (22.5722)	55.9103 (30.5978)	-86.9923 (129.729)	-78.0051 (119.0912)	-47.4711 (57.7619)	-12.5993 (10.8937)
Observations	51	51	51	51	51	51	51

The instruments used are the log of settler mortality and a dummy for British legal origin. The Freedom House Civil Liberties measure has been reversed around zero so that a higher score corresponds to better civil liberties. Standard errors in parentheses, * significant at 5%, ** significant at 1%, *** significant at 0.1%

Table A5 A, First Stages (Dependent variable in column heading)

	Legal Formalism	*Constraints on Exec.*	*Agg. Civil Liberties Index*	*Personal Autonomy & Indiv. Rights (G)*	*Electoral Process (A)*	*Political Pluralism & Partic. (B)*	*Function. Of Government (C)*	*Secondary School Enrollment*
Log of Pop Density, 1500	0.041	-0.398**	-0.43***	-0.927***	-1.01***	-1.08***	-0.862***	-6.375**
	(0.06)	(0.13)	(0.09)	(0.2)	(0.26)	(0.29)	(0.21)	(1.86)
British Legal Origin	-1.739***	0.054	-0.097	-0.255	-1.179	-0.536	0.366	8.698
	(0.2)	(0.43)	(0.31)	(0.67)	(0.88)	(1)	(0.71)	(6.32)
Constant	4.62***	4.97***	-2.95***	9.85***	8.87***	10.99***	6.67***	46.29***
	(0.14)	(0.29)	(0.2)	(0.44)	(0.58)	(0.66)	(0.47)	(4.19)
R-squared	0.568	0.151	0.286	0.282	0.22	0.191	0.244	0.209

Standard errors in parenthesis; * significant at 5%, ** significant at 1%, *** significant at 0.1%

Table A5 B, First Stages with Ethnic Fractionalization

	Legal Formalism	*Constraints on Exec.*	*Agg. Civil Liberties Index*	*Personal Autonomy & Indiv. Rights (G)*	*Electoral Process (A)*	*Political Pluralism & Partic. (B)*	*Function. Of Gov. (C)*	*Secondary School Enrollment*
Log of Pop Density, 1500	0.043	-0.383**	-0.427***	-0.89***	-1.011***	-1.095***	-0.869***	-5.759***
	(0.06)	(0.13)	(0.09)	(0.19)	(0.26)	(0.3)	(0.21)	(1.65)
Ethnic Fractionalization	-0.204	-1.18	-0.252	-2.852*	0.302	0.994	0.57	-47.38***
	(0.43)	(0.89)	(0.64)	(1.34)	(1.83)	(2.09)	(1.47)	(11.58)
British Legal Origin	-1.728***	0.119	-0.083	-0.1	-1.196	-0.59	0.335	11.278*
	(0.21)	(0.43)	(0.31)	(0.65)	(0.89)	(1.02)	(0.72)	(5.63)
Constant	4.722***	-0.383***	-0.427***	-0.89***	-1.011***	-1.095***	-0.869***	-5.759***
	(0.25)	(0.13)	(0.09)	(0.19)	(0.26)	(0.3)	(0.21)	(1.65)
R-squared	0.570	0.177	0.288	0.336	0.22	0.195	0.246	0.391

Standard errors in parenthesis; * significant at 5%, ** significant at 1%, *** significant at 0.1%