Cultural Context:
The Productivity of Capitalism

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Abstract

Does capitalism perform better when embedded in certain cultures? Given the wide range of economic success and failure, we address potential causes for the effectiveness or ineffectiveness of institutional constraints. This paper argues that culture matters for the success of capitalist institutions, specifically economic freedom. We claim that different cultures may raise or lower the productivity of economic institutions by either constraining or supporting these rules. We analyze this relationship empirically by examining how the interaction between economic freedom and culture affects economic growth. Our results suggest that culture does, indeed, enhance the effectiveness of capitalism and its subsequent impact on growth.

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I. Introduction

Though it is shown that culture, an informal institution, demonstrates a strong association with economic performance (Guiso et al. 2006; Licht et al. 2007; Tabellini 2008, 2009; C. Williamson and Mathers 2009), what exactly is the role that it plays? In other words, what is the mechanism or process through which culture impacts economic outcomes? Scholars as early as Montesquieu, Weber, and Hume acknowledged that cultural norms can influence economic performance. Some more recent studies find that culture or, more broadly, informal institutions matter because the formal rules must coexist with existing informal institutions (see Boettke and Coyne 2009; C. Williamson 2009). Given the lengthy time period generally required for significant changes in the culture and norms of a society (O. Williamson 2000), formal institutions are likely to be short-lived if they conflict with cultural norms.   Further, empirical studies of culture, and informal institutions, have demonstrated their importance[1], with explanations including, for example, culture's impact on transaction costs of transition to new formal rules (Pejovich 2003). We hypothesize that culture matters, and the mechanism for its importance is enhancing capitalism.

Economic institutions, such as private property, rule of law, and contract enforcement are critical for economic growth and development. Despite a considerable amount of literature devoted to this topic, understanding *how* these institutional constraints determine development remains a mystery. Given the wide range of success and failure with transplanting institutions, it is important to address potential causal factors underlying the effectiveness or ineffectiveness of institutional constraints. Our paper attempts to understand the success of economic institutions, specifically economic freedom, by incorporating the role of culture. In other words, we

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[1] See, for example, Acemoglu et al. 2001, 2002; Easterly 2001; Rodrik et al. 2004; Acemoglu and Johnson 2005; Mehlum et al. 2006; Tabellini 2009.

investigate the role of culture in supporting capitalism. Without capitalism, an economic system of private resource ownership, individuals will necessarily have fewer economic freedoms, as they will lack resource ownership necessary to pursue economic entrepreneurship and profits. Due to the importance of capitalism in ensuring economic freedom, we can use this measure in our interaction term to estimate culture's role in enhancing capitalism.

This paper examines how the interaction between culture and economic freedom affects economic prosperity, an empirical study that has, thus far, been absent from the economic growth literature. Our contribution lies at an intersection between the economic growth-economic freedom literature and the literature examining how culture matters for economic performance. More generally, the analysis can be viewed as an important contribution to the literature attempting to understand how institutions matter for economic development. The primary goal of the analysis is to understand how culture affects economic freedom's, and, by extension, capitalism's ability to influence economic growth. By incorporating culture into the analysis, we may partially explain why the 'same' economic institutions translate into different economic outcomes.

To empirically discover whether culture enhances the productivity of capitalism, we create a panel dataset spanning from 1970 to 2004, using five-year averages to minimize short-term business cycle fluctuations and measurement error. This yields seven time periods across 141 countries. Our dependent variable is the growth rate, and our main variable of interest is the interaction between economic freedom and culture. We view the interaction term as demonstrating culture's impact on the productivity of capitalism. To measure economic institutions, we rely on the widely used Economic Freedom of the World Index compiled by the Fraser Institute. For culture, we utilize a measure created from the World Values Surveys that

captures the level of trust, respect, self-determination, and obedience in order to generate an overall culture index (Tabellini 2008, 2009; C. Williamson and Kerekes 2009). To capture the relationship between culture and economic freedom, we create an interaction term by multiplying the culture index with the economic freedom index.

Our investigation employs fixed effects estimation with a variety of different control variables. In addition, we provide several sensitivity checks to our model, attempting to control for endogeneity by breaking countries into different subsets and testing for omitted variable bias. Overwhelming, we find that our measure of culture does, in fact, enhance the effectiveness of economic institutions. The interaction between the two exhibits a positive and highly significant relationship with economic growth. Our results also suggest that economic freedom independently, thus directly, contributes to economic prosperity, though its effectiveness is strongly enhanced by cultural values. In other words, the greatest growth is achieved through a match of formal-informal economic institutions associated with economic freedom, and success on only one of these fronts is not capable of producing comparable results.

This paper proceeds as follows. Section II describes the theoretical underpinnings of our analysis, offering insight into the link between culture and economic success via capitalism. In other words, this section provides potential explanations concerning the effect of culture and economic freedom on each other and on economic growth and development. Section III explains how the economic freedom and culture variables are measured. The control variables are also discussed in this section. Section IV applies empirical techniques to analyze the theory outlined in Section II. Section V tests the robustness of the results presented in Section IV. Lastly, Section VI offers conclusions and policy implications.

II. Theoretical Links

As defined by North (1990, 1991), institutions can be thought of as the "rules of the game," both formal and informal, which govern actions through incentives. Formal institutions are codified structures or written rules, whereas informal institutions are inclusive of cultures, norms, and conventions enforced by social custom (see Boettke and Coyne 2009). When development strategies incorporate reform of formal institutions, it is necessary to align the formal institutions with informal institutions in order for them to be self-enforcing or "stick." As Oliver Williamson (2000) notes, informal institutions take the longest to change. In other words, if a newly established formal institution runs counter to the culture and norms of the area, it is likely to have a short lifespan.[2]

Boettke, Coyne, and Leeson (2008) suggest that in order for formal institutions to 'stick' and, thus, promote economic growth and development, formal institutions must map onto the informal rules.[3] This implies that informal and formal institutions should complement one another in order to support economic growth. Citing the writings of Montesquieu, A. MacIntyre (1998: 178) notes, "The lawgiver must study the particular society for which he is legislating, because societies greatly differ." Following this logic, we claim that the success or failure of formal economic institutions depends on the preexisting informal rules, or culture. In other words, culture has the ability to raise or lower the productivity of economic freedom by acting as a filter through which the constraints must pass; thus, certain cultural attributes may complement economic freedom, or capitalism, and enhance its subsequent effect on growth.

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[2] Both Weber (1905) and North (2005) investigate the effect of informal institutions on economic outcomes. Additionally, North (1990, 2005) notes that past institutions, both formal and informal, contribute to institutional path dependency, where a country's past, in part, determines its present. These theoretical arguments are supported by recent empirical studies (Acemoglu et al. 2001, 2002; Easterly 2001; Rodrik et al. 2004; Acemoglu and Johnson 2005; Mehlum et al. 2006).

[3] The relationship between formal and informal institutions and economic development is empirically analyzed in C. Williamson (2009).

The hypothesis that the interaction between capitalism and culture will significantly affect growth is well supported by existing theory. In other words, there are certain cultural attributes which either encourage or discourage institutions associated with economic freedom. Knowing that there is large support in empirical growth models for the positive effect of economic freedom on growth,[4] it is logical to ask, "If we know that these institutions supporting economic freedom encourage economic development and growth, why can't we simply install these institutions in countries that are underdeveloped or suffer from negative or zero rates of economic growth?"

The answer to this question lies in Pejovich's (2003: 347) analysis of the transaction costs of transition: "It's the culture, stupid." As noted earlier, newly introduced formal institutions that support economic freedom do not stand a reasonable chance of surviving unless they align with the existing informal institutional structure.[5] As A. MacIntyre (1998: 155) notes, "contracts presuppose…the existence of social life and indeed of some fairly high degree of civilization. But some doctrine of social contract must underlie any claim to legitimacy." In other words, formal institutions must coordinate around the culture of a society if they are to be taken seriously, or, as Hume (Hendel, ed. 1953) put it, the "ancient fabric" of a society must be considered when making changes to an existing set of formal institutions. Powell and Rodet (2009) empirically show that social approval of economic freedom increases the rate of

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[4] For an analysis of economic freedom's effect on growth, see, for example, De Vanssay and Spindler 1994; Hanke and Walters 1997; Goldsmith 1997; Easton and Walker 1997; De Haan and Siermann 1998; Johnson and Lenartowicz 1998; Dawson 1998, 2003; Nelson and Singh 1998; Gwartney et al. 1999; De Haan and Sturm 2000; Heckelman and Stroup 2000; Sturm and De Haan 2001; Carlsson and Lundström 2002; Weede and Kämpf 2002; Knowles and Garces-Ozanne 2003; Bengoa and Sanches-Robles 2003; Gwartney et al. 2004; Heckleman and Knack 2004; Berggren and Jordahl 2005; Doucouliagos and Ulubasoglu 2006.

[5] For an analysis of the impact of culture on economic growth, see, for example, C. Williamson and Mathers 2009; Boettke and Coyne 2009; Boettke, Coyne, and Leeson 2008; Pejovich 2003; Fukuyama 1996; Knack and Keefer 1997; La Porta et al. 1997; Woolcock 1998; Zak and Knack 2001; Francois and Zabojnik 2005; Coyne and C. Williamson 2009.

entrepreneurship. Private property and the freedom to trade, while associated with greater rates of economic growth, cannot simply be transported to another country to ensure increasing levels of economic growth and development (Boettke, Coyne, and Leeson 2008). On the contrary, transporting these institutions to weak or failed states stands a chance of success only if the informal institutions (i.e. culture) align with the newly introduced formal institutions (i.e. private property rights, contract enforcement, etc.) (Coyne 2008).

At the heart of the impact of the interaction of culture and economic freedom on economic growth is the effect that this interaction has on the ability to create binding constraints in countries where these institutions are already present and in countries attempting to install new economic institutions. In countries where economic freedom is already present, culture may complement and enhance its productivity by making the constraints more credible.[6] For transition countries, the interaction may determine the transaction costs of installing and utilizing the formal institutions of economic freedom. Pejovich (2003: 348) aptly names these costs the "transaction costs of transition" and explains, "The results of transition…depend on the interaction of new formal and prevailing informal rules." Due to the impact of mismatched institutions on transactions costs, the same level of resources will not lead to the same result in all transition attempts.

This begs the question: "Which institutions, both formal and informal, are compatible with each other and economic growth?" One answer lies in Weber's (1905: 19) explication of the "spirit of capitalism," which he defines as the attitude (i.e. culture) that "strives systematically for profit for its own sake." Weber's thesis described the Protestant ethic, or culture, as one important determinant in the emergence of capitalism in northern Europe. This

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[6] This is similar to an argument by North (2005) where formal and informal institutions contribute to economic growth through a feedback process.

culture encouraged productive activities for economic gain in addition to planning and investment, an important ingredient for economic growth. Wastefulness was greatly frowned upon, as was laziness, and the result was a culture valuing hard work and investing the gains from labor in new enterprise. Through adherence to these ethical values and the accumulation of wealth for investment, individuals could prove their moral worth. Unbeknownst to them, these were the same principles which sowed the seeds of capitalism and economic growth.

Weber's analysis does not stand alone in historical attempts to understand the impact of the interaction between different institutions. For example, Montesquieu's *Spirit of the Laws* was, according to D.F. Pocock (1961: 9), "the first consistent attempt to survey the varieties of human society, to classify and compare them and, within society, to study the inter-functioning of institutions." Likewise, Tocqueville (1835) described a culture in America with attributes similar to some of those later associated with Weber's Protestant ethic. Namely, American culture valued hard work, productivity, and accumulation of wealth. Individualism was also greatly valued, and it was believed that every individual, through industriousness, could acquire luxury and wealth, thus achieving the "American Dream." Tocqueville contrasts the American ethic with the aristocratic ethic found in Europe, noting that the pursuit of financial gains was not the cultural norm in Europe, since those in lower classes could not attain the wealth of those in the upper classes; meanwhile, those in the upper classes also lacked this focus, as they were born into wealth and were above such pontifications. Thus, an aristocratic ethic does not provide fertile cultural attributes within which to sow the seeds of productive market capitalism. Likewise, McCloskey (2009) notes that it was ideas, not material things, that enabled the bourgeois countries to experience such rapid growth since 1800. In short, the links between culture, economic freedom, and growth are present in literature dating back hundreds of years;

however, the economic growth literature has yet to include an empirical study of the interaction between economic freedom and culture. The analysis herein aims to fill this gap in the literature.

Though the empirical impact of the interaction between culture and capitalism on economic growth is not analyzed in the literature, there are applied studies that examine the role of specific cultural measures on economic development and growth. For example, Grier (1997) investigates the impact of religion on economic development, finding that former Protestant colonies perform better than former Catholic colonies. Likewise, Barro and McCleary (2003) also examine the role of religion in economic development, including in their empirical work both the type of religion and a measure of religiosity or religious zeal. Both of these studies can be thought of as recent attempts to estimate the effects of cultural ethics discussed in the work of Weber and others.

In addition to analyzing the impact of religion on economic growth, some studies have investigated how informal institutions have enhanced or diminished growth (Guiso et al. 2006; Licht et al. 2007; Tabellini 2008, 2009). For example, Leeson (2007a,b) notes the important role informal institutions play in economic outcomes and progress; in some cases, as in Somalia, relying on informal institutions alone can provide better outcomes than those achieved with a government (i.e. formal institutions) that are corrupt. On a related note, C. Williamson (2009) offers an applied analysis of informal and formal institutions, the results of which reflect the importance of informal institutions for economic success. Previous empirical work measuring both the effects of economic freedom (or capitalism) and culture on economic growth conclude that once economic freedom is present, cultures impact on growth is greatly diminished (C. Williamson and Mathers 2009). One could interpret this finding as suggesting that culture is not important for economic performance; however, we view this result as suggesting that culture's

effect may be better understood by analyzing its ability to enhance economic freedom. In other words, our paper builds from this previous work to analyze how culture and capitalism may complement one another, whereas previous studies focused on their substitution effects. No empirical paper has yet examined the interaction between the two variables in order to understand the role of culture in explaining economic outcomes viz-a-vie the enhancement of capitalism. This paper fills this gap, honing in on the interaction between two variables, which may play a key role in development theory.

III. Data Summary

3.1 Economic Freedom

To measure economic freedom, we utilize the well cited and established Economic Freedom of the World Index compiled by the Fraser Institute (Gwartney et al. 2008). The index measures the level of economic freedom, utilizing 21 different components, on a scale from zero to ten, with ten representing a greater degree of freedom. These components can be grouped in seven broad categories: size of government, economic structure and use of markets, monetary policy and price stability, freedom to use alternative currencies, legal structure and security of private ownership, freedom to trade with foreigners, and freedom to exchange in capital markets. According to this index, economic freedom measures "the extent to which rightly acquired property is protected and individuals are free to engage in voluntary transactions" (De Haan and Sturm 2000: 3). Thus, any government interference in transactions decreases the economic freedom score for that country.

We recognize the availability of alternative institutional indices (such as Heritage Foundation's Index of Economic Freedom and ICRG's average protection against risk of

expropriation); however, due to the long time period and sample size of countries covered by the Fraser index, we find it to be the most suitable for our analysis.[7]

3.2 Culture

In order to define culture, we follow Guiso et al. (2006: 23) who define culture as "… those customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation." Starting from this general definition, we focus on several specific indicators of culture that are identified as being relevant for supporting the capitalist foundation of economic interaction and exchange. Narrowing the concept of culture allows us to explore how specific cultural traits interact with economic institutions and subsequently affect economic growth.

To measure culture we rely on a variable first identified by Tabellini (2008, 2009) and later expanded on by C.Williamson and Kerekes (2009). This variable is constructed by identifying four distinct categories of culture that should constrain behavior related to social and economic interaction and, thus, economic performance. These four components are trust, respect, individual self-determination, and obedience. These traits serve as rules governing interaction between individuals, including market production and entrepreneurship. Trust, respect, and individual self-determination are thought to stimulate social and economic interaction, whereas obedience is thought to limit economic interaction and development by decreasing risk-taking, a trait essential to entrepreneurship.

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[7] For an in-depth explanation of and comparison between the Fraser freedom index and Heritage's freedom index, see De Haan and Sturm (2000).

All four of these cultural components create legitimacy for capitalism. In other words, countries rich in trust, respect, and individual self-determination and lacking a strong sense of obedience provide legitimacy for formal institutions of capitalism and economic freedom. For example, trust, respect, and individual self-determination all relate to the Protestant ethic described by Weber. In order to embody the "spirit of capitalism" and, thus, prove one's righteousness, trust is essential, as a lack of trust erodes potential trading arrangements, limiting economic profits and the level of investment individuals can attain. Respect is yet another element of this ethic, as a lack of respect can result in pilfering the economic spoils of others, thus rendering future mutually beneficial trade virtually impossible. This flies in the face of the Protestant ethic, as it demonstrates both a lack of industriousness and limits investment potential. Individual self-determination relates to the Protestant ethic through the ideals of personal culpability and hard work. The final trait, obedience, relates to Pejovich's (2003) work on culture in that strict obedience can increase the cost of transitioning to a system of capitalism, as individuals are steadfastly subservient to the system of formal and informal institutions they grew up with. These are just a few examples of how the components of our culture variable can be linked to the traits discussed in previous literature. Given an appreciation for the link between our measure and the theories and empirical work of prior studies, we now provide a more detailed discussion of how the culture measure is calculated.

Data from the European and World Values Surveys is utilized to quantify each component. These surveys capture individual beliefs and values reflecting local norms

and customs, i.e. culture (The EVS Foundation and the WVS Association 2006). In order to maximize sample size, we pool all countries surveyed in any of the five waves from the time periods 1981-84, 1989-1993, 1994-1999, 1999-2004, and 2005-2007. Survey answers are utilized and aggregated to create the culture variable for each period.

In order to correctly capture these categories, one question from the survey is identified that is most closely correlated with each trait. For example, trust is measured by the question, "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?" Self-determination is measured using the question, "Some people feel they have completely free choice and control over what happens to them. Please use this scale (from 1 to 10) where 1 means 'none at all' and 10 means 'a great deal' to indicate how much freedom of choice and control in life you have over the way your life turns out."

To measure respect, the following question is used: "Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Please choose up to five." The percentage of those surveyed who chose "tolerance and respect for other people" is used to measure respect. As Coyne and Williamson (2009) note, respect is, at its core, a measure of generalized versus limited morality, where generalized morality implies morality both within and between groups based on abstract rules governing behavior, and limited morality implies morality within groups based on rules but a lack of general rules governing interaction between groups. Thus, economic interaction and exchange can be hindered by a lack of generalized morality. The same question was used to measure obedience, but in this case, the

percentage of those surveyed who chose obedience as important for children to learn at home is used as our variable.

Individual responses from each of the four questions are aggregated for each country. A comprehensive culture measure is achieved by extracting the first principal components of all four traits. The index is normalized between zero and ten. A country with a higher score on the culture index has stronger informal constraints relative to countries with lower scores. Since we are concerned with the interaction between economic freedom and culture, this aggregate variable serves as the main focus of our empirical analysis. In order to maximize our number of periods for the panel data, the culture variable is constructed as follows.[8] The first wave of surveys (1981-84) represents culture in the time period 1984. The second wave (1989-1993) is used to create the culture variable in the period 1989. The surveys from 1994-1999 is used to create culture for the period 1994. The fourth wave from 1999-2001 represents the culture variable for 1999, and the latest wave is used to create the culture variable for the period 2004.

3.3 Control Variables

In addition to economic freedom and the interaction term, we also employ a variety of control variables that may affect a country's growth rate. We follow the existing literature on economic freedom and growth and the development literature in selecting our variables (for example, Levine and Renelt 1992; Dawson 1998; Acemoglu et al.

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[8] The 7 time periods are 1974 (average 1970-1974), 1979 (average 1975-1979), 1984 (average 1980-1984), 1989 (average 1985-1989), 1994 (average 1990-1994), 1999 (average 1995-1999), and 2004 (average 2000-2004).

2001, 2002; Gwartney et al. 2004). Our controls include initial real GDP per capita in

2000 constant dollars (log form) as a conditioning variable, the investment share of real

GDP (2000 constant dollars), population growth rate, urban population, the inflation rate,

the size of government, and country size.[9] We use the log of the total area of a country to

control for its size. Urban population is measured by the percentage of the population

living in an urbanized area. The rate of inflation is included to control for

macroeconomic policy shocks to the economy (Acemoglu, Johnson, and Robinson 2001,

2002). The size of government is measured as government's share of real GDP and is

included to control for the potential negative effect of a large government on economic

growth. Initial GDP per capita, investment share of GDP, and government share of GDP

are taken from Penn World Tables version 6.2 (Heston et al. 2006). Population growth,

urban population, area, and the inflation rate are taken from World Development

Indicators 2006. Appendix 1 provides a summary description of all data used in the

analysis along with their sources.

IV. Empirical Analysis and Results

This section explores our empirical strategy and results. We implement panel analysis

from 1970 to 2004 using five-year averages. We first provide a benchmark specification

using fixed effects (with robust standard errors) estimation to provide a baseline and a

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[9] In addition to these standard controls, a measure of human capital or the level of education is often
controlled for as well. However, we do not control for human capital in our main specification, but add it
in the robustness section, due to the high correlation between education measures and the interaction term
(see Appendix 2).

point of comparison with previous studies. We then turn to our main model specification, where we incorporate a combination of our main variables and our control vectors.

Throughout the analysis, we undertake a variety of regression specifications in order to follow the pre-existing literature, provide robustness, and minimize endogeneity concerns discussed below. We recognize that many of our variables of interest and our control variables are correlated with one another (see Appendix 2 for a pairwise correlation matrix). For example, initial economic freedom is correlated with the economic freedom/culture interaction term (0.75), investment (0.47), initial GDP pc (0.69), and urban population (0.55). In order to substantiate our results, we rely on a variety of regression specifications and acknowledge the presence of endogeneity among our independent variables.[10] Our specifications include controlling for both initial economic freedom (the freedom score at the beginning of the period) and the interaction term separately as well as jointly. We also include changes in economic freedom (the difference from the previous period) in a regression with the interaction term and initial freedom to comply with specifications in the current literature (for a theoretical discussion involving the 'correct' model specification, see De Haan et al. 2006 and Lawson 2006). We then add the controls in two stages to these different regression specifications in order to minimize endogeneity. All regressions are reported controlling for initial income.

4.1 Panel Benchmark Specification

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[10]Due to the focus on the interaction term, we do not find instrumental variable analysis appropriate for our empirical specification.

Summary statistics for all variables used in the analysis are provided in Table 1. We use

panel data with 141 countries, spanning from 1970 to 2004 (creating 7 points in time with

five-year averages), with income per capita averaging $9,063 and ranging from $488

(Sierra Leone 2004) to $59,880 (Luxembourg 2004).[11]

[Insert Table 1 Here]

The average growth rate is 3.54 with a standard deviation of 3.11. Initial economic

freedom has a minimum score of 2.10 (Nicaragua 1989) and a maximum of 9.23 (Hong

Kong 1984), with a mean of 5.79 and a standard deviation of 1.28. Changes in economic

freedom range from -2.22 to 2.31, with a mean of 0.20 and a standard deviation of 0.65.

Culture spans from 1984-2004 (5 time periods), ranging from 0 to 10 with a mean of

4.82, a standard deviation of 1.82.

As a benchmark, we first show the basic relationship between economic growth

and culture, initial economic freedom, changes in freedom, and the culture/freedom

interaction term. We report the results on the direct effects from culture and economic

freedom independently in order to verify the results found in the previous literature

(Tabellini 2009; Williamson and Mathers 2009). However, we drop this analysis in our

main specification and only analyze the interaction term. Our benchmark fixed effects

model specification can be identified as:

$$G_{it} = \mu + \beta M_{it} + \varepsilon_{it}$$

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where G equals the growth rate, and M represents the different combinations of our main variables. Initial income and country dummies are included in all regressions.[12]

The benchmark fixed effects regressions are shown in Table 2.

[Insert Table 2 About Here]

Columns (1) through (5) report the results from our multiple combinations of variables. Column (1) shows that, independently, culture has a positive and highly significant direct association with economic growth. This result supports previous work on the direct link between culture and growth (Guiso et al. 2006; Tabellini 2009). Column (2) reports that economic freedom at the beginning of the period positively and significantly affects growth. A one unit increase in initial economic freedom increases the growth rate by 1.09 percent, a substantial increase when compared to the average growth rate. If a country improves from the lowest economic freedom score to the highest, it would experience an increase in growth by 7.77 percent. Overall, columns (1) and (2) support the positive, direct and significant relationship found in previous empirical literature on economic freedom, culture and growth.

Column (3) suggests that the interaction term has a positive and significant impact on growth and explains 14 percent of the variation. This result holds in all three regressions presented in this table. For example, both initial freedom and the interaction term are positive and significant in column (4) and explain 18 percent of the growth

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[12] Since the culture index does not vary much over time we do not control for year dummies.

variation. If initial freedom is increased by one standard deviation, growth increases by 1.11 percent. This result also suggests that the impact from economic freedom on growth is enhanced by the presence of strong cultural constraints. A one standard deviation increase in the interaction term (for example, going from Rwanda to India) increases growth by approximately 1.5 percent (over 40 percent of the average growth rate). Regression (5) shows that even after controlling for changes in freedom, both initial freedom and the interaction term positively and significantly affect economic growth and explain 19 percent of the variation.[13] To understand the additional explanatory power from culture's interaction with freedom, we take the ratio of the two coefficients and find that culture enhances freedom's impact on growth by 10.3 percent and 18.4 percent (from regressions 4 and 5, respectively).

Table 2 provides a benchmark and a point of comparison. Overall, the results support previous findings where culture supports growth, and economic freedom is an important contributor to economic performance.[14] In addition to supporting previous work, these benchmark results begin to highlight a possibly important role for the interaction between culture and freedom and its subsequent relationship to growth, a connection that is currently unexplored. For example, by including the interaction term in the regressions, we explain the variation in growth by an additional 5 percent than in the regression with only initial freedom.   These results suggest that countries with informal institutions, i.e. culture, in line with the economic institutions captured by the freedom index will experience a higher rate of return from such institutions, whereas countries

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[13] Initial income is always negative and significant, as expected, in this Table and in the subsequent analysis.

[14] Our results are slightly different from other studies on economic freedom and growth because the change in freedom is often insignificant.

lacking this cultural foundation may not gain as much from implementing such reforms.[15] Again, analyzing the coefficients of the ratio of the interaction term and economic freedom, we find that culture explains, on average, over 17 percent of freedom's influence on economic growth. In other words, it is the 'informal glue' that contributes to creating binding constraints and the overall effectiveness of economic institutions.

4.2 Core Panel Analysis and Results

In order to provide a more complete model specification, we re-estimate the above regressions but now include our additional control variables. Table 3 reports the results with the additional controls in two stages. We first control only for investment share of GDP and population growth and then we add percent urban population, inflation rate, government share of GDP, and log of the area for the complete specification.

[Insert Table 3 About Here]

The results with our additional controls, presented in Table 3, do not change significantly from Table 2 above. Initial freedom remains positive and significant (columns 1 and 2). More importantly for us, the interaction term remains positive and significant in all six regressions. Only in regression (8) does economic freedom (both initial and change) lose its significance; however, the interaction term remains significant. One difference is that in regressions (6)-(8), economic freedom does lose its significance;

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[15] This problem highlights a concern raised in previous studies (Gwartney et al. 1999) where successful change in economic institutions requires a credible commitment from the government.

however, the interaction term remains significant. Also, the additional control variables

do not add any explanatory power to the model, as suggested by the similar R-squares.

As we would expect, investment to GDP positively and significantly impacts economic

growth in three out of the eight regressions.[16] Population growth is always insignificant.

Urban population is positive but insignificant in all regressions. The inflation rate is

almost always negative and is significant in one out of the four regressions. Lastly, the

size of government is never significant, while the area of a country has a positive sign but

is only significant in one regression.

       Overall, we view our benchmark and core analysis as providing strong evidence

that not only do culture and economic freedom matter for economic growth, supporting

previous works, but their interaction also contributes significantly to a country's growth

potential. While these results are consistent, we engage in a variety of robustness checks.

In the next section, we provide sensitivity analysis to address potential concerns with

endogeneity and omitted variable bias. We first provide results from subsamples based

on income and based on economic freedom scores to substantiate our claims concerning

the interaction term; secondly, we provide results with three additional control variables.

V. Sensitivity Analysis

5.1 Subsamples

Our first robustness check attempts to control for endogeneity by rerunning our main

regressions using subsamples from our main dataset. We run two basic regressions on

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[16] Investment may lose its significance in the other regression specifications due to the endogeneity
concerns discussed above.

two different subsamples created by splitting our dataset based on income or based on economic freedom. The first subsample, based on income, splits the sample of countries into two—one group includes those countries with an average annual GDP pc below $10,000, and the second group includes countries above the $10,000 threshold. We do so in order to split our country sample into two categories loosely defined as developed (high income or middle income) or underdeveloped (low income). Although we control for initial income levels in the previous regressions, using subsamples provides us with a unique perspective of how freedom and the interaction between freedom and culture affect economic performance across countries at different levels of development. Another benefit of using $10,000 GDP pc as the cutoff is that it essentially splits our countries in half.

The second subsample is based on the economic freedom score. We split our sample of countries again into two groups: 1) the economically free countries with an index greater or equal to five and 2) the economically unfree countries with an index less than five. We choose this benchmark because this splits the index in half. Although we control for initial freedom in our previous regressions, we can analyze if there is a difference in the interaction between culture and freedom among either those countries that are already free or those that are unfree. We control for initial freedom and the interaction term as well as investment/GDP and population growth with the first subsample. With the second subsample, we control for initial income and the interaction term in addition to the same two basic controls.

Columns (1) - (4) in Table 4 report the results with the income subsample. An interesting result emerges in all four regressions. In both income groups, initial freedom is insignificant, while the interaction term is always positive and significant. We view this result as highlighting an important and critical role for culture in enhancing the productivity and capability of economic freedom's impact on growth. While initial freedom alone may be insignificant, the interaction between freedom and culture suggests that for economic institutions to be effective, they must be embedded in a cultural environment conducive to those rules and constraints, regardless of the level of development.[17] If these informal institutions, captured by culture, are lacking, economic freedom alone may not possess the necessary binding constraints to be as effective as theory predicts. These results suggest strong implications for policy recommendations and reform in both developing and developed countries.

The results from the second subsample, based on the freedom index, are presented in columns (5)-(8) in Table 4 above. In all four regressions, the interaction term is positive and significant. This suggests that culture's ability to enhance economic institutions persists regardless of the level of freedom already attained in a country. In comparing the free to the unfree countries, the coefficient on the interaction term among the unfree countries is larger than in the free countries. This may suggest that culture's ability to enhance economic institutions is stronger when freedom is weak or when

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[17] Another interesting result from these regressions show that population growth has a positive and significant effect on growth in our countries below $10,000 GDP pc. Also, investment is insignificant in the underdeveloped countries while positive and significant in the developed subsample.

countries are first transitioning to economic freedom, supporting our theory above. Additionally, the R-squares are much larger among the unfree countries.

5.2 Additional Controls

Another robustness check tests for omitted variable bias by including three additional control variables. The control vector now includes a measure of educational attainment, a geography component, and legal origin. We did not include these measures previously due to the high correlations with our main variables, with other controls, or because including them reduces the number of observations significantly.

We include the effect of education rates by using two different measures. The first measure is the adult literacy rate, defined as the percentage of the population age 15 and above that can read and write. The second measure is primary education, measured as the number of pupils enrolled in primary school. The positive link between education and development and growth is well documented (Mankiw et al. 1992; Barro 2001, 2002). Both variables are collected from WDI 2006.

Our second additional control is designed to capture any affects on growth due to geography. We use latitude, or distance from the equator, as our geography measure. Diamond (1997), Gallup et al. (1999), and Sachs (2001, 2003) argue that geography has a direct impact on economic growth due to climate, the disease environment, endowment of resources, and transactions costs. Therefore, we include latitude to control for the impact of geography on growth.

Our last control variable is legal origin. The idea that many countries have a distinct legal origin is identified by La Porta et al. (1999, 2004). Legal origin captures the effects of common versus civil law. Legal origin is shown to shape financial, legal, and economic institutions and outcomes (Djankov et al. 2003). Common law, imposed during British colonization, is referred to as English legal origin, and civil law, imposed by French colonizers, is French legal origin. We control for the effect of past legal institutions by including legal origin as dummy variables representing English and French origin.

[Insert Table 5 About Here]

Table 5 presents regressions with the three additional controls. In all regressions, we include initial income, initial freedom, change in freedom, and the interaction term. We do so to provide the most difficult case for significance for the interaction term, our main variable of interest. Regressions (5) through (8) include all of our previous control variables. In three out of four regressions, education positively and significantly impacts economic growth. Out of these same four regressions, initial economic freedom, change in freedom, and the interaction term retain their respective relationships with growth in two regressions. In both regressions controlling for geography, latitude is positive but never significant. Initial freedom is significant in regression (3), the interaction term is significant in both (3) and (7), and the difference in freedom is insignificant in both regressions. In regressions (4) and (8), legal origin is insignificant as well as the

interaction term. It is also worth noting that the inclusion of education significantly increases the R-squares, whereas geography and legal origin only marginally explain additional growth variations.

Overall, our results from the panel models and the robustness checks suggest that our results are capturing the causal relationship of economic freedom, culture, and their interaction on growth and are minimizing biases from measurement error or endogeneity.

VI. Conclusion

We are now able to answer the question that began this analysis— does capitalism perform better when embedded in certain cultures? Our results undoubtedly indicate yes. Measures of economic freedom and culture have both, independently, been found to positively and significantly impact economic growth (C. Williamson and Mathers 2009). Our analysis extends this line of analysis, providing an empirical test of the impact of the interaction between economic freedom and culture on economic growth. Results indicate that the interaction between the economic freedom and culture variables has a significant and positive effect on economic growth.

These results suggest that, as the body of theoretical institutional analysis connotes, formal institutions that support economic freedom will not "stick" and, therefore, result in greater economic growth and development, unless they are compatible with existing informal institutions (Boettke 2009; Boettke and Coyne 2009; Boettke, Coyne, and Leeson 2008). In other words, the same economic institutions can be

installed in different cultures and have different results due to the cultural environment that may enhance or diminish the productivity of these institutions.

Though certain cultures may diminish the productivity of capitalism, we want to emphasize that we are not advocating that countries should resist changes to pro-market reform that is captured by the freedom index. We view our analysis as providing an explanation as to why such reforms may not always provide the panacea of results that are predicted from such changes. For example, a culture that emphasizes trust, respect, and self-determination and does not highly value obedience can enhance the effectiveness of institutions of economic freedom, providing harmony between existing informal institutions and newly introduced formal institutions that allow for greater economic growth and development. On the contrary, newly introduced formal institutions of economic freedom that do not mesh well with existing informal institutions may not have the expected outcome.

As Pejovich (2003) explained, the heightened transaction costs of transition associated with a formal-informal institutional mismatch means that the same amount of resources devoted to installing institutions of economic freedom in two different cultures can have different outcomes. Formal-informal institutional compatibility enhances the productivity of the formal institutions, meaning that we get "more bang for the buck." This theory, as supported by our empirical results, highlights important policy implications, indicating that formal institutions tailored to the informal institutions (i.e. culture) of a country can produce better results in terms of economic growth, a critical

consideration when striving to spread the institutions of economic freedom to other countries.

Our study fills an existing gap in the empirical growth literature by measuring the effect of the interaction between culture and economic freedom on growth. We view our study as another step towards finding channels that permit individuals to enjoy greater freedom and prosperity. With this analysis, policymakers have additional criteria to consider when attempting to install formal institutions of economic freedom and have the greatest propensity for success.

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Appendix 1:

Variable	Data Description	Data Source
GDP Growth	Growth of GDP per capita, PPP basis, constant 2000 international dollars.	World Development Indicators 2006
Economic Freedom	Economic freedom of the World is compiled by the Fraser Institute and measures the level of economic freedom on a scale from zero to ten, with ten representing a greater degree of freedom. The index utilizes 21 components grouped in seven broad categories: size of government, economic structure and use of markets, monetary policy and price stability, freedom to use alternative currencies, legal structure and security of security of private ownership, freedom to trade with foreigners, and freedom of exchange in capital markets. The index is available from 1970 onwards, based on 5 year intervals from 1970 to 2000; after 2000 it is reported on an annual basis.	Fraser Institute, *Economic Freedom on the World*
Culture	The sum of three positive beliefs (control, respect, trust) minus the negative belief (obedience). Trust is measured as the percentage of respondents who answered that "Most people can be trusted," respect is measured as the percentage of respondents that mentioned the quality "tolerance and respect for other people" as being important, control is measured as the unconditional average response (multiplied by 10) to the question asking to indicate how much freedom of choice and control in your life you have over the way your life turns out (scaled from 1 to 10), obedience is the percentage of respondents that mentioned obedience as being important. PCA culture is constructed by using principle component analysis to extract the common variation among all four components. Both indices are normalized to range between 0 and 10.	World Values Surveys, 1981-2007
GDP pc (log)	Real GDP per capita in 2000 constant dollars, log form.	Penn World Tables version 6.2
Investment share of GDP	Ratio of total investment to GDP in 2000 constant dollars.	Penn World Tables version 6.2
Log Area	Logarithm of total area of a country.	World Development Indicators 2006
Population Growth	Growth rate of population.	World Development Indicators 2006
Urban Population	Percentage of population living in an urban area.	World Development Indicators 2006
Inflation Rate	Inflation is measured by the rate of increase in the price index.	World Development Indicators 2006
Government share	Ratio of size of government to GDP in 2000 constant dollars.	Penn World Tables version 6.2

of GDP

Adult Literacy Rate	Defined as the percentage of people above the age of 15 who can read and write.	World Development Indicators 2006
Primary School Enrollment	Total number of pupils enrolled in primary school.	World Development Indicators 2006
Geography	Measured as the absolute value of the latitude of the country, scaled to values between 0 and 1 (0 is the equator)	La Porta et al. 1999
Legal Origin	Dummy variables representing English or French legal origins.	La Porta et al. 1999

	Growth	Cult.	Initial econ free	Change econ free	Cult* econ free	Initial gdppc	Invest/ GDP	Pop growth	Urb. pop	Area (log)	Infl.	Gov/ GDP	Lit. rate	Prim. sch.	Geo.	English	French
Growth	1.00																
Culture	0.02	1.00															
Initial econ freedom	0.14	0.52	1.00														
Change econ freedom	0.14	-0.19	0.22	1.00													
Culture*freedom	-0.04	0.94	0.75	-0.16	1.00												
Initial gdppc (log)	-0.08	0.59	0.69	-0.03	0.69	1.00											
Invest/GDP	0.17	0.54	0.47	-0.03	0.57	0.40	1.00										
Pop growth	0.18	-0.21	-0.27	0.01	-0.27	-0.26	-0.17	1.00									
Urban pop %	-0.07	0.35	0.55	0.02	0.40	0.81	0.40	-0.19	1.00								
Area (log)	-0.01	0.07	-0.19	-0.04	0.02	-0.15	0.04	0.11	-0.13	1.00							
Inflation rate	-0.29	-0.13	-0.23	-0.10	-0.23	-0.04	-0.05	-0.03	0.03	0.08	1.00						
Gov/GDP	-0.08	-0.13	-0.24	0.10	-0.17	-0.17	-0.11	-0.05	-0.15	-0.22	0.05	1.00					
Literacy rate	-0.14	0.38	0.38	0.12	0.35	0.66	0.36	-0.57	0.50	-0.24	0.04	0.09	1.00				
Primary school rate	0.08	0.64	0.73	-0.35	0.73	0.76	0.36	0.07	0.37	0.05	-0.26	-0.28	0.24	1.00			
Geography	0.04	-0.02	0.08	0.03	-0.02	0.02	0.04	0.01	-0.02	0.01	0.00	0.02	0.00	-0.04	1.00		
English legal origin	0.00	-0.12	0.00	0.04	-0.12	0.00	-0.04	-0.05	0.05	0.02	-0.02	0.04	0.05	-0.04	-0.28	1.00	
French legal origin	0.01	0.14	-0.03	-0.04	0.14	0.00	0.02	0.03	-0.03	-0.03	0.01	-0.05	-0.05	0.01	-0.24	-0.63	1.00

Table 1: Summary Statistics					
Variable	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
Growth	686	3.54	3.11	-11.48	21.21
GDP pc	624	9,063.55	8,775.49	488.16	59,880.20
Initial gdppc (log)	692	8.59	1.09	5.88	10.78
Culture	228	4.82	1.82	0.00	10.00
Initial econ freedom	640	5.79	1.28	2.10	9.23
Change econ freedom	570	0.20	0.65	-2.22	2.31
Cult*econ freedom	187	32.03	16.45	0.00	72.68
Invest/GDP	693	16.13	8.44	2.21	50.97
Pop. Growth	693	1.70	1.51	-20.36	7.07
Urban pop. %	693	54.82	23.39	3.67	100.00
Inflation rate	663	47.22	324.34	-3.01	6,424.96
Gov/GDP	693	20.34	8.60	2.55	67.43
Area (log)	679	12.19	2.01	5.77	16.61
Literacy rate	167	75.02	21.55	11.40	99.79
Primary School rate	70	0.54	0.25	0.06	0.97
Latitude	643	0.27	0.18	0.01	0.72
English legal origin	643	0.37	0.48	0.00	1.00
French legal origin	643	0.42	0.49	0.00	1.00

Table 2: Economic Freedom, Culture, and Growth
Panel Fixed Effects Regressions - Benchmark Specification

	Dependent Var: Growth Rate				
	(1)	(2)	(3)	(4)	(5)
Culture	0.92**				
	(0.38)				
Initial econ freedom		1.09***		0.87**	0.38*
		(0.14)		(0.35)	(0.22)
Cult*econ freedom			0.13***	0.09***	0.07**
			(0.03)	(0.03)	(0.03)
Change econ freedom					0.58
					(0.37)
Initial gdppc (log)	-5.39**	-4.55***	-3.55***	-4.55***	-3.17***
	(2.31)	(0.67)	(1.05)	(1.29)	(0.77)
Constant	47.50***	36.13***	31.52***	36.68***	27.53***
	(19.57)	(5.44)	(8.77)	(10.30)	(6.44)
Observations	205	621	181	180	168
Number of countries	87	121	75	74	69
Adj. R-squared	0.12	0.13	0.14	0.18	0.19

Note: Robust standard errors are in parentheses. Significance level: *** at 1%, ** at 5%, * at 10%.

Table 3: Economic Freedom, Culture, and Growth
Panel Fixed Effects Regressions With Controls

Dependent Var: Growth Rate

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Initial econ freedom	1.00***	0.93***			0.75**	0.66	0.33	0.25
	(0.13)	(0.20)			(0.32)	(0.40)	(0.22)	(0.33)
Cult*econ freedom			0.12***	0.11***	0.08***	0.08**	0.07**	0.07**
			(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Change econ freedom							0.47	0.46
							(0.38)	(0.37)
Invest/GDP	0.16***	0.15***	0.20*	0.17	0.18	0.16	0.11	0.11
	(0.05)	(0.04)	(0.11)	(0.12)	(0.11)	(0.12)	(0.10)	(0.10)
Pop. Growth	-0.23	-0.23	-0.75	-0.05	-0.46	0.05	-0.72	-0.66
	(0.47)	(0.49)	(0.74)	(0.86)	(0.73)	(0.87)	(0.63)	(0.68)
Urban pop. %		0.00		0.18		0.15		0.05
		(0.05)		(0.13)		(0.14)		(0.12)
Inflation rate		-0.001***		-0.006		0.00003		-0.0003
		(0.0002)		(0.006)		(0.0006)		(0.0006)
Gov/GDP		0.01		-0.13		-0.14		-0.04
		(0.05)		(0.14)		(0.14)		(0.11)
Area (log)		151.86***		177.57		103.53		116.51
		(47.82)		(371.65)		(402.37)		(351.62)
Initial gdppc (log)	-4.37***	-4.51***	-4.40***	-6.10***	-5.15***	-6.49***	-3.79***	-4.30***
	(0.58)	(0.71)	(1.24)	(1.97)	(1.39)	(2.05)	(0.91)	(1.47)
Constant	32.97***	-1,806.6***	36.59**	-2,227.31	40.01***	-1,277.86	32.32***	-1,468.38
	(4.98)	(581.14)	(9.91)	(4753.03)	(10.70)	(5147.24)	(7.13)	(4538.71)
Observations	621	584	181	176	180	175	168	164
Number of countries	121	118	75	73	74	72	69	67
Adj. R-squared	0.18	0.19	0.18	0.20	0.20	0.21	0.21	0.20

Note: Robust standard errors are in parentheses. Significance level: *** at 1%, ** at 5%, * at 10%.

Table 4: Economic Freedom, Culture, and Growth
Panel Fixed Effects Regressions With Subsamples

Dep.Var: Growth Rate

	Group1: <10,000 GDPPC		Group 2: >10,000 GDPPC		Group 3: Free (Index >5)		Group 4: Unfree (Index<5)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Initial econ freedom	0.80	1.02	-0.05	-0.20				
	(0.65)	(0.68)	(0.22)	(0.21)				
Cult*econ freedom	0.15**	0.15*	0.06**	0.06**	0.08***	0.08***	0.58**	0.82***
	(0.07)	(0.09)	(0.03)	(0.03)	(0.02)	(0.02)	(0.26)	(0.20)
Invest/GDP		0.10		0.19**		0.11		-0.14
		(0.35)		(0.08)		(0.08)		(0.29)
Pop. growth		2.00*		-0.98		0.07		8.10*
		(1.08)		(0.97)		(0.63)		(4.69)
Initial gdppc (log)					-2.30***	-2.70***	-16.76***	-25.04***
					(0.67)	(0.89)	(4.43)	(7.57)
Constant	-3.39	-8.59	0.53	-2.14	21.98***	23.52***	134.07***	194.63***
	(3.19)	(5.57)	(1.15)	(1.90)	(5.65)	(7.07)	(37.34)	(62.74)
Observations	85	84	97	97	146	146	35	35
Number of countries	43	43	36	36	64	64	24	24
Adj. R-squared	0.12	0.12	0.03	0.09	0.23	0.17	0.40	0.46

Note: Robust standard errors are in parentheses. Significance level: *** at 1%, ** at 5%, * at 10%.

Table 5: Economic Freedom, Culture, and Growth
Panel Fixed Effects Regressions With Additional Controls

Dep. Var: Growth Rate								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Initial econ freedom	0.44	1.94	0.46**	0.49**	0.73*	1.49**	0.39	0.37
	(0.93)	(1.15)	(0.19)	(0.20)	(0.37)	(0.67)	(0.33)	(0.33)
Change econ freedom	0.95***	0.67	0.56	0.68*	0.83***	0.42	0.47	0.56
	(0.30)	(0.55)	(0.35)	(0.37)	(0.20)	(0.27)	(0.38)	(0.39)
Cult*econ freedom	-0.004	0.09**	0.06**	0.05	0.11*	0.03	0.06**	0.05
	(0.09)	(0.04)	(0.03)	(0.03)	(0.06)	(0.03)	(0.03)	(0.03)
Literacy rate	0.17**				-0.02			
	(0.06)				(0.04)			
Primary sch. enrollment		6.37*				6.37***		
		(3.70)				(2.17)		
Geography			1.39				1.23	
			(0.94)				(0.81)	
English legal origin				0.24				0.25
				(0.35)				(0.42)
French legal origin				0.26				0.23
				(0.42)				(0.44)
Invest/GDP					-0.09	0.41***	0.04	0.05
					(0.10)	(0.09)	(0.09)	(0.10)
Pop. Growth					1.93*	-2.55**	-0.50	-0.62
					(1.01)	(1.11)	(0.78)	(0.75)
Urban pop. %					0.70***	-0.48*	0.18**	0.18*
					(0.13)	(0.23)	(0.09)	(0.09)
Inflation rate					-0.02***	-0.0006	0.001	0.0003
					(0.00)	(0.001)	(0.001)	(0.0006)
Gov/GDP					-0.01	-0.01	-0.10	-0.08
					(0.10)	(0.15)	(0.10)	(0.11)
Area (log)					0.00	-2,190.02**	227.85	248.12
					(0.00)	(941.39)	(342.76)	(365.28)

Initial gdppc (log)	-8.07**	-6.88**	-3.20***	-2.83***	-6.64***	-5.36**	-5.45***	-5.17***
	(3.11)	(2.68)	(0.80)	(0.76)	(1.60)	(2.26)	(1.24)	(1.24)
Constant	56.51**	48.27**	27.18***	24.12***	13.67	28,608.86**	-2,900.02	-3,164.00
	(23.31)	(22.14)	(6.77)	(6.49)	(12.18)	(12274.52)	(4421.27)	(4712.26)
Observations	53	48	155	155	53	48	151	151
Number of countries	41	26	69	69	41	26	67	67
Adj. R-squared	0.45	0.56	0.22	0.20	0.96	0.87	0.26	0.24

Note: Robust standard errors are in parentheses. Significance level: *** at 1%, ** at 5%, * at 10%.