Cross Country Effects of Democracy on Economic Liberalization

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Abstract

    This paper finds evidence in support of the view that democratic and market transitions facilitate the income convergence of developing countries. Recent studies suggest that rapidly developing economies experience an economic slowdown when per capita income reaches approximately $15,000. It is suggested that to transition past this income threshold structural reforms supportive of democracy and economic freedom are needed. This analysis finds that countries with higher levels of democracy have an increased probability of crossing this income threshold. Results are similar for economic freedom, but are less robust due to limited data availability. These results suggest that India may have less difficulty transitioning the $15,000 per capita income threshold than China.

1. Introduction

Perhaps the most remarkable economic story during the past thirty years is the rapid growth of the developing world. Poverty rates declined significantly in China, India, and many other countries. Per capita GDP increased and continues to grow at a high rate in many countries, especially in China. The convergence hypothesis suggests that this growth will continue, but will slow as countries approach the income level of the developed world. Several recent papers question this view and suggest that the growth rate of many rapidly expanding countries will soon slow. This research suggests that there is a range along the income curve at which the growth rate of countries slows and does not increase until various structural reforms occur. This research suggests two key components of the structural reform: democracy and economic freedom. It is argued that countries will be unable to increase per capita GDP beyond a particular threshold unless transitions to democracy or increased economic freedom occur. This paper empirically examines this assertion.

Eichengreen, Park, and Shin (2011) find evidence that economic growth slows in rapidly developing countries when per capita income reaches approximately $15,000-$17,000 in PPP adjusted constant 2005 international dollars. They find little evidence that democratic reforms are needed to transition past this income threshold. However, they do indicate that countries more open to international trade maintain higher growth rates during this transition period. Fatás and Mihov (2009a; 2009b) refer to this income barrier as a "Great Wall" and argue that market based reforms are needed to transition to higher income levels. They suggest that the income threshold is closer to $12,000, lower than that found by Eichengreen, Park, and Shin (2011).

Winiecki (2012) argues that democratic reforms are in fact necessary for a country to transition past this income threshold. He predicts that the growth rates of non-democratic countries will slow as they approach the threshold. Moreover, if structural democratic reforms do not occur, countries will be unable to transition past the income threshold. If correct, these views suggest that India, Brazil, and Chile will continue to develop at this per capita income level, but that China and Russia will not unless reforms take place.

This paper finds empirical support for this view. When countries approach the income threshold, those that are more democratic have a higher probability of crossing the threshold than those that are more autocratic. The data also indicate that a higher level of economic freedom

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increases this probability as well. However, because the economic freedom data is available for fewer years than the measures of democracy, the number of observations is small reducing the reliability and the robustness of the results.

2. Democracy, Economic Freedom, and Growth

Previous empirical research indicates that the relationship between political institutions and economic growth is weak (Tavares and Wacziarg 2001). However, there are compelling theoretical arguments that suggest a positive link between growth and democracy. In general, democracies have constitutional constraints on the exercise of government power, which limits the expropriation of private property. Such constraints strengthen property rights, reduce uncertainty, lead to increased rates of investment, and provide an environment more hospitable to entrepreneurship. This facilitates economic growth and prosperity. Weingast (1995) suggests that federalism, "market preserving federalism" specifically, is the important aspect of democracy that leads to economic growth. More autocratic regimes do not have these constitutional protections and are more likely to have less secure property rights and hence lower growth rates and income levels.

Moreover, democracies are more stable over long time horizons because the transfer of power between competing groups and leaders is handled through an orderly and predefined process. This reduces the uncertainty accompanying long-term investments. While non-democratic regimes can be stable during a leader's tenure, the transfer of power after their death or coup is often unstable. Protests, violence, and even civil wars are often the result. The uncertainty of future violence as well as the potential that future rulers will confiscate the property of those who oppose them can lead to decreased levels of investment, entrepreneurship, and lower growth rates.

However, there are also some adverse elements of democracy. Taxes that transfer income from taxpayers to non-taxpayers can reduce the incentive to work and invest. The democratic political process is susceptible to interest groups and rent seeking. Lastly, political decisions in democratic countries tend to be shortsighted. Policy choices that lead to immediate benefits with costs that materialize later are generally preferred. Promising goodies in the short-run is a much easier way for politicians to win elections than pursuing long-term policy goals. These factors—

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transfers, interest group lobbying, and shortsightedness of the political process—lead to higher taxes or higher debt or sometimes both. This reduces the incentive to invest and discourages entrepreneurship. Autocratic regimes can, in theory, limit the effects of these factors. In practice, however, autocratic regimes may not be less susceptible to these factors.

These conflicting attributes of democracy may explain its weak statistical relationship with growth in the existing literature. Results from earlier empirical research, however, found a more robust relationship. For example Scully (1988) and Barro (1991) found that democracy had a significantly positive impact on growth. Using the Gastil index of political rights and civil liberties, which is now the Freedom House index, they found that more democratic countries had higher rates of economic growth. While this index is considered a measure of democracy, the authors used it primarily as a proxy for economic institutions as no such measure existed at the time. In later work, Barro (1997) found a non-linear relationship. Movements toward democracy were growth enhancing to a point, but growth reducing thereafter providing possible evidence for democracy's shortcomings.

More recent literature indicates that a weak relationship between democratic political institutions and growth is a result of accounting for the impact of economic freedom (Knack and Keefer 1995; Dawson 1998; Gwartney, Lawson, and Holcombe 1999; Wu and Davis 1999). Economic institutions—e.g. economic freedom—are a significant determinant of long-run growth (Acemoglu, Johnson, and Robinson 2001; Berggren 2003). However, economic and political institutions aren't necessarily distinct from one another. Recent empirical studies have found a statistically significant relationship between political and economic institutions. Lawson and Clark (2010) found preliminary evidence that movements toward economic freedom were related to a country's level of political freedom. Others found a statistically significant relationship between political and economic institutions with Granger causality tests (de Haan and Sturm 2003; Dawson 2003; Pitlik and Wirth 2003; Vega-Godillo and Alvarez-Arce 2003; Aixala and Fabro 2009). Farr, Lord, and Wolfenbarger (1998) did not find a direct link between political and economic institutions. However, they indicated that economic freedom leads to higher income levels, which corresponds to increased political freedom. This result is consistent with Lipset (1959) who suggested that higher income levels would lead to increases in political freedom. While Rigobon and Rodrik (2005) used a different measure—a rule of law measure was used as a proxy for economic freedom—and a different estimation technique, they found

that democratic political institutions had a positive impact on the rule of law. Taken as a whole, this literature suggests that political and economic institutions are interrelated.

This literature argues that institutions are important for long-run prosperity. This paper examines the argument of whether these institutions are necessary for countries to cross a real per capita income threshold of roughly $12,000-$16,000. Winiecki (2012) argues that economic freedom alone is not sufficient. Political freedom is also needed to transition to higher per capita income. Fatás and Mihov (2009a; 2009b) make a similar argument. They construct a measure of good institutions that incorporates aspects of both economic freedom and democracy. With this index they argue that good institutions become important as countries approach this income threshold. This is tested in the following sections.

3. Empirical Framework

Prior research typically uses growth rates or the natural log of per capita GDP as the dependent variable. In this analysis the dependent variable is no longer continuous, but becomes a binary. Prior to crossing the threshold the dependent variable is zero. When a country crosses the threshold the dependent variable becomes one. Using this dependent variable the analysis is simple. Does democracy or economic freedom have any impact on the probability that a country crosses the per capita income threshold?

(1) $AboveIncomeThreshold_{it} = \alpha + \theta Instituions_{it-10} + \phi X_{it} + d_t + u_{it}$

(2) $AboveIncomeThreshold_{it} = \alpha + \beta \Delta Institutions_{it} + \phi X_{it} + d_t + u_{it}$

Equations 1 and 2 are the primary equations in this analysis. The dependent variable is the binary described above. The subscript represents country, i, and period, t. The variable $Instituions_{it-10}$ is either the level of democracy or economic freedom in the prior decade. The other control variables are contained in X_{it} and d_t represents the time dummies while u_{it} is the white noise error term. In equation 2 the institutional variable is no longer the level during the prior period but the change during the current decade. Each equation investigates a slightly different aspect of the hypothesis. The first tests whether countries that are more democratic or economically free are

more successful at crossing the income threshold. The second equation tests whether countries experiencing democratic or market transitions are more successful crossing the threshold.

Controlling which countries are included in this analysis is crucial. Once a country successfully crosses the income threshold it is dropped from the analysis in subsequent periods. The hypothesis is primarily concerned with factors that lead countries to cross the income threshold. When a country's income becomes high enough it is no longer relevant for the analysis. Countries at the lower end of the income spectrum are also excluded from the analysis. Only countries that can realistically cross the income threshold during the decade are included for that time period. This ensures that we have a reasonable sample of countries with which to test the hypothesis. There are two income thresholds tested in this analysis. The first is $15,000 and is close to the threshold suggested by Eichengreen, Park, and Shin (2011).[1] The second is $12,000, suggested by Fatás and Mihov (2009b). The lower income cut off for inclusion in the sample was calculated based upon an annual three percent real growth rate during the period. Countries with incomes above this cutoff could possibly transition across the threshold during the subsequent decade. For the thresholds of $15,000 and $12,000 the lower cutoff is $11,160 and $8,929, respectively.

The income data is from the Penn World Tables. It is per capita income in PPP adjusted 2005 international dollars. The series is chain linked and spans the period 1950-2010. The measure of economic institutions is the Economic Freedom of the World (EFW) index published annually by James Gwartney, Joshua Hall, and Robert Lawson. This is a composite index consisting of five categories that are themselves composed of 42 different components. The five categories are the size of government, legal institutions, monetary policy, openness to trade, and regulation of credit, labor, and business. Countries are rated on a scale of 0-10 with higher values representing increased economic freedom. The EFW dataset used in this analysis is from Gwartney, Hall, and Lawson (2012). The available EFW data spans 1970-2005. Because the data span a shorter period than the income and democracy data the analysis with EFW has much fewer observations.

The measure of democracy comes from the Polity IV index. The polity index measures the degree to which a country is considered democratic or autocratic. Countries are rated on a scale

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[1] The mean value of the threshold was $16,740 while the median was $15,058.

from -10 to 10 with -10 indicating full autocracy and 10 full democracy. The data span the period 1950-2010.

The analysis also controls for the impact of geographic and locational factors. Gallup and Sachs (1999) demonstrated that various geographic factors impact economic outcomes. Three variables from that study are widely used in the literature and are included here. The first is the percentage of a country's population that lives within 100 kilometers of the coast. This measure captures the ability of a particular country to access ports and sea routes and hence international markets. The second is the percentage of a country's land area in the tropics. This variable captures the harshness of the disease and agricultural environment. Temperate zones have a much lower incident of insect borne diseases and a more hospitable agricultural environment than do the tropics. The last variable is the closest air distance in kilometers from a country to one of three major markets: New York, Tokyo, or Rotterdam. This variable is designed to capture the ability of a country to access international markets. The cost of participating in these markets is higher when goods must be transported over a greater distance.

4. Results

Table 1 lists the pooled OLS regression results of the impact of the level of democracy on the probability of crossing the income threshold. The unit of analysis here is a decade. Therefore, the dependent variable is a one if the country crossed the income threshold during the decade. For this table the income threshold is $15,000 in constant 2005 international dollars.

The first two columns of table 1 contain regressions where the primary variable of interest is the Polity IV democracy index at the end of the prior ten-year period. In each regression the democracy measure is positive and significant at the one percent level. A unit higher polity index increases the probability of crossing the threshold by 0.02. This is a small value, but one should keep in mind that the polity index spans -10 to 10. Therefore, if the index were to be higher by say, 5, this translates into a 0.10 higher probability of crossing the threshold. Increases of this magnitude have occurred. During the 1980s, Taiwan's democracy index increased by 6. During the following decade it increased by 10.

The signs of the three geographic and locational variables are consistent with economic theory, but not all are significant. The tropical location variable is negative and significant at the

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one percent level indicating that countries in tropical regions have a much lower probability of crossing the income threshold. The variable for the percentage of the population within 100 kilometers of the coast is positive and significant at the ten percent level. Countries closer to navigable water ways have easier access to trade routes and are better able to take advantage of the gains from trade. The air distance to major international markets is negative, but not significant. In the second column these variables become insignificant. This is due to the inclusion of three regional dummies for Sub-Saharan Africa, Asia, and Latin America. These regional variables capture factors similar to the geographic and locational variables. And they do not increase the explanatory power of the regression. In subsequent tables these regional variables are left out because they are never significant and reduce the degrees of freedom in regressions with much fewer observations. Each regression includes time dummies for each decade and the standard errors listed are robust to heteroskedasticity and clustered by country.

The last two columns of table 1 replace the level of democracy at the end of the prior period with its average during the prior period. The results are identical. The democracy variable remains significant at the one percent level and indicates a higher probability of 2 percentage points per unit.

Economic freedom is the focus of table 2. The independent variable is now the level of economic freedom at the end of the prior period. The results of columns one and two indicate that the impact of higher economic freedom is quite large. A unit higher level of economic freedom at the end of the prior decade increases the probability of crossing the threshold by 0.29 or 0.25 depending upon the regression. This is significant at the one percent level in both regressions. Columns three and four add the polity democracy index at the end of the prior period. Unlike the previous table, the democracy measure is not significant. The economic freedom variable remains large and highly significant. This result of democracy becoming insignificant after controlling for economic freedom is consistent with the literature. While these results indicate that economic freedom is much more significant a factor then democracy, they should be taken with a grain of salt. There are much fewer observations in these regressions because the economic freedom data starts in 1970. This excludes from the analysis countries that crossed the income threshold earlier.

Instead of the level, the focus of table 3 is on changes in democracy and economic freedom. The first two columns list the impact of changes in democracy on the probability of crossing the

income threshold during the same decade. Thus, in this specification the change in democracy measure is for the contemporaneous decade. The change in democracy is not significant in column one, but is significant at the five percent level in column two when the initial level is included. This indicates that a change in democracy has an impact, but that the starting point matters. A country with a unit increase in its democracy index during the decade increased the probability of crossing the income threshold by 0.01. A unit higher level of democracy at the start of the period increased the probability by 0.02. If we return to the example of Taiwan, one can see a larger impact of these coefficients. During the 1980s Taiwan's democracy index increased by 6. Thus, for the next decade its initial level of democracy is also higher by 6. This translates into an increased probability during the 1990s of 0.12. If one then factors in the change in the democracy index of +10 during the 1990s there is additional increase in the probability of 0.10.

Columns three and four of table 3 replace the democracy variable with economic freedom. Again, because of the limited time period the number of observations is small. In these two regressions only the initial level of economic freedom is significant. The change in either specification is not significant.

The last columns of the table include both the democracy and economic freedom index. There are four observations that do not overlap between these two institutional measures. Therefore, the number of observations is even smaller. The level of economic freedom remains significant, but because of the small sample size the results are weak. There are 19 observations in the final regression and 8 independent variables, including the intercept. This translates into 11 degrees of freedom, which is small. This is why the time dummies are excluded in these final regressions. The inclusion of these dummies would decrease the degrees of freedom by 3.

These three tables indicate that both the level and change of democracy and economic freedom significantly contribute to an increased probability of crossing the $15,000 income threshold during the decade. The impact of economic freedom appears to be larger than democracy, but because of the limit number of observations the result is less robust.

5. A Lower Income Threshold

Eichengreen, Park, and Shin (2011) suggest a per capita income threshold of approximately $15,000 in 2005 constant PPP international dollars. Fatás and Mihov (2009) suggest a lower threshold closer to $12,000. This section uses the lower income threshold to reevaluate the regression results.

In table 4 the dependent variable is zero, but becomes one when a country's per capita income crosses the $12,000 threshold. Similar to the previous tables, a country that crosses the threshold is no longer included in the dataset in the following decades. The lower cutoff for inclusion in the analysis is $8,929. At this income level, a country with a three percent annual growth rate will cross the threshold in ten years. With this lower threshold the coefficient estimates of the impact of democracy are similar to the previous tables. In the first column a unit higher level of democracy at the end of the previous decade corresponds to a 0.03 increase in the probability of crossing the income threshold during the decade. The coefficient is significant at the one percent level. The second column uses the average level of democracy during the previous decade and the result is similar, but less significant. Here the coefficient is 0.02— similar to the earlier tables—and significant at the ten percent level.

Column three of the table replaces the democracy index with the economic freedom index. Again, because the economic freedom data span a smaller period there are much fewer observations. Here the level of economic freedom during the prior decade is insignificant. The final column of the table has similar results. The previous level of the democracy and economic freedom index is not significant.

Table 5 uses the lower threshold to examine the impact of changes in the democracy and economic freedom index on the probability of crossing the income threshold. In the first column the change in democracy is not significant, but the level at the end of the previous decade is significant at the one percent level. The result is similar to the previous tables. A unit higher level of the democracy index corresponds to a 0.03 increase in the probability of crossing the income threshold. The next two columns include the change in the economic freedom index. The coefficients for both the democracy and economic freedom index are insignificant. Like previous tables, there are much fewer observations when the economic freedom index is used.

Using the lower income threshold indicates that the results using the economic freedom index are less robust than the democracy index. The level of democracy significantly increased the probability of crossing the income threshold in almost all of the regressions. The regressions

with very few observations were the only exceptions. The impact of economic freedom with the lower threshold was insignificant. The small sample size and the insignificant results indicate that the impact of economic freedom is less robust.

6. Conclusion

The hypothesis that economic and political reforms facilitate a transition past the per capita income threshold of $15,000 is supported by these results. Countries that are more democratic have a higher probability of crossing the income threshold in a subsequent decade than countries that are less democratic. Movements toward democracy also appear to increase this probability by a similar amount. There is some evidence to suggest that higher economic freedom also increases the probability of crossing the income threshold. However, this result is less robust and less generalizable due to the limited amount of data.

There are important implications associated with this hypothesis. China and India are rapidly approaching the income threshold. China will reach this income threshold at the end of the current decade, before India. However, if this hypothesis is correct then Chinese growth will stagnate and India will have a higher probability of crossing the threshold and continuing the convergence process than China.

This research can also be extended in two ways. First, this analysis did not control for or exclude oil rich countries. Many of these countries are autocratic, yet have high per capita income. This high income level is a result of oil wealth and is generally not a reflection of the average income level of the typical citizen. Removing these countries from the analysis will most likely strengthen the impact of democracy and economic freedom. This indicates that the current estimates may be conservative. Second, additional analysis could also test the sensitivity of these results to criteria for inclusion in the analysis. Are the results affected if the number of countries included in the analysis is increased? Answers to these questions may indicate how countries such as China and India will progress in the decades ahead.

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Tables and Figures

Table 1: The impact of democracy on the probability of crossing the $15,000 per capita income threshold (pooled OLS), 1950-2010

Independent variable	Dependent variable: Binary indicating per capita income above $15,000			
	(1)	(2)	(3)	(4)
Democracy rating, prior decade	0.02 ***	0.02 ***		
	(0.01)	(0.01)		
Democracy rating, average during prior decade			0.02 ***	0.02 ***
			(0.01)	(0.01)
Tropical location (% area in tropics)	-0.28 ***	-0.21	-0.44 ***	-0.35 *
	(0.11)	(0.15)	(0.14)	(0.21)
Coastal population (% within 100km)	0.23 *	0.2	0.33 **	0.29
	(0.13)	(0.15)	(0.16)	(0.18)
Distance to major markets[a]	-0.02	-0.01	0.02	0.02
	(0.01)	(0.01)	(0.02)	(0.02)
Intercept	0.71 **	0.73 **	0.71 ***	0.72 **
	(0.30)	(0.33)	(0.28)	(0.31)
Region dummies	No	Yes	No	Yes
R^2 (adjusted)	0.57	0.56	0.57	0.56
No. of observations	70	70	50	50

Notes:

All regressions include time dummies.

[a] The minimum air distance in thousands of kilometers from a country to any one of the following major markets: New York, Tokyo, or Rotterdam

*,**, and*** indicate statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively. Heteroskedastic robust standard errors clustered by country are listed in parenthesis.

Table 2: The impact of economic freedom and democracy on the probability of crossing the $15,000 per capita income threshold (pooled OLS), 1950-2010

	Dependent variable: Binary indicating per capita income above $15,000			
Independent variable	(1)	(2)	(3)	(4)
Economic freedom, prior decade	0.29 ***	0.25 ***	0.32 ***	0.26 ***
	(0.04)	(0.02)	(0.07)	(0.04)
Democracy rating, prior decade			0.00	0.00
			(0.01)	(0.01)
Tropical location	-0.98 ***	-0.82 ***	-0.97 ***	-0.82 ***
(% area in tropics)	(0.11)	(0.10)	(0.13)	(0.11)
Coastal population	0.15	0.53 ***	0.14	0.51 ***
(% within 100km)	(0.12)	(0.15)	(0.12)	(0.16)
Distance to major markets[a]	0.16 ***	0.18 ***	0.18 ***	0.18 ***
	(0.03)	(0.03)	(0.05)	(0.04)
Intercept	-1.20 ***	-1.29 ***	-1.45 ***	-1.35 ***
	(0.36)	(0.23)	(0.52)	(0.33)
Time dummies	No	Yes	No	Yes
R^2 (adjusted)	0.75	0.86	0.74	0.83
No. of observations	23	23	20	20

Notes:

[a] The minimum air distance in thousands of kilometers from a country to any one of the following major markets: New York, Tokyo, or Rotterdam.

*,**, and*** indicate statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively. Heteroskedastic robust standard errors clustered by country are listed in parenthesis.

Table 3: The impact of changes in democracy and economic freedom on the probability of crossing the $15,000 per capita income threshold (pooled OLS), 1950-2010

Independent variable	Dependent variable: Binary indicating per capita income above $15,000					
	(1)	(2)	(3)	(4)	(5)	(6)
Democracy, 10 year change	0.00	0.01 **			0.00	-0.02
	(0.01)	(0.01)			(0.01)	(0.02)
Democracy rating, prior decade		0.02 ***				-0.03
		(0.01)				(0.01)
Economic freedom, 10 year change			-0.04	0.03	0.02	-0.12
			(0.15)	(0.04)	(0.14)	(0.09)
Economic freedom, prior decade				0.25 ***		0.32 ***
				(0.03)		(0.07)
Tropical location (% area in tropics)	-0.38 ***	-0.25 **	-0.32	-0.82 ***	-0.83 *	-0.84 ***
	(0.09)	(0.12)	(0.34)	(0.10)	(0.47)	(0.17)
Coastal population (% within 100km)	0.34 ***	0.20	0.83 ***	0.55 ***	0.34 *	0.80
	(0.13)	(0.14)	(0.28)	(0.16)	(0.18)	(0.11)
Distance to major markets[a]	-0.02	-0.01	0.07	0.18 ***	0.10	0.11
	(0.02)	(0.01)	(0.07)	(0.03)	(0.08)	(0.07)
Intercept	0.72 ***	0.67 **	0.19	-1.36 ***	0.59 ***	-1.04 ***
	(0.27)	(0.31)	(0.35)	(0.29)	(0.16)	(0.56)
Time dummies	Yes	Yes	Yes	Yes	No	No
R² (adjusted)	0.47	0.56	0.36	0.85	0.15	0.73
No. of observations	68	68	23	23	19	19

Notes:

[a] The minimum air distance in thousands of kilometers from a country to any one of the following major markets: New York, Tokyo, or Rotterdam.

*, **, and*** indicate statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively. Heteroskedastic robust standard errors clustered by country are listed in parenthesis.

Table 4: The impact of economic freedom and democracy on the probability of crossing the $12,000 per capita income threshold (pooled OLS), 1950-2010

Independent variable	Dependent variable: Binary indicating per capita income above $12,000			
	(1)	(2)	(3)	(4)
Democracy rating, prior decade	0.03 ***			-0.01
	(0.01)			(0.02)
Democracy rating, average during prior decade		0.02 *		
		(0.01)		
Economic freedom, prior decade			-0.11	-0.02
			(0.12)	(0.20)
Tropical location (% area in tropics)	-0.38 ***	-0.44 ***	-0.75 ***	-0.76 ***
	(0.15)	(0.17)	(0.19)	(0.19)
Coastal population (% within 100km)	0.05	0.04	0.13	0.12
	(0.12)	(0.16)	(0.21)	(0.23)
Distance to major markets[a]	-0.01	-0.02	-0.02	-0.04
	(0.02)	(0.04)	(0.05)	(0.07)
Intercept	0.99 ***	1.09 ***	2.00 ***	1.58
	(0.29)	(0.32)	(0.69)	(1.04)
R^2 (adjusted)	0.44	0.35	0.48	0.43
No. of observations	79	54	24	23

Notes:

All regressions include time dummies.

[a] The minimum air distance in thousands of kilometers from a country to any one of the following major markets: New York, Tokyo, or Rotterdam.

*,**, and*** indicate statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively. Heteroskedastic robust standard errors clustered by country are listed in parenthesis.

Table 5: The impact of changes in democracy and economic freedom on the probability of crossing the $12,000 per capita income threshold (pooled OLS), 1950-2010

Independent variable	Dependent variable: Binary indicating per capita income above $12,000		
	(1)	(2)	(3)
Democracy, 10 year change	0.02		-0.02
	(0.01)		(0.02)
Democracy rating, prior decade	0.03 ***		-0.02
	(0.01)		(0.02)
Economic freedom, 10 year change		0.16	0.17
		(0.14)	(0.16)
Economic freedom, prior decade		-0.05	0.01
		(0.12)	(0.21)
Tropical location (% area in tropics)	-0.34 **	-0.78 ***	-0.79 ***
	(0.15)	(0.15)	(0.18)
Coastal population (% within 100km)	0.02	0.07	0.01
	(0.13)	(0.21)	(0.27)
Distance to major markets[a]	-0.01	0.00	-0.02
	(0.02)	(0.04)	(0.06)
Intercept	0.96 ***	1.59 **	1.35
	(0.28)	(0.72)	(1.14)
R^2 (adjusted)	0.45	0.51	0.40
No. of observations	77	24	22

Notes:

All regressions include time dummies.

[a] The minimum air distance in thousands of kilometers from a country to any one of the following major markets: New York, Tokyo, or Rotterdam.

*,**, and*** indicate statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively. Heteroskedastic robust standard errors clustered by country are listed in parenthesis.