Chapter 2: Economic Freedom, Investment, and Growth

Since the time of Adam Smith, the topic of cross-country differences in income levels and growth rates has generated both extensive and heated debate. Many economists have argued that free economies—those that rely primarily on market arrangements—will outperform those that rely more extensively on government intervention and political direction. Is this proposition really true? The Economic Freedom of the World (EFW) index provides a measure of the extent to which various countries rely on open markets to allocate goods and resources. Thus, we are now in a better position than ever before to assess the relationship between economic freedom and material progress. We are also in a better position to analyze the ingredients of the growth process. This chapter will focus on these two topics.

Three Alternative Theories of Growth

The scholarly literature highlights the importance of three alternative theories of growth. First, the neoclassical theory, based primarily on the work of Robert Solow (1956), argues that growth is a result of expansion in the supply of productive inputs and improvements in technology. According to this theory, investment in physical and human capital is the key to economic growth.

Second, there is the geographic and locational theory largely popularized by Jeffrey Sachs and others (Sachs, 2001; Gallup, Sachs, and Mellinger, 1998; Diamond, 1997). According to this theory, climatic conditions and access to major markets are the primary determinants of growth. A hot tropical climate will both erode the energy level of workers and increase the risk of disabling and life-threatening diseases such as malaria. These conditions will reduce the productivity of workers and make business activity and investment less attractive. In contrast, locations near major markets and with access to ocean shipping make an area more attractive for the conduct of business. Thus, a tropical location will adversely affect

growth, while locations near major markets and ocean coastlines will enhance it.

Third, the institutional approach stresses the importance of creating an institutional and policy environment conducive for the smooth operation of markets and realization of gains from trade and entrepreneurial activities. The work of Douglass C. North (1990), Peter Bauer (1957, 1972), and Friedrich Hayek (1945, 1960) provides the foundation for the institutional theory. The recent writings of Barro (1996), Barro and Sala-i-Martin (1995), Scully (1988, 1992), Landes (1998), Knack (1996, 2003), DeSoto (1989), and Hall and Jones (1999) have also made a significant contribution to the institutional perspective.

These three explanations for growth are not logically inconsistent with each other, so all might play a role. Clearly, those who argue that economic freedom is a key ingredient in the growth process fall into the institutionalists' camp.

Why Will Economic Freedom Enhance Growth?

There are many reasons to expect that free economies will grow more rapidly than those that are less free. Here, we would like to highlight the importance of three of them.

Competition
Open markets—free entry into occupations and businesses—are an integral part of economic freedom. If business firms do not cater to the views of potential consumers and supply them with quality products at a low cost, they soon will be replaced by rivals who can provide customers with more value for their money.

Entrepreneurship
Freer economies provide greater opportunity for entrepreneurial discovery. Our modern living standards reflect the discovery of better ways of doing things—the development of new technology or the introduction of

new products or less expensive production methods. In recent decades, heart transplants, laser surgeries, miracle drugs, microwave ovens, CD and now DVD players, cellular phones, and personal computers have all dramatically changed the way we live and work. Innovations like these do not just happen. They have to be discovered and undertaken by someone and this often involves the co-operative efforts of numerous parties. We do not know where the next ingenious idea will come from. More than any other form of economic organization, a free market makes it possible for a wide range of people to try out their innovative ideas and see if they can pass the market test. If they do, they will improve living standards. On the other hand, if they fail the market test, they will soon be brought to a halt. This process of experimentation and discovery is a powerful force for economic progress.

Investment

Investors have a choice and economic theory indicates that private investment will tend to flow toward economic environments that are more attractive for productive activities. Free economies will attract more investment, which in turn will promote economic growth. On the other hand, high taxes, excessive regulation, biased enforcement of contracts, lack of legal recourse, insecure property rights, and monetary instability will deter both investment and growth.

Long-term Economic Freedom and Growth: The Empirical Evidence

In the final analysis, however, the relationship between free markets and prosperity is an empirical one. This section will seek to isolate the independent effects of economic freedom and differentiate them from other factors that may exert an impact on growth.[1] In particular, we will attempt to differentiate the effects of economic freedom from factors that reflect the neoclassical and geographic-locational theories.

When analyzing the linkage between economic freedom and growth, it is important to focus on a lengthy period of time. Even if economic freedom enhances growth, it will take time for higher levels of income to be achieved. Further, when only short time periods are considered, the linkage between economic freedom and growth may be weakened by other factors such as business cycles and changes in the world price of important import or export items. Moreover, credibility will influence the response to a policy change. Before decision-

makers will be willing to make major behavioral changes, they must be convinced that the change in policy direction is permanent rather than temporary. Thus, we will look at these relationships over lengthy time periods.

The analysis presented here will focus on the period from 1980 to 2000. All of the 94 countries for which the EFW summary and area ratings are available at five year intervals throughout these two decades will be included in the analysis (Gwartney and Lawson, 2003).[2] The data for per-capita GDP and investment are from the World Bank (2003). The data on human capital are from Baier, Dwyer, and Tamura (2003). Both the years of schooling per worker and demographic factors likely to influence the experience of persons in the work force are incorporated into this measure of human capital.[3]

Jeffery Sachs (2001) and his colleagues have often used a set of three variables to measure the importance of geographic-locational factors: (1) tropical location—percentage of a country's land area located in the tropics; (2) coastal population—the percentage of a nation's population living within 100 kilometers of an ocean coastline; (3) distance from major markets—the minimum air distance of a country from Rotterdam, New York, or Tokyo. These three measures were used in our analysis. Distance from major markets was never statistically significant in the work that follows and, therefore, it does not appear in the results presented below.

Economic Freedom and Growth

In the analysis that follows, comparisons will often be made among countries with average EFW ratings during the period from 1980 to 2000 of more than 7, between 5 and 7, and less than 5. In order to achieve an average rating of more than 7, a country would have had to register persistently high ratings throughout the two decades. In contrast, countries with an average EFW rating of less than 5 must have registered low ratings throughout most, if not all, of the period. Thus, the persistently free economies will dominate the top group (EFW rating greater than 7), while those that are persistently unfree will make up the bottom group (EFW rating less than 5). Of course, the middle group will fall between these two extremes.

From 1980 to 2000, the average annual growth rate of real GDP per capita of countries with an EFW rating of more than 7, was 2.81%, compared to 1.41% for the middle group and only 0.10% for the least free group. But these figures do not take into account other factors that might influence growth. Exhibit 2.1 shows the growth rate of GDP per capita from 1980 to 2000 for each of the three groups after adjustment for differences in initial

Exhibit 2.1: Economic Freedom and Growth of GDP per Capita, 1980–2000

Average annual growth rate of GDP per capita, 1980–2000, after adjusting for initial income, tropics and coastal location, and growth in human capital.

See Appendix Table 2.1 for details.
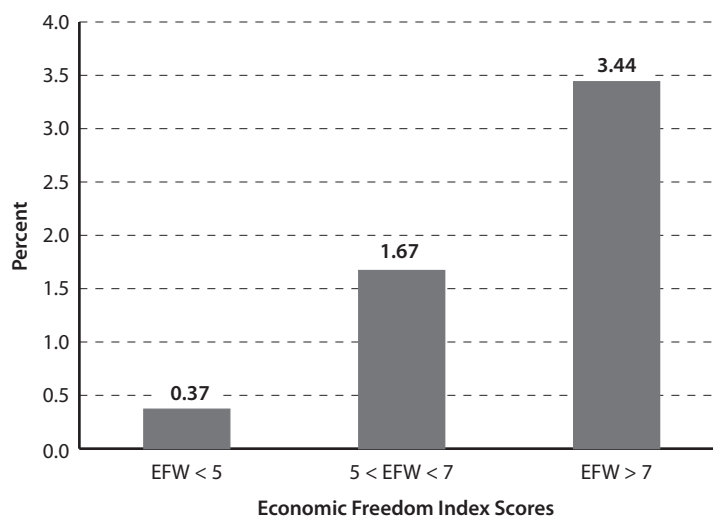
income level, tropical location, share of population near an ocean coastline, and human capital. Holding these factors constant, the persistently free group achieved an average annual growth rate of 3.44%, compared to 1.67% for the middle group and 0.37% for the least free group. (See Regression 1 in Appendix Table 2.1 for the analysis underlying these figures.)

Some might argue that the observed positive relationship between more economic freedom and a higher growth rate merely reflects the lumping together of less-developed countries (LDCs) with high-income, developed economies that tend to have higher economic freedom ratings. But this is not the case. In fact, when the high-income countries are omitted from the analysis, the differential growth rates between the persistently free (average EFW rating greater than 7) and the persistently unfree (average EFW rating less than 5) economies is even greater. The results for only LDCs are presented in Regression 2 of Appendix Table 2.1. After the effects of the other factors included in the model are taken into account, the persistently free LDCs grew at an annual rate of 5.21% during the two decades compared to 1.73% for the middle group and 0.55% for the least free group.
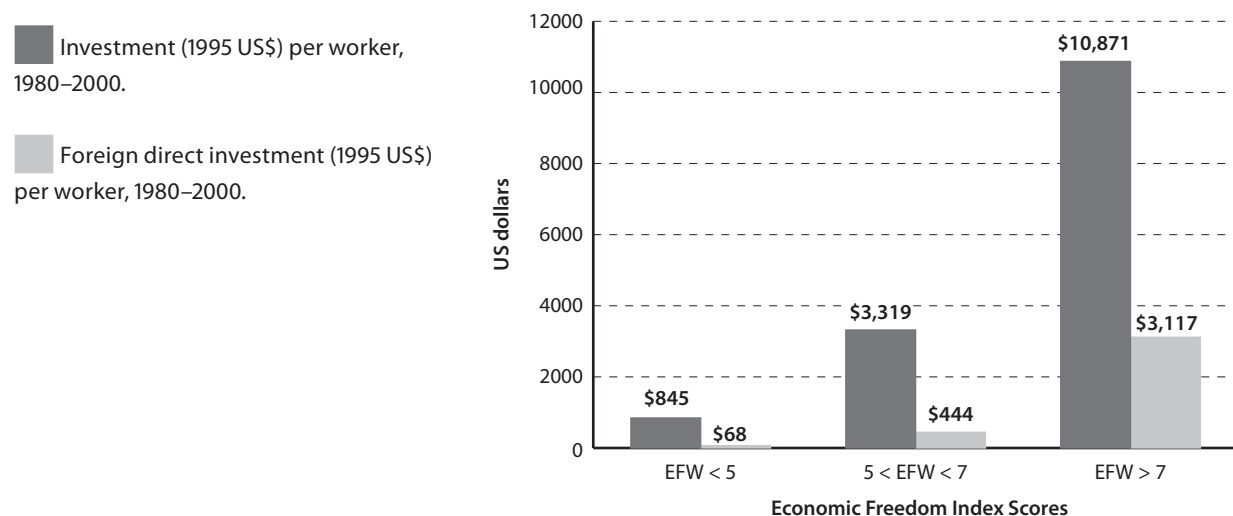
Economic Freedom and the Rate of Investment

Why have the persistently free economies grown more rapidly than their less free counterparts? Exhibits 2.2, 2.3, and 2.4 provide additional answers to this question. Investment is highly sensitive to the institutional environment. Countries that adopt institutions and follow policies more consistent with economic freedom have substantially higher investment rates than their less free counterparts. During the period from 1980 to 2000,

economies with EFW ratings of less than 5 attracted only $845 of investment per worker compared to $3,319 for those with EFW ratings between 5 and 7 and a whopping $10,871 for those with EFW ratings of more than 7. Thus, the investment rate per worker of the persistently free economies was more than 12 times the figure for the least free group.

Even though this total investment gap is huge, there is reason to believe that it understates the impact of economic freedom on private investment per worker. The total investment figures include investments undertaken by government agencies and enterprises. Such government investment activities will make up a larger share of total investment in economies that are less free. Foreign direct investment is mostly undertaken by private investors and therefore is a better indicator of how institutional quality influences the choices of private decision-makers. As Exhibit 2.2 shows, the average annual rate of foreign direct investment per worker in the persistently free economies was $3,117 compared to $444 for the middle group and only $68 for the least free group. Astonishingly, the foreign direct investment per worker of the persistently free economies was more than 45 times the figure for the persistently unfree group!

Exhibit 2.3 shows the impact of economic freedom on investment as a share of GDP. From 1980 to 2000, total investment averaged 22.78% of GDP in the persistently free economies but only 18.63% for the economies with low EFW ratings during the two decades. When only private investment is considered, the difference between the persistently free and the persistently unfree economies is even more striking. During the two decades, private investment averaged 18.02% of GDP in countries with EFW

Exhibit 2.2: Economic Freedom and Investment per Worker, 1980–2000

■ Investment (1995 US$) per worker, 1980–2000.

□ Foreign direct investment (1995 US$) per worker, 1980–2000.

Exhibit 2.3: Economic Freedom and Total and Private Investment as a Share of GDP, 1980–2000

■ Private investment (% of GDP), 1980–2000.

□ Total investment (% of GDP), 1980–2000.
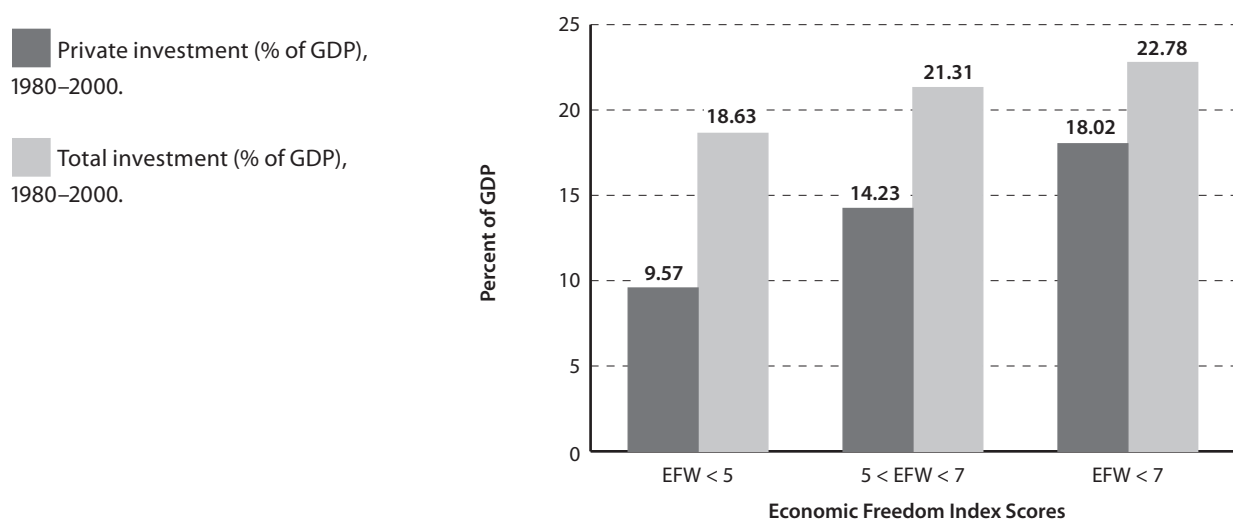
ratings of more than 7, but only 14.23% for the middle group and 9.57% for the least free group.[4] Thus, the rate of private investment in the economically free economies was almost twice that of the least economically free group. More detailed analysis indicates that the positive and significant relation between the EFW rating and investment as a share of GDP continues to hold even after the effects of other factors are taken into account.

This strong positive relationship between the EFW rating and investment sheds considerable light on both past research and the importance of institutions in the growth process. Following the lead of Solow, economists have often used a production-function approach to analyze growth. In production-function models, growth is the result of expansion in the availability of inputs (increases in the stock of physical and human capital) and

improvements in technology. If the impact of institutions and policies are considered at all, their estimated effects are almost always after the impact of physical capital has been taken into account. But our analysis indicates that the level of physical capital itself is positively influenced by the presence of institutions and policies more consistent with economic freedom. Because the production-function models have ignored the impact of institutions on investment, they have systematically underestimated the importance of institutional factors in promoting growth.

Economic Freedom and the Productivity of Investment

Economic freedom not only influences the rate of investment, it also influences its productivity. Exhibit 2.4 illustrates the impact of a percentage-point change in

private investment as a share of GDP on long-term economic growth for each of the three EFW-rating groups. Holding initial GDP per capita, tropical location, coastal population, change in human capital, and public investment constant, an increase of one percentage point in the ratio of private investment to GDP increased the growth of per-capita GDP during the period from 1980 to 2000 by 0.33 of a percentage point in countries with EFW ratings of more than 7. But in countries with EFW ratings between 5 and 7, an increase of one percentage point in the ratio of private investment to GDP enhanced growth by only 0.27 of a percentage point and in the least free group growth was enhanced by only 0.19 of a percentage point. Thus, the productivity of investment—the impact of a unit change in the ratio of private investment to GDP on growth in GDP—was more than 70% higher in the more free economies than for the group with the least economic freedom.

When only LDCs were considered, the figures were slightly different but the pattern was the same. For the group comprising only LDCs, a one percentage-point increase in the ratio of private investment to GDP enhanced the annual growth rate of real GDP by an estimated 0.35 of a percentage point in countries with EFW ratings of greater than 7. The comparable figures for the middle and the least free groups were 0.27 and 0.21, respectively. Thus, these estimates indicate that the impact of economic freedom on the productivity of investment was just as important for LDCs as for the combined group.

Interestingly, an increase of one percentage point in government investment as a share of GDP enhanced long-term growth by only 0.17 of a percentage point. This estimate was identical for both the combined group and that comprising only LDCs. Thus, the estimated productivity of government investment was even less than that for private investment in countries with little economic freedom. (See Appendix Table 2.2 for the regressions used to derive these estimates.)
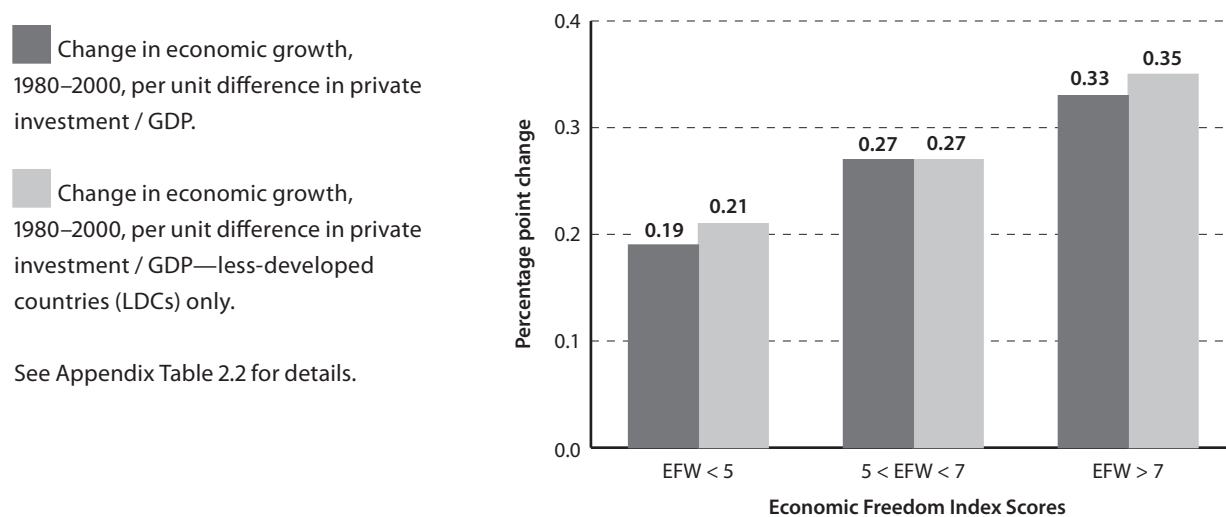
Changes in Economic Freedom and Growth

As Exhibit 2.1 illustrates, countries with persistently higher EFW ratings from 1980 to 2000 grew more rapidly. This indicates that differences in the level of economic freedom over lengthy periods of time exert a positive impact on long-term economic growth. What about changes in economic freedom? Did countries that moved toward greater economic freedom during the 1980s and 1990s achieve any payoff?

To address this question, we considered a regression model with the annual growth rate of GDP per capita as the dependent variable and initial (1980) EFW rating, and changes in EFW ratings during the 1980s and 1990s as independent variables. In order to control for other factors, initial GDP per capita, tropical location, coastal population, private investment as a share of GDP, government investment as a share of GDP, and change in human capital were also included in the regression model. (See Regression 1 of the Appendix Table 2.3.)

This straightforward model accounted for 58.5% of the variation in growth rates among countries from 1980 to 2000. With the exception of the share of population located near an ocean coastline, all of the control variables were significant and had the expected sign. The coefficient on the initial EFW rating was positive 1.00, in-

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Exhibit 2.4: Economic Freedom and the Productivity of Investment, 1980–2000

Change in economic growth, 1980–2000, per unit difference in private investment / GDP.

Change in economic growth, 1980–2000, per unit difference in private investment / GDP—less-developed countries (LDCs) only.

See Appendix Table 2.2 for details.

dicating that a one-unit increase in the initial level of economic freedom was associated with one percentage-point higher annual growth during the two decades. The coefficient on the change in the EFW rating during the 1980s was 1.28. This indicates that a one-unit improvement in the EFW rating during the 1980s was associated with a 1.28 percentage-point increase in the annual growth rate over the two decades. A one-unit increase in the EFW rating during the 1990s enhanced growth by an estimated 0.58 of a percentage point. Even after controlling for the other factors included in the model, both the level and changes in the EFW rating had a large positive and statistically significant impact on long-term growth.

Even though they are substantial, these estimates clearly understate the total impact of economic freedom on long-term growth. Private investment as a share of GDP is included as a control variable in this model. Thus, the estimated impact of the EFW variables on growth will be after the effects of cross-country differences in private investment have been taken into account. In essence, they will reflect only the direct effects of EFW variables—those operating through the productivity of resource use. They will fail to reflect the fact that, as we have already shown, cross-country differences in EFW ratings will also influence the rate of private investment.[5]

How can we capture the total impact of economic freedom including its impact through investment? One way of doing so would be to estimate the impact of economic freedom on private investment and then use the residuals from this equation (rather than the actual investment figures) as an independent variable in a model like that of Regression 1. Regressions 2 and 3 of Appendix Table 2.3 illustrate this approach. Regression 2 estimates the impact of the initial EFW level and changes in EFW ratings during the 1980s and 1990s on private investment as a share of GDP, holding tropical location and coastal population constant. This simple model accounts for more than half of the cross-country variation in the ratio between private investment and GDP during the period from 1980 to 2000. Confirming our earlier findings, economic freedom (both the initial level and changes during the 1980s and 1990s) has a strong positive impact on private investment as a share of GDP.

Regression 3 (Appendix Table 2.3) substitutes the residuals from Regression 2 for the Private Investment/ GDP variable. The logic for doing this is that the residuals from Regression 2 represent the variation across countries in private investment that is not correlated with EFW ratings; so, by using these residuals, the variation in private investment that is associated with cross-country differences in the EFW rating will be captured in the EFW coefficients. Thus, the EFW coefficients in Regression 3 will reflect both the direct effect of institutions via improvements in the efficiency of resource use and their indirect effect via the attraction of a higher level of investment. The coefficients for the EFW variables in Regression 3 indicate that a one-unit increase in the initial EFW rating enhances growth by 1.52 percentage points while a unit increase in the EFW rating during the 1980s or during the 1990s was associated with 1.90 and 0.82 percentage-point increases in long-term growth, respectively.

Exhibit 2.5 summarizes both the direct and indirect effects of economic freedom on long-term growth. Both the initial level and changes in economic freedom exert a

Exhibit 2.5: Economic Freedom and Changes in Economic Freedom and Economic Growth, 1980–2000

Estimated impact of a one-unit difference in the 1980 EFW rating on growth of GDP per capita, 1980–2000.

Estimated impact of a one-unit difference in EFW rating in the 1980s on growth of GDP per capita, 1980–2000.

Estimated impact of a one-unit difference in EFW rating in the 1990s on growth of GDP per capita, 1980–2000.

See Appendix Table 2.3 for details.
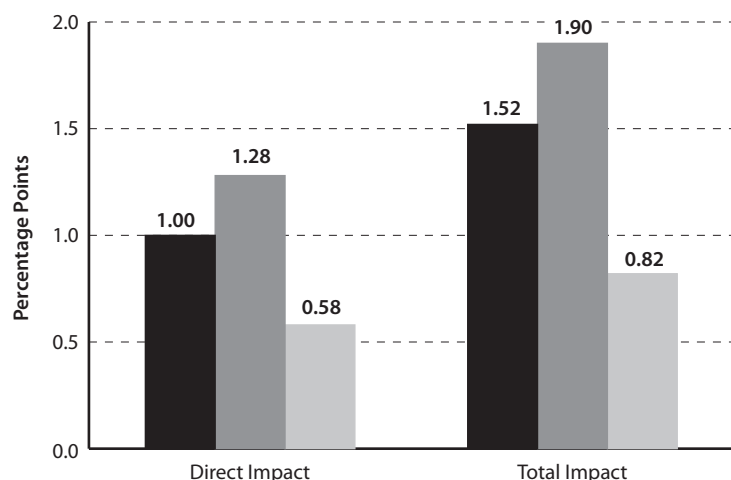
substantial impact on growth. The direct effect will reflect only the impact of economic freedom via its impact on the productivity of resource use. Our results indicate that an increase in a country's initial EFW rating enhanced growth from 1980 to 2000 by one percentage point and that an increase in the EFW rating during the 1980s enhanced growth by an additional 1.28 percentage points.

The total estimates will reflect the impact of economic freedom through both productivity increases and higher rates of investment. When the effects of economic freedom through investment are also included, a one-unit increase in the initial EFW rating enhances growth by an estimated 1.52 percentage points, while an increase in economic freedom during the 1980s pushes growth during the two decades upward by 1.90 percentage points. Note that the total estimates are nearly 50% greater than the direct estimates. Clearly, the omission of the investment effect results in a substantial understatement of the impact of economic freedom on long-term growth.

Direction of Causality: Does Rapid Growth Lead to More Economic Freedom?

Some have expressed concern that the observed correlation between the EFW variables and growth may, at least partially, reflect reverse causality. The proponents of this view suggest that rather than economic freedom causing growth, the relationship may reflect a tendency of rapidly growing economies to liberalize.

In order to investigate the validity of this view, we analyzed (a) the impact of changes in economic freedom on growth during the following decade and (b) the impact of growth on changes in economic freedom during the subsequent decade. As expected, we found that changes in economic freedom during the 1980s were associated with higher rates of economic growth during the 1990s. This was true both in a simple model and in a model with control variables for the initial EFW rating, change in the EFW rating during the 1990s, initial GDP per capita, tropical location, coastal population, investment, and changes in human capital. Thus, there was clearly a positive link between changes in economic freedom during the 1980s and growth of GDP per capita during the 1990s.

Within the framework of the same structural model, we then made the change in the EFW rating during the 1990s the dependent variable and inserted the growth rate of GDP per capita during the 1980s and 1990s as independent variables. Once again, there was a positive relationship between growth in GDP per capita and changes in economic freedom during the 1990s. However, to our surprise, there was a negative and significant relationship between changes in GDP per capita during the 1980s and changes in the EFW rating during the 1990s. This implies that countries with lower GDP growth rates during the 1980s had larger increases in economic freedom during the 1990s.[6]

These results are noteworthy for two reasons. First, they directly address the causality issue and show that, while increases in economic freedom lead to more growth in the future, higher growth rates do not enhance future improvements in EFW ratings. Put another way, the evidence indicates that increases in economic freedom enhance growth, but there is no evidence that stronger growth leads to higher EFW ratings. Second, they indicate that poor economic performance often creates a fruitful environment for constructive institutional change. A crisis situation is more likely to result in movements toward economic freedom than solid economic performance. These results are consistent with the findings of Pitlik and Wirth (2003).

Long-term Economic Freedom and Income

There is a strong positive relationship between economic freedom at a point in time—for example, in the year 2000—and GDP per capita. In order to illustrate this relationship, we have sometimes grouped countries by quintiles (arrayed from low to high) based on EFW ratings during a specific year and noted that as one moved to higher quintiles of EFW ratings, the average GDP per capita of countries increased. Others have also highlighted this relationship.

It is important not to deceive ourselves or mislead others with regard to why this relationship is present. It does not suggest that countries moving from the least free EFW quintile to the most free quintile will quickly achieve a GDP per capita much like the countries in the most free grouping. Instead, the relationship between current economic freedom ratings and GDP per capita reflects that institutional change typically takes place gradually. Most of the countries with high current EFW ratings have had persistently high ratings over a lengthy period of time and, as a result, they have grown rapidly and achieved high levels of income. Similarly, most of the countries with low current ratings have also had persistently low ratings for some time. The linkage between current economic freedom and GDP per capita reflects the fact that the current EFW rating is, to a degree, a proxy for the historic consistency of institutions with economic freedom. But it is the historic (or long-term) value of economic freedom rather than the current value that is most important as a determinant of GDP per capita.

Thus, if we want to isolate fully the impact of economic freedom on GDP per capita, we should investigate the relationship between long-term institutional quality and current GDP per capita. Using the average EFW rating during the period from 1980 to 2000 as the measure of long-term institutional quality, Exhibit 2.6 presents data on this relationship. A close relationship between long-term economic freedom and GDP per capita in 2000 is clearly visible. The R^2 of the simple regression with 2000 GDP per capita as the dependant variable and the square of the EFW rating as the independent variable indicates that economic freedom alone explains 64% of the cross-country variations in GDP per capita among the 94 countries of this study. (Note that the square of the EFW rating has more explanatory power than the linear value because increases in long-term economic freedom lead to more than proportional increases in GDP per capita.)

Appendix Table 2.4 presents additional regressions incorporating the variables, tropical location and coastal population, into the model. The coastal variable was insignificant and, therefore, was dropped from the final specification. As Regression 3 in Appendix Table 2.4 shows, the average EFW rating from 1980 to 2000 and tropical location account for 71.8% of the cross-country variation in GDP per capita. This is a remarkably high explanatory power for two variables, neither of which are inputs in the production process. These results certainly indicate that maintenance of institutions and policies consistent with economic freedom over a lengthy time period is an important determinant of GDP per capita.[7]

Can a Country Prosper without a Sound Legal Structure?

In many ways, a market economy is like a telephone or Internet system. In the case of these network goods, value to the individual users increases as more people have telephones or Internet hookups. Markets have this same characteristic—the more people integrated into the system, the greater the benefits to each participant. The market network generates almost unbelievable benefits as the result of gains from trade, specialization, expansion in the size of the market, and the application of mass production techniques.

Most of the consumption goods enjoyed by households in North America, western Europe, and other parts of the developed world result from what Douglass C. North calls "depersonalized exchange," that is, trade between parties who do not know each other and will probably never meet. These exchanges are coordinated by what Friedrich Hayek refers to as the "extension of the market" from the local town or village to the region, nation, and, indeed, to the far corners of the world. Without these gains from the market network, high levels of income per capita and modern living standards would be impossible.

However, the enormous benefits of the market network cannot be achieved without a sound legal system. People who live in countries where property rights are insecure, contracts poorly enforced, and legal and regulatory verdicts auctioned off to the highest bidder

Exhibit 2.6: Economic Freedom, 1980–2000, and GDP per Capita, 2000

Y = −10771 + 645(X)

R^2 = 64.0

See appendix Table 2.4 for details.
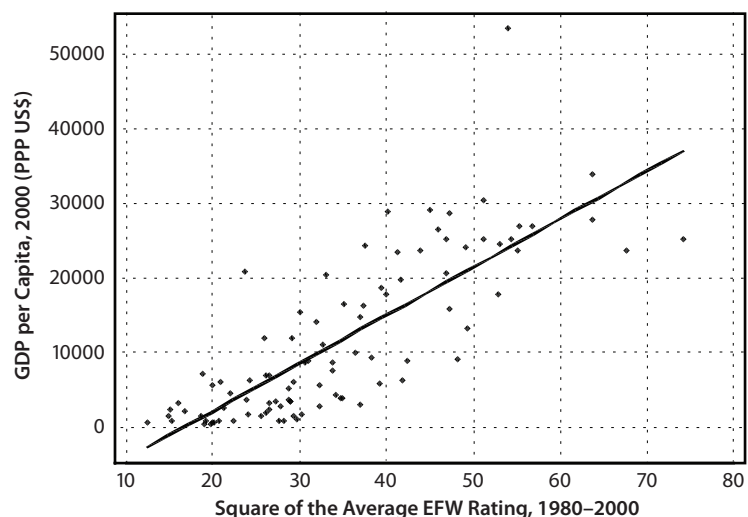
will not be integrated into the worldwide market network. Without rule of law, the benefits from trade will be limited to those derived from personalized exchange, trade among family members and persons in the local neighborhood or village who know each other or, at least, know about each other. Here, trade is based on personal knowledge and contract enforcement is achieved through family ties and social pressures. However, the benefits derived from personalized exchange will be small compared to those available through a depersonalized market network based on enforceable contracts and rule of law.

The empirical evidence is consistent with this view. Area 2: Legal Structure and Security of Property Rights of the EFW index indicates the consistency of a nation's legal structure with the protection of property rights, unbiased enforcement of contracts, independence of the judiciary, and rule of law. Among the approximately 100 countries for which data were available throughout the period from 1980 to 2000, 24 countries had an average rating for Area 2 of 7 or higher. Exhibit 2.7a shows that these 24 countries had an average GDP per capita in 2000 of $25,716 and an average annual real growth rate of 2.5% over the two-decade period. The lowest per-capita income among these 24 countries was approximately $12,000. Perhaps even more important, all 24 of the countries with sound legal systems achieved positive real growth of GDP per capita over the two decades.

At the other end of the spectrum, there were 21 countries with an average rating of less than 4 for Area 2 during the period from 1980 to 2000. Exhibit 2.7b indicates the income levels and growth rates of these countries. Their average GDP per capita in 2000 was $3,094 and their growth rates averaged 0.33% over the two decades. Both of these figures were approximately one-eighth of the comparable levels for the countries with

Exhibit 2.7a: The Legal System and Income and Growth—Countries with Average Rating from 1980 to 2000 for "Area 2: Legal Structure and Security of Property Rights" Greater than 7.0

Countries with average legal rating > 7.0 from 1980 to 2000	Legal System Rating	GDP per Capita 2000 (PPP US$)	Growth of GDP per Capita from 1980 to 2000 (%)
Switzerland	8.65	27,780	0.82
United States	8.61	33,960	2.12
Netherlands	8.58	26,910	1.98
New Zealand	8.51	17,840	1.29
Austria	8.49	26,420	1.99
Luxembourg	8.45	53,410	4.26
Denmark	8.41	28,680	1.74
Finland	8.36	24,160	2.27
Germany	8.36	25,100	1.70
Canada	8.32	26,840	1.69
Norway	8.31	29,200	2.42
Australia	8.29	24,550	1.96
Iceland	8.08	28,910	1.67
Sweden	8.05	23,650	1.66
Belgium	7.97	25,220	1.91
United Kingdom	7.91	23,580	2.29
Ireland	7.91	30,380	4.91
Singapore	7.89	23,700	4.92
Japan	7.84	25,280	2.34
Portugal	7.50	17,710	2.91
France	7.48	23,490	1.72
Hungary	7.16	11,960	1.31
Hong Kong	7.16	25,180	4.07
Taiwan	7.03	13,279	6.00
Average	**8.05**	**25,716**	**2.50**

Exhibit 2.7b: The Legal System and Income and Growth—Countries with Average Rating from 1980 to 2000 for "Area 2: Legal Structure and Security of Property Rights" Less than 4.0

Countries with average legal rating < 4.0 from 1980 to 2000	Legal System Rating	GDP per Capita 2000 (PPP US$)	Growth of GDP per Capita from 1980 to 2000 (%)
Indonesia	3.90	2,970	3.69
Senegal	3.84	1,450	0.57
Sri Lanka	3.67	3,400	3.49
Pakistan	3.66	1,870	2.46
Honduras	3.62	2,830	−0.13
Syria	3.56	3,280	0.64
Iran	3.55	5,720	1.09
Nicaragua	3.54	2,450	−2.26
Peru	3.52	4,630	−0.24
Philippines	3.49	3,790	−0.02
Algeria	3.47	6,150	−0.20
Colombia	3.43	7,010	1.04
Uganda	3.42	1,450	2.23
Nigeria	3.34	860	−0.93
El Salvador	3.27	5,240	0.57
Congo, Rep. of	3.27	950	0.37
Bolivia	3.20	2,310	−0.28
Bangladesh	3.19	1,540	2.57
Guatemala	3.02	4,430	−0.08
Haiti	2.98	1,920	−2.39
Congo, Dem. R.	2.38	730	−5.31
Average	**3.40**	**3,094**	**0.33**

sound legal systems. Among the 21 countries with a low-quality legal system, Columbia had the highest GDP per capita in 2000, $7,010. None of these 21 countries was able to achieve both a 2000 income per capita of more than $3,400 and a growth rate from 1980 to 2000 of more than 1.1%. Thus, none of the countries with unsound legal systems were able to sustain a solid rate of growth once income levels rose above the $3,400 range!

The gains derived from depersonalized exchange and expansion in the size of the market provide the underpinnings for our modern living standards and a sound legal system is essential for the realization of these gains. Without a legal system capable of enforcing contracts and protecting property rights, trade will occur mostly among parties who know each other and it will cover only a relatively small geographic or market area. The gains from depersonalized trade and expansion in the size of the market will continue to go unrealized. But, without the realization of these potential gains, it will be virtually impossible for countries to move up to even lower-middle income status. Tragically, they will continue to stagnate at relatively low levels of income.

Do Poor Countries Grow when They Have Economic Freedom?

Exhibit 2.8 presents income, growth, and investment figures for the ten countries with the highest EFW ratings during the period from 1980 to 2000 among the countries not classified as "high income industrial" economies in 1980. Even the wealthiest among these countries in 1980 had an income per capita that was less than half that of countries like the United States, Germany, and Switzerland. But these countries persistently had higher economic freedom ratings from 1980 to 2000 than other low- and middle-income economies.

Over the two decades, the annual growth of GDP per capita of these countries ranged from Spain's 2.4% to Taiwan's 6.0%. The average annual growth rate of these countries was 4.2%, compared to 1.0% for the other countries in our data set. The ten freest economies among those with low incomes in 1980 grew more than four times the average of the other countries. They also had higher investment rates. The ten relatively free economies

Exhibit 2.8: Growth and Investment in Countries with Low Levels of Income in 1980 and High Levels of Economic Freedom from 1980 to 2000

	Mean Summary Index, 1980–2000 (chain-linked method)	GDP per Capita, 1980 (real PPP US$)	GDP per Capita, 2000 (real PPP US$)	Average Annual Growth Rate of GDP per Capita, 1980–2000 (%)	Mean Investment as a Share of GDP, 1980–2000 (%)
Hong Kong	8.60	12,970	25,153	4.2	28.8
Singapore	8.26	11,060	23,356	5.0	38.6
Ireland	7.17	10,918	29,866	4.7	20.3
Taiwan	6.97	4,101	13,279	6.0	24.5
Malaysia	6.93	4,497	9,068	3.9	31.5
Chile	6.46	5,114	9,417	3.8	21.8
Spain	6.44	12,939	19,472	2.4	23.3
Thailand	6.40	2,759	6,402	4.7	32.3
Portugal	6.37	10,948	17,290	2.9	26.8
Mauritius	6.36	4,492	10,017	3.9	26.0

Source: World Bank, World Development Indicators 2003.

invested 27.3% of their GDP, compared to 21% for other economies. Thus, when low-income countries adopt and maintain policies and institutions consistent with economic freedom, they are able to attract more investment and achieve substantially higher growth rates than other economies.

Most historians place the growth of income per capita of the United States and the United Kingdom at approximately 1% throughout the 19th-century. More recently, the GDP per capita of the United States has grown at an annual rate of approximately 2% since World War II. Per-capita income growth rates of more than 2% annually over lengthy time periods were virtually unheard of prior to 1960. Thus, when viewed from an historical perspective, the growth rates of these low-income but relatively free economies are remarkable.

Conclusion

The findings presented here indicate that adoption and maintenance of institutions and policies consistent with economic freedom are vitally important for the achievement of prosperity. Countries with more economic freedom attract more investment and achieve greater productivity from their resources. As a result, they grow more rapidly and achieve higher income levels. In contrast, countries stagnate when their institutions stifle trade and erode the incentive to engage in productive activities. Provision of institutions supportive of economic freedom is the key to the growth process. Countries with low initial levels of income, in particular, are able to grow rapidly and move up the income ladder when their policies are supportive of economic freedom.

Appendix: Regression Analyses

Appendix Table 2.1: Economic Freedom and Growth of GDP per Capita, 1980–2000

Dependent Variable: Average Annual Growth Rate of GDP Per Capita, 1980-2000

	Regression 1 All Countries	Regression 2 Less-Developed Countries
	(t-ratio in parentheses)	
GDP Per Capita, 1980 (in 1000s US$)	−0.21 (2.70)	−0.30 (2.21)
Average EFW Rating, 1980-2000 (1 if > 7)	3.44 (3.32)	5.21 (3.33)
Average EFW Rating, 1980-2000 (1 if > 5 and < 7)	1.67 (2.18)	1.73 (2.03)
Average EFW Rating, 1980-2000 (1 if < 5)	0.37 (0.47)	0.55 (0.63)
Tropical Location	−1.80 (3.81)	−2.08 (3.88)
Coastal Population	1.18 (2.12)	1.54 (2.08)
Growth of Human Capital, 1980-1999	0.66 (2.19)	0.69 (2.02
Intercept	n. a.	n. a.
R² (adjusted)	30.2	34.7
Number of Countries	85	66

(Left margin label: **Independent Variables**)

Note: R^2 computed from regression in which the intercept was included and one of the EFW dummy variables was omitted.

Appendix Table 2.2: Economic Freedom and the Productivity of Investment, 1980–2000

Dependent Variable: Average Annual Growth Rate of GDP Per Capita, 1980-2000

Independent Variables	Regression 1 All Countries	Regression 2 Less-Developed Countries
	(t-ratio in parentheses)	
GDP Per Capita, 1980 (in 1000s US$)	−0.20 (3.16)	−0.32 (2.85)
Tropical Location	−1.61 (4.15)	−1.70 (3.83)
Coastal Population	0.13 (0.27)	0.43 (0.65)
Private Investment/GDP, 1980–2000 (EFW >7)	0.33 (7.36)	0.35 (6.41)
Private Investment/GDP, 1980–2000 (5 < EFW > 7)	0.27 (6.13)	0.27 (5.57)
Private Investment/GDP, 1980–2000 (EFW < 5)	0.19 (3.21)	0.21 (3.13)
Public Investment/GDP	0.17 (3.09)	0.17 (2.85)
Growth of Human Capital, 1980–1999	0.43 (1.72)	0.51 (1.81)
Intercept	−2.47	−2.60
R^2 (adjusted)	54.9	58.5
Number of Countries	85	66

Appendix Table 2.3: Economic Freedom, Investment, and Growth, 1980–2000

Independent Variables	Regression 1 Dependent Variable: Average Annual Growth Rate of GDP per Capita, 1980–2000	Regression 2 Dependent Variable: Private Investment/GDP, 1980–2000	Regression 3 Dependent Variable: Average Annual Growth Rate of GDP per Capita, 1980–2000
		(t-ratio in parentheses)	
GDP Per Capita, 1980 (in 1000s US$)	−0.29		−0.29
	(3.98)		(3.98)
EFW Rating, 1980	1.00	2.59	1.52
	(3.50)	(6.41)	(6.02)
Change in EFW Rating, 1980-1990	1.28	3.06	1.90
	(3.68)	(4.64)	(5.95)
Change in EFW Rating, 1990-2000	0.58	1.15	0.82
	(2.27)	(2.19)	(3.25)
Tropical Location	−1.50	0.33	−1.43
	(3.92)	(0.42)	(3.74)
Coastal Population	−0.11	2.82	0.46
	(0.23)	(2.78)	(1.03)
Private Investment/GDP, 1980-2000	0.20		0.20*
	(4.30)		(4.30)
Public Investment/GDP, 1980-2000	0.17		0.17
	(3.22)		(3.22)
Growth of Human Capital, 1980-1999	0.43		0.43
	(1.82)		(1.82)
Intercept	−7.48	−3.96	−8.28
R² (adjusted)	58.5	52.5	58.5
Number of Countries	85	94	85

Notes: *Residual values from Regression (2).

Appendix Table 2.4: Economic Freedom and Income, 1980–2000

Dependent Variable: GDP per Capita, 2000 (PPP US$)

		Regression 1	Regression 2 (t-ratio in parentheses)	Regression 3
Independent Variables	**Average EFW Rating, 1980–2000 (Squared)**	645 (12.66)	554 (10.84)	554 (11.61)
	Tropical Location		−7,078 (5.37)	−7,078 (5.40)
	Coastal Population		30 (0.02)	
	Intercept	−10,771	−4,072	−4,066
	R² (adjusted)	63.5	71.4	71.8
	Number of Countries	94	94	94

Notes

1 Other researchers have used data from the EFW index to analyze the relationship between economic freedom and growth (see, for example, Dawson, 1998; Easton and Walker, 1997; De Haan and Sturm, 2000; Cole, 2003). For additional background and analysis of the relationship between EFW ratings and cross-country differences in income levels, growth rates, and other indicators of economic performance, see the review article of Berggren (2003).

2 Data from the EFW chain-linked summary index are used throughout because these data are more reliable when making comparisons across time periods.

3 These data were unavailable for nine of the countries in our data set and, therefore, several of the equations presented below will have 85 rather than 94 observations.

4 In cases where information for private investment was unavailable, the private share of total investment was estimated based on information on state-owned enterprises from Component 1C of the EFW index.

5 In contrast with the physical capital investment rate, EFW rate (and changes in EFW rate) and changes in human capital were unrelated. Thus, there is no evidence that economic freedom exerts an indirect impact on growth through investment in human capital.

6 Nicaragua, Argentina, Ghana, Uganda, Bolivia, Peru, and El Salvador provide examples of countries with an exceedingly poor economic record (i.e., falling GDP per capita) during the 1980s that experienced substantial increases, albeit from low levels, in economic freedom during the 1990s.

7 Some researchers have sought to isolate the importance of institutions on income levels through the use of instrumental variables as proxies for cross-country differences in institutional quality. The mortality rates of colonial settlers and percentage of the population speaking English and other European languages are among the proxies used for institutional quality. This research has found that these proxies are correlated with current levels of GDP per capita. For additional details, see Hall and Jones (1999) and Acemoglu, Johnson, and Robinson (2001). While these findings are interesting, we do not believe that this methodology is as fruitful as the more direct approach taken here.

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