

Senior Seminar on The Wealth and Well-Being of Nations:

Each year, seniors in the department of economics participate in a semester-long course that is built around the ideas and influence of that year's Upton Scholar. By the time the Upton Scholar arrives in October, students will have read several of his or her books and research by other scholars that has been influenced by these writings. This advanced preparation provides students the rare opportunity to engage with a leading intellectual figure on a substantive and scholarly level.

Endowed Student Internship Awards:

A portion of the Miller Upton Memorial Endowments supports exceptional students pursuing high-impact internship experiences. Students are encouraged to pursue internships with for-profit firms and non-profit research organizations dedicated to advancing the wealth and well-being of nations.

Charles G. Koch Student Research Colloquium and Speaker Series:

With generous support from the Charles G. Koch Charitable Foundation, the department has initiated a research colloquium that gives students the opportunity to read and discuss seminal articles aimed at deepening their understanding of the market process. Students also develop original analysis that applies economic ideas to novel contexts. Colloquium participants receive close mentoring as they craft an article with the eventual goal of publication in a newspaper, magazine, or academic journal. The themes of the research colloquium and annual forum are supported with a speaker series featuring the next generation of scholars working on questions central to our understanding of the nature and causes of wealth and well-being.

Annual Proceedings of The Wealth and Well-Being of Nations:

The keynote address presented by the Upton Scholar is an important contribution to the public discourse on the nature and causes of wealth and well-being. Further, the annual forum includes presentations by noted scholars who expand upon or challenge the work of the Upton Scholar. These presentations are assembled in the *Annual Proceedings of the Wealth and Well-Being of Nations*, which serves as an important intellectual resource for students, alumni, and leaders within higher education.

THE ANNUAL
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BEING OF NATIONS

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Introduction

Joshua C. Hall¹

As a former holder of the Elbert H. Neese, Jr. Professorship in Economics, it is my privilege to introduce the sixth *Annual Proceedings of the Wealth and Well-Being of Nations*.

Under the banner of the Miller Upton Programs, The Department of Economics at Beloit College has developed an ambitious initiative to advance understanding of the ideas and institutions necessary for widespread prosperity and human development. The centerpiece of these programs is the annual Wealth and Well-Being of Nations: a Forum in Honor of Miller Upton. Every year, the Upton Forum brings to Beloit College a distinguished, internationally recognized scholar who works within the classical liberal tradition. The Upton Scholar engages with students, faculty, alumni, and civic leaders in an informed dialogue around the nature and causes of wealth and well-being.

In addition to the Upton Scholar, the Forum features leading scholars whose work complements the work of that year's Upton Scholar. This cadre of scholars is assembled to demonstrate that the intellectual enterprise of understanding the nature and causes of wealth and well-being is an ongoing project. The essays collected in this volume capture in written form many of the ideas exchanged, challenges posed, and questions considered during the Upton Forum and over the course of the academic year.

Before introducing the Upton Scholar and the substance of the contributions made within this volume, let me say a few words about the man for whom the forum is named. R. Miller Upton was the sixth President of Beloit College, serving

¹ Joshua Hall is currently an Associate Professor of Economics at West Virginia University. From 2007 to 2013, he was an Assistant Professor of Economics at Beloit College. He will forever be grateful to his friends and colleagues at Beloit for all they have taught him and for giving him the opportunity to finish what he started by overseeing the 2013 Upton Forum and Proceedings.

from 1954-1975. A nationally recognized leader in higher education, President Upton had two passions. First, he believed that small residential liberal arts colleges were the ideal places to engage with “great questions” because at places like Beloit College students are expected to acquire the intellectual habits necessary for critical thinking and civil discourse. Second, he believed in the ideals of a liberal society: political freedom, the rule of law, and peace and prosperity through the voluntary exchange of goods and ideas. For President Upton, the critical and open discourse fostered by liberal education was crucial to building and maintaining liberal democracy. Liberal education was crucial to developing a free and responsible citizenry.

Consider the following quote from President Upton’s inaugural address:

In short, does the education have as its prime objective the development of the individual intellect to the point that the student is enabled to become a responsible and secure person, free in thought, free in attitudes, and free in day-to-day living.

In this connection, I would like to digress a bit to argue strongly against the notion that we can enumerate our freedoms in the same manner that we name our children. There are not four freedoms, nor six, nor twenty, nor a hundred. There is only the one basic concept of individual freedom -- that divine right and opportunity -- given to every man to develop his own innate potential to the highest while accepting voluntarily his own social responsibilities. The right and the privilege are necessarily forfeited when the individual fails to accept the inherent responsibilities to himself and his society. And, education either formally conducted or informally gained, is the only means by which the individual can ever be lifted to a point of awareness and understanding which will assure acceptance of such responsibility. Having once attained this level of personal freedoms an individual will at one and the same time be free from fear, free from hunger, free from oppression, free from all of the superficial frailties of man and the hardships imposed, by our physical environment.

The Miller Upton Forum reflects and honors the two passions of President Upton that are so apparent in that quote. It does so by bringing to Beloit an internationally recognized scholar whose work falls within the classical liberal tradition. In 2013, that scholar was Professor James Gwartney.

*Measuring Economic Freedom and Explaining
its Importance to Well-Being*

Professor Gwartney is the Gus A. Stavros Eminent Scholar Chair at Florida State University, where he directs the Stavros Center for the Advancement of Free Enterprise and Economic Education. He earned his Ph.D. at the University of Washington, where he had the opportunity to study with Nobel Laureate Douglas North, the inaugural Upton Scholar at Beloit College.

While Professor Gwartney's ties to Professor North show the common thread running through the Upton Scholars, Jim's contributions to our understanding of the wealth and well-being of nations stands on its own. A primary research focus of his career has been the measurement and determination of factors that influence cross-country differences in income levels and growth rates. Along with Robert Lawson of Southern Methodist University and myself, he is an author and guiding light on the *Economic Freedom of the World* (EFW) annual report, which provides information on the institutions and policies of 152 countries (Gwartney et al., 2014). This data set, published by a network of institutes in several dozen countries worldwide, has been used by scholars to study the relationship between economic freedom and a wide range of phenomena ranging from economic growth (Easton and Walker, 1997; Gwartney et al., 1999; Gwartney et al., 2004; De Haan et al., 2006; Hall et al. 2010; Rode and Coll, 2012) to beauty pageant success (Lawson and Ross, 2010). For the reader interested in learning more, Hall and Lawson (2014) summarize the wide variety of scholarship that has been produced using the EFW over the past two decades.

In addition to his work on economic freedom, Professor Gwartney is one of the country's foremost economic educators. He is co-author of the popular principles of economics textbook *Economics: Private and Public Choice*, now in its 14th edition (Gwartney et al., 2014). During Upton Week, Beloit students had the opportunity to observe his teaching skills first hand, as he guest lectured in numerous classrooms across the College.

While these two areas would be a lifetime of work for an above average academic, Professor Gwartney has also contributed in two additional areas. Early in his academic career the focus of his research was on the economics of discrimination (Gwartney, 1970; Gwartney and Haworth, 1974; Haworth et al., 1975). Professor Gwartney contributed to this literature at the very highest levels of the

economics profession, with his work appearing in *The American Economic Review* and *The Journal of Political Economy*. Beginning in the 1980s and continuing throughout the remainder of his career, he also contributed to our understanding of the effects of tax policy on labor supply and economic growth (Gwartney and Stroup, 1983; Gwartney and Lawson, 2006).

New Questions Pursued in this Volume

In his keynote address offered as the first essay in this volume, Gwartney begins by providing a brief history of the origins of the EFW index. He then turns his attention towards explaining what economic freedom is and what it is not. The reader is provided with most recent economic freedom ratings for a number of countries so that they see the wide variation in economic freedom across the globe. Gwartney then discusses the role that the EFW has played in helping to turn economics away from simplistic input-output models and more towards institutions as being crucial for growth. The core of his paper is five important findings from nearly two decades of researching using the EFW.

The remainder of this proceedings volume features scholars working on themes prominent in Gwartney's work. In "Freedom as Development: Reflections on James Gwartney's Contributions to Measuring Institutions," **Robert Lawson** provides a helpful overview of the empirical literature using the EFW index. In addition, he highlights his own important work in measuring aspects of economic freedom such as the freedom to travel. The most salient point for Professor Gwartney's legacy, however, is his discussion of the importance of measuring things and measuring them well.

In "The Soft Side of Economic Freedom," **Niclas Berggren** highlights how the EFW index has been helpful to better understanding the world beyond economic growth. While important, economic growth is not everything. There are other societal outcomes that people might desire but which cannot be purchased in a store. Berggren argues that his scholarship on income inequality, social trust, and tolerance shows the 'soft side' of economic freedom. In addition to clearly summarizing his important scholarship in this area, Berggren's discussion of his work and the work of others is a model of how a true scholar responds to work at odds with one's own.

“Freedom and Economic Education: Jim Gwartney at the Crossroads” by **J.R. Clark** shows how Professor Gwartney’s scholarship in measuring institutions and his efforts at improving economic education are related. In recounting his own history with Professor Gwartney and his subsequent scholarship on economic freedom and economic education, Clark reveals himself to also be at the same crossroads. In his research described in the article, the reader will hear about Clark’s important scholarship on how economics is taught in Advanced Placement courses in addition to his own empirical work showing economic freedom to be positively related to growth, entrepreneurship, and migration. Close readers of Gwartney’s introductory text will also find familiar Clark’s discussion of his work with Dwight Lee on secondary effects, showing how good economic education and good economic scholarship are often intertwined.

The next two essays in the proceedings presented important original scholarship on economic freedom. **Claudia Williamson** and **Rachel Coyne** updated their previous work on culture, economic freedom, and growth in their essay “Culture and Freedom.” They demonstrate empirically that informal institutions, such as a culture of economic liberty, are positively related to economic growth. Formal institutions of economic freedom such as the rule of law and enforcement of contracts are important as well, but need to be built upon a strong culture in order to be most helpful in letting people realize the gains from exchange. In “The Geography of Economic Freedom,” **Matthew Brown** presents his original scholarship on an important determinant of economic freedom – geography. Using the EFW index and different and different geographic measures of a country’s shape and location, Brown finds a statistically significant relationship between how easy it is to exit a country and its economic freedom. Brown’s work is an important addition to a growing body of scholarship on the determinants of economic freedom (Crampton, 2002; DeHaan and Strum, 2003; Carden and Lawson, 2010; Hall et al., 2011; Nattinger and Hall, 2012).

The final essay in the proceedings is by **Jamie Bologna** and **Joshua Hall**. Titled “Economic Freedom Research: Some Suggestions” the authors discuss some common problems observed in economic freedom research. In particular, they focus on issues observed in early stage research such as working papers, with the goal of helping scholars new to working with the EFW minimize the amount of revisions and time to publication. They conclude with their thoughts on important new areas of EFW scholarship, of which scholars interested in this area might want to build.

With Many Thanks

On behalf of my former colleagues in the Department of Economics, I want to extend our thanks to everyone who played a part in making the 2013 Upton Forum and associated programs a success, including the many scholars who presented during the forum and over the academic year. In particular, I would like to thank Arielle John for graciously assuming the teaching portion of the Upton Forum. Without the day-to-day engagement with students in the Economics Senior Seminar, the Upton Forum would not have been a success. In addition, Jennifer Kodl deserves her usual high praise. As Program Coordinator to the Upton Programs and Managing Editor of this volume, her experience, attention to detail, and good spirit were exactly what was needed during this transition.

Finally, I would like to thank the many alumni, friends, and charitable foundations who have supported the Miller Upton Programs. When the Upton Forum was launched, the goal was to create a suite of programs that would foster the kind of intense and engaged inquiry that leads to the development of liberally educated men and women. A belief in the emancipating power of critical thinking, an unapologetic passion for ideas, and a deep respect for open inquiry in which the answers are not preordained, have been our guiding principles. If the Economics Department were to honor Miller's legacy, anything less would have been unacceptable. The generosity of our contributors has allowed us to live up to the promise of those principles and has ensured that the Miller Upton Programs will serve Beloit College students and the broader community of intellectually engaged citizens for many generations to come.

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Institutions, Economic Freedom, and the Wealth of Nations¹

James D. Gwartney²

I have enjoyed my week at Beloit College and found the students to be bright, inquisitive, and committed to making the world a better place to live. The students reflect a faculty heavily involved in their studies and that challenges them to think seriously about important issues and topics. From my viewpoint, we have had a wonderful time focusing on and wrestling with complex issues that will shape the future of our nation, and indeed the entire world.

The Economic Freedom of the World Index

During the past quarter of a century, I have been involved with the Economic Freedom of the World project. The origins of this project go back to a panel session of the 1984 Mount Pelerin Society meeting on “Was George Orwell right?” Michael Walker of the Fraser Institute and the historian Paul Johnson were on the panel and a heated discussion on the differences between economic and political freedom ensued. Over lunch following the session, Walker asked Milton and Rose Freidman to join with him and host a series of conferences with a single objective: define and measure economic freedom for a large set of countries. The Liberty Fund of Indianapolis, Indiana agreed to fund the conferences. This resulted in a series of six conferences during 1986-1994. In addition to Walker and the Friedman’s, the conferences involved approximately 60 scholars, including luminaries such as Douglass North, Gary Becker, and Peter Bauer.

1 This essay is an edited version of Professor Gwartney’s Upton keynote address.

2 James Gwartney is the Gus A. Stavros Eminent Scholar Chair at Florida State University and the 2013 Upton Scholar.

What is economic freedom? In the early conference sessions, there was considerable debate about the nature and conceptualization of economic freedom. But, a consensus emerged that economic freedom, properly understood, is founded on the idea of self-ownership and freedom of individuals to choose for themselves. Individuals are economically free when they can choose how to use their time, talents, and resources as long as their actions do not harm the person or property of another party. Use of violence, theft, fraud, and physical invasions are not permissible; but otherwise, individuals are free to choose for themselves, trade with others, and compete as they see fit.

This view implies that there are four cornerstones of economic freedom:

- personal choice rather than collective choice,
- voluntary exchange coordinated by markets rather than allocation via the political process,
- open entry and freedom to compete in markets, and
- protection of persons and their property from aggression by others.

These cornerstones imply that governments should do some things but refrain from others. A country's legal and monetary arrangements provide the infrastructure for voluntary exchange and the operation of markets. Governments promote economic freedom when they establish a legal structure that provides for the even-handed enforcement of contracts and the protection of individuals and their property from aggressors seeking to use violence, coercion, and fraud to seize things that do not belong to them. Governments also enhance economic freedom when they facilitate access to sound money. But the cornerstones of economic freedom also require governments to refrain from many activities. They must refrain from actions that interfere with personal choice, voluntary exchange, and the freedom to enter and compete in labor and product markets. Similarly, economic freedom is reduced when taxes, government expenditures, and regulations are substituted for personal choice and voluntary exchange and when they restrict entry into occupations and business activities.

There is a tendency to confuse democracy with economic freedom. Thus, it is important to distinguish between the two. Democracy has to do with the procedures used to make political choices, while economic freedom is about the consistency of political institutions and policies with voluntary exchange and the protection of people and their property from aggressors. Political democracy is present when all adult citizens are free to participate in the political process (e.g., to vote, lobby, and choose among candidates), and when political outcomes

are determined through fair and open elections. However, political choices conflict with economic freedom when they impose restrictions that inhibit personal choice, voluntary exchange, the opportunity to compete, and the right of individuals to keep what they earn. This is true whether the restrictions are adopted by democratic or non-democratic procedures. Clearly, democratic political procedures do not guarantee economic freedom. Moreover, the differences between economic freedom and democracy underscore the importance of possessing a valid and reliable measure of economic freedom—one that can help us avoid the confusion that often results from a failure to distinguish between these two decidedly different concepts.

Using the four cornerstones of economic freedom as a compass, the participants in the Economic Freedom of the World (EFW) project set out to develop a measure of economic freedom across both space and time. From the very beginning, objectivity and transparency were central elements of the EFW project. Milton Friedman constantly reminded participants that we were developing a scientific instrument. Thus, it was vitally important that the derivation of each component was carefully specified and the methods used to assign component values for each country clearly outlined.

The data incorporated into the EFW index are from external sources such as the World Bank, International Monetary Fund, and Price-Waterhouse-Cooper accounting firm. As the availability of data has expanded through the years, the EFW index has become more comprehensive. The index now contains 42 separate components. The foundational data for each of the components are transformed to a zero-to-ten scale, where higher scores represent more economic freedom. The 42 components are then grouped into five areas and used to derive both area and summary ratings for each country.

The five areas of the EFW index are: (1) size of government, (2) legal structure and protection of property rights, (3) access to sound money, (4) international exchange, and (5) regulation of capital, labor, and business. Transparency is present throughout. The report provides information on the source of the data for each component, the methodology used to transform the raw data into component ratings, and how the component ratings are used to construct both the area and summary ratings. Moreover, the entire data set used in the construction of the index is freely available to researchers.

One hundred fifty two countries are now included in the index. Data are available for 102 of these countries for 1980, 1985, 1990, 1995, and annually for 2000 through 2011.

Economic Freedom Ratings

What are the world's freest economies? Exhibit 1 provides the answer for 2011, the most recent year for which the data are available. The list of the ten freest economies is headed by Hong Kong, Singapore, New Zealand, Switzerland, and the United Arab Emirates. Mauritius, Finland, Bahrain, Canada, and Australia round out the top ten.

Exhibit 1: The Ten Freest Economies, 2011

Ranking	Name	Rating
1	Hong Kong	8.97
2	Singapore	8.73
3	New Zealand	8.49
4	Switzerland	8.30
5	United Arab Emirates	8.07
6	Mauritius	8.01
7	Finland	7.98
8	Bahrain	7.93
9	Canada	7.93
10	Australia	7.88

Source: Economic Freedom of the World: 2013 Annual Report, Exhibit 1.2

Exhibit 2 indicates the rankings of other large economies including the United Kingdom (12th), United States (17th), Germany (19th), Japan (33rd), France (40th), Italy (83rd), Mexico (94th), Russia (101st), India (111th), and China (123rd). The 10 lowest-rated countries are: Algeria, Democratic Republic of Congo, Burundi, Central African Republic, Angola, Chad, Zimbabwe, Republic of Congo, Myanmar, and—in last place—Venezuela.

Exhibit 2: 2011 Economic Freedom Rating and Ranking of Other Major Economies

Ranking	Name	Rating
12	United Kingdom	7.85
17	United States	7.73
19	Germany	7.68
33	Japan	7.50
40	France	7.38
83	Italy	6.85
94	Mexico	6.64
101	Russia	6.55
102	Brazil	6.51
111	India	6.34
123	China	6.22
152	Venezuela	3.93

Source: *Economic Freedom of the World: 2013 Annual Report, Exhibit 1.2*

Importance of EFW Project

Why was the Economic Freedom of the World Project important? Prior to the 1990s, the growth and development literature was dominated by the production function models patterned after the work of Robert Solow. These models indicated that economic growth was the result of the growth of inputs plus improvements in technology. Inputs grew because of investment in physical and human capital. Technological improvement was merely the residual of the growth of output that was unexplained by the growth of inputs.

While the Solow input-output models were quite sophisticated and highly mathematical, there were several things they were unable to explain. First, the centrally planned economies all had high rates of investment in both physical and human capital. According to the Solow models, rapid growth was the expected result. By the late 1980s, it was clear this was not the case. Second, the production function models did not provide a credible explanation for the variation of capital formation and its productivity across countries and time periods. Even if capital formation is a highly important source of growth, this information is not very valuable if you do not understand the factors that contribute to its varia-

tion. Similarly, why did the productivity of capital grow more rapidly in some countries than others? Again, if you cannot explain this variation, the production function approach is not very enlightening. Finally, the ineffectiveness of foreign aid programs added to the dissatisfaction with the production function approach. The input-output models imply that countries are poor because they lack physical capital and education. If this is true, then foreign aid should help poor countries overcome this handicap. During 1960-1990, foreign aid programs were expanded and billions of dollars were “invested” in both in the physical infrastructure and education in less developed countries. The results, however, were disappointing. Most of the countries receiving the largest amounts of aid continued to stagnate.

By the mid-1990s, the shortcomings of the input-output growth models were increasingly obvious. Further, interest in the institutional approach was growing. Douglass North and Peter Bauer argued persuasively that institutions were vitally important as a source of growth and development. The public choice research of James Buchanan, Gordon Tullock, and others also highlighted the potential importance of economic and political institutions. Professor North won the Nobel Prize in 1993 for his work on institutions as a determinant of growth and development. In the mid-1990s Mancur Olson and two of his students, Steve Knack and Robert Keefer, used data from the International Country Risk Guide to examine the impact of institutional factors on the growth and development process. But there was still no comprehensive measure of the degree to which different countries used markets relative to the political process to allocate resources. The Economic Freedom of the World measure filled this vacuum.

The EFW index provided a comprehensive measure of the degree to which the institutions and policies of various countries were consistent with economic freedom. This made it possible for researchers to examine the contribution of economic institutions as a source of capital formation, growth, and development. This is why the measure is important.

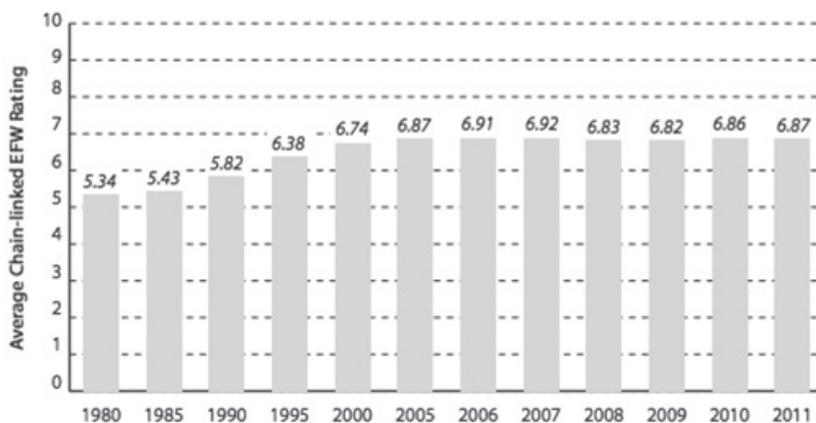
What Have We Learned from the EFW Research?

During the past 15 years, more than 200 scholarly articles have used the EFW data to examine a highly diverse set of topics. This research has yielded a number of important findings. I would like to consider five of them with you.

1. **Economic Freedom has Increased Since 1980.** Exhibit 3 presents the average economic freedom rating for the 101 countries with data since 1980. The

average economic freedom rating increased from 5.34 in 1980 to 5.82 in 1990 to 6.74 in 2000 and finally to 6.87 in 2011. Thus, the average EFW rating increased worldwide by approximately 1.5 points on the ten point scale. Most of the increase occurred between 1980 and 2000. The world is more economically free today than it was three decades ago. The major contributing factors to this long-term increase in economic freedom were reductions in marginal income-tax rates, more stable monetary policy, a decline in the use of military conscription, and liberalization of trade policies.

Exhibit 3: Average EFW Rating for the 102 Countries Rated Since 1980



Source: *Economic Freedom of the World 2013 Annual Report, Exhibit 1.4.*

While the economic freedom of the world has been increasing, the United States has been moving in the opposite direction. The EFW rating of the United States was the third highest in the world, behind only Hong Kong and Singapore throughout the 1980s and 1990s. But the EFW rating of the U.S. fell by nearly a full point between 2000 and 2011 and its ranking plunged to 8th in 2005 and 17th in 2011. Many Americans used to refer to Canada as our socialist neighbor to the north, but this is certainly not true now. Canada is now more economically free than the United States.

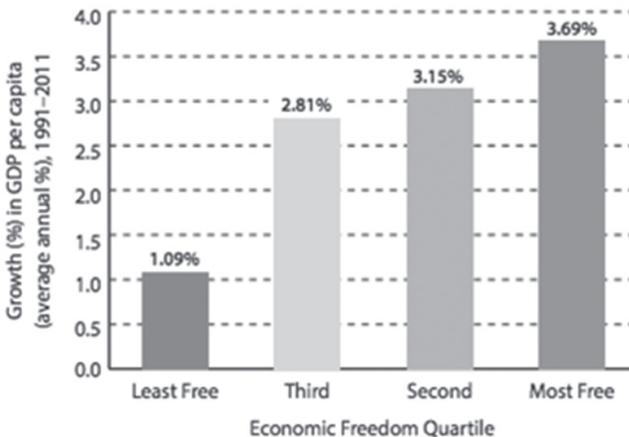
2. Institutions Matter: Economic Freedom Enhances Economic Growth.

Since the time of Adam Smith, most economists have argued that freer economies will grow more rapidly and achieve higher income levels. Is this really true?

With the economic freedom data, it is possible to provide an empirical answer to this question. The average EFW rating during 2000-2011 was derived and the countries grouped by quartiles ranging from the least free to most free. The average growth rate of per capita income for the two decades between 1991 and 2011 was then derived for each of the four groups. Exhibit 4 provides the data on these growth rates. Clearly, there is a strong positive relationship between economic freedom and growth of per capita income.

The freest economies grew at an annual rate of 3.69, more than three times the 1.09 growth rate of the least free economies. While the figures of Exhibit 4 adjust for only initial income level, more detailed analysis indicates that the linkage between economic freedom and growth persists after adjusting for political institutions, location, climate, and other factors that might influence growth. Moreover, econometric analysis indicates that countries that move toward more economic freedom subsequently grow more rapidly and this relationship also holds even after adjustment for differences in factors such as political institutions, education, location, climate, and culture.

Exhibit 4: Economic Freedom and Economic Growth, 1991-2011 by Quartile

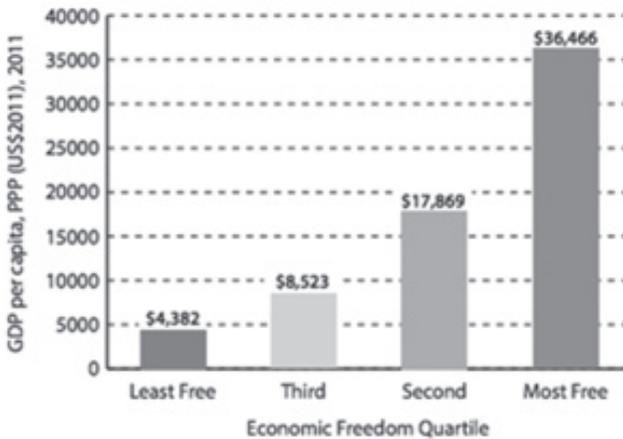


Source: *Economic Freedom of the World 2013 Annual Report*, Exhibit 1.7.

3. Countries with Persistently High Levels of Economic Freedom have Higher Income Levels than those that are Less Free. Exhibit 5 indicates the per capita income level in 2011 for each of the four quartile groups. The 2011 per capita incomes of countries in the freest quartile averaged \$36,466, more than

twice the \$17,869 of the second freest quartile. In turn, the income level of the second freest group was more than twice that of the third quartile, which was approximately twice the \$4,382 of the least free quartile. The per capita income of the freest group of economies was nearly nine times that of the least free group. While the figures of Exhibit 5 do not adjust for other factors that might influence per capita income, more detailed statistical analysis indicates that the strong positive relation between persistently high levels of economic freedom and income remains after adjustment for other major factors that might influence income levels.

Exhibit 5: Economic Freedom and 2011 Income per Capita by Quartile



Source: *Economic Freedom of the World 2013 Annual Report, Exhibit 1.6.*

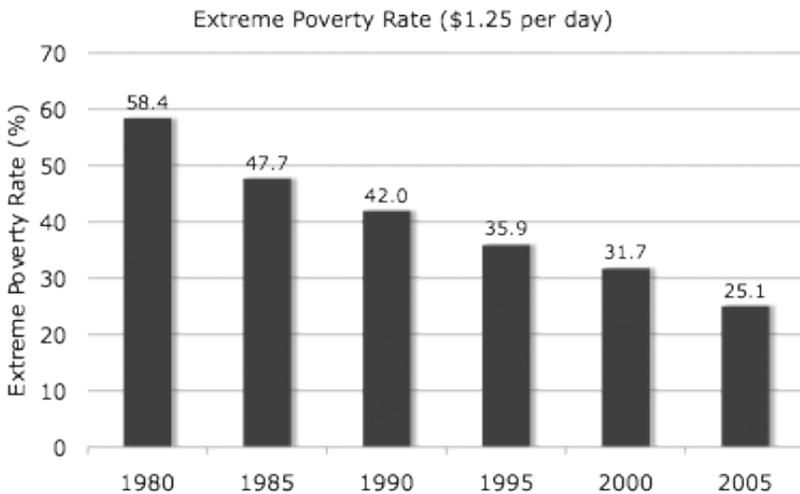
4. A Sound Legal System Provides the Foundation for Growth and Prosperity. Our modern living standards are almost entirely the result of investment, entrepreneurial discovery, and gains from depersonalized trade, i.e., trade between people who do not know each other and often never meet. But the realization of gains from these sources is critically dependent on the presence of a legal system that provides for rule of law, protection of property rights, and unbiased enforcement of contracts and settlement of disputes.

The EFW data have been used to examine the importance of Area 2, the legal system. Virtually without exception, countries with low Area 2 ratings perform poorly. On the other hand, countries with high Area 2 ratings grow and achieve high income levels. There is also a relation between the legal system (Area 2) and

regulation (Area 5) ratings. Countries with excessive regulation tend to have low legal system ratings. This is not surprising. When the political system is heavily involved with regulation of business, labor, and capital, it tends to undermine rule of law principles and lead to favoritism, cronyism, and corruption. In turn, this repels investment, slows trade, and encourages wasteful rent-seeking. Stagnation is the inevitable result.

5. Economic Freedom Results in Less Poverty. Some observers fear that growth propelled by economic freedom will leave the poor behind. This was not the case during 1980-2005. As Exhibit 3 illustrated, economic freedom increased substantially during this quarter of a century. At the same time, the poverty rate fell. As Exhibit 6 shows, the extreme poverty rate – the share of the world’s population living on \$1.25 or less per day – plunged from 58.4 percent in 1980 to 25.1 percent in 2005. During this period, more than 2 billion people were lifted out of extreme poverty.

Exhibit 6: Extreme Poverty Rate, 1980 - 2005

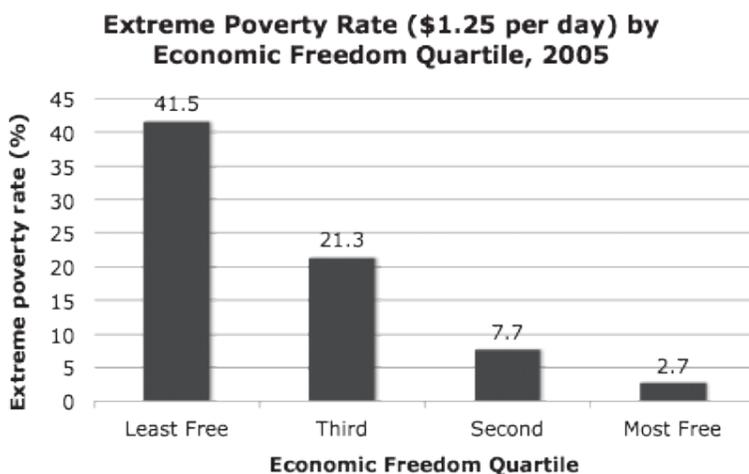


Source: Derived from data of Economic Freedom of the World 2013 Annual Report

As Exhibit 7 shows, economies that are more free have substantially lower poverty rates than those that are unfree. In 2005, the extreme poverty rate in the Least Free economies was 41.5 percent, compared to 21.3 percent in the third

freest quartile, 7.7 percent in the second freest group, and only 2.7 percent in the most economically free quartile. Most importantly, the developing countries that moved most markedly toward economic freedom during 1980-2005 achieved the largest reductions in poverty. These relationships provide strong evidence that an institutional and policy environment consistent with economic freedom is a central element for progress against poverty.

Exhibit 7: Economic Freedom and the 2005 Extreme Poverty Rate by Quartile



Source: Derived from data of *Economic Freedom of the World 2013 Annual Report*.

Two Unresolved Issues

During the past two decades, we have learned a lot about what works. Institutions and policies supportive of economic freedom create the environment for sustained growth, higher income levels, and lower rates of poverty. The central elements of this environment are limited government, protection of property rights, unbiased enforcement of contracts, sound money, freedom of exchange, and reliance on markets. But, merely because we know what works, it does not follow that sound policies will be adopted.

Economic and legal institutions are the result of political action. There are at least two unresolved issues in this area. First, we do not fully understand why some countries develop institutions and follow policies consistent with economic freedom and prosperity while others do not. Movements toward economic freedom have occurred under political regimes ranging from democratic to authori-

tarian. Similarly, policies inconsistent with economic freedom have been adopted under diverse forms of political organization.

Second, there is uncertainty about the relationship between democracy and economic freedom. During the past several decades, transitions from authoritarian to democratic regimes appear to enhance economic freedom for a time, something like ten years. After that, however, regression often occurs. Public choice theory indicates that, as they mature, unconstrained democratic regimes unleash forces inconsistent with economic freedom. The shortsighted nature of the political process enhances the popularity of debt financing and promises of future benefits that will be difficult, if not impossible to keep. With time, the special interest effect indicates that rent-seeking, political favoritism, subsidies, and transfers will become more widespread. Dependency, cronyism, and even corruption are predictable side effects. Are there irreversible forces in this direction? We do not know the answer to this question, but it is sure to be a topic of considerable research in the years immediately ahead.

Conclusion

The EFW index provides a measure of the degree to which economies rely on markets (as compared to various forms of political decision-making and central planning) to allocate resources. Research using the EFW data indicates that countries with institutions and policies more consistent with economic freedom grow more rapidly, attain higher income levels, and achieve lower poverty rates than those that are less free. The positive impact of economic freedom remains even after adjustment for factors such as political structure, educational levels, geographic location, climate, and cultural differences. This research provides powerful evidence that institutions and policies supportive of economic freedom are vitally important for the achievement of economic growth and higher living standards.

However, economic institutions and policies are a reflection of political choices. Just because we know what works, does not guarantee the emergence of sound institutions and policies. Political incentives often conflict with the adoption of sound economic policy. This is true even when decisions are made democratically. The central issue of our age is how to bring political decision-making more consistently into harmony with economic prosperity. The future wealth of nations is dependent on how we meet this challenge.

Freedom as Development: Reflections on James Gwartney's Contributions to Measuring Institutions

Robert A. Lawson¹

I. The Great Debate

One of the most hotly contested debates in economics, one that goes back well over a century, is whether decentralized markets with participants largely free to buy, sell, produce, consume, save, invest, and take risks without much government interference is a better or worse economic system than centralized planning with participants obligated to obey the planners' economic goals and objectives. Today, it is commonly thought, at least in most circles, that some version of the former is preferred to the latter. But the idea that the free market is likely to work better than central planning was not always so widely accepted.

In the 1961 edition of Paul Samuelson's *Principles of Economics* textbook there appeared a graph showing the income levels and projected growth rates of the United States and the Soviet Union. In 1960, Samuelson estimated the U.S. economy to be twice the size (presumably measured in per capita terms, but this is unclear) of the Soviet Union. Whatever can be said about that initial estimate, there is little doubt about the inaccuracy of what he expected to happen in the en-

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suing decades. The graph projected Soviet growth rates that would be must faster than U.S. growth rates such that by as early as the 1980s or almost certainly by 2000 the Soviet Union would be richer than the United States. (Levy and Peart, 2011).

To make matters worse, despite growing evidence being uncovered by some economists such as the University of Virginia's Warren Nutter, this graph, or rather updated versions of it appeared in the textbook for decades. By the 1970 edition the graph had been updated. The U.S. to U.S.S.R. income ratio was *still* 100:50; the only thing was the decades on the horizontal axis had shifted ten years forward. By 1980, the ratio was 100:55 but the basic story was the same.

Levy and Peart (2011) do a great job accounting for Samuelson's own evolving explanations for the inconsistencies between his forecasts and actual Soviet growth. In several editions for instance, he brushed away any such concerns by blaming the poor Soviet performance on "bad weather".

Even as late as 1989, literally on the verge of the breakup of the Soviet Union itself, Samuelson and Nordhaus (his new co-author) said, "What counts is results, and there can be no doubt that the Soviet planning system has been a powerful engine for economic growth." The graph had finally been taken out, but there was no backtracking for Samuelson even until the bitter end. Samuelson and Nordhaus did append their statement with this qualification: "But it has done so in an atmosphere of great human sacrifice..."² I guess tens of millions of deaths does count as "great human sacrifice" so they got that one right at least.

All sarcasm aside, the point here is not to bash Samuelson for his errors. Samuelson was far from alone in overestimating the productive capabilities of central planning. Rather the point here is to give the reader a sense of the dominant intellectual environment that prevailed in the 1960s and 1970s and also to reflect on why the best minds in the business were so utterly wrong on this issue.

There are two explanations that come to mind. First, Samuelson may simply have been an ideological Communist. Certainly, the era sported many ideological apologists for the Soviet regime, so maybe Samuelson was one of them. Alas, there isn't any real evidence of this in Samuelson's case. To be sure, he was no Milton Friedman, but politically he was a centrist, liberal (in the corrupted American sense of that word) academic. He was a Keynesian who saw a role for an expansive and active state, but he was no "commie".

² This quotation was provided to me by Barkley Rosser at James Madison University.

If not blinded by ideology, what is the second possible explanation for Samuelson's error? The answer provided by Levy and Peart (2011) is that he was a victim of a bad model of economic growth. The model of growth that Samuelson worked with was based on a production function idea borrowed from microeconomics. The production function, when applied to a nation, posits that national production is a function of resources such as capital and labor. As such, growth in production is the result of expanding capital and labor, that is, *investment* in physical and human capital. Later models would add technology to this model, but that is not a complication that matters for this story.

So if growth is a matter of investment, and if the Soviet central planners emphasized investment to a greater degree than was the case in the market-driven United States, and there is evidence that they did, then ipso facto the Soviet economy would grow faster.

Doesn't investment matter? Yes, of course it does. The problem with the production function approach is that it assumes the country is operating at the boundary of its production possibilities frontier. That is, it assumes the country is combining its capital and labor, and investing in new capital, in a way that is maximizing output. The reality of course is that the Soviet economy was a massive waster of resources. They invested in capital like crazy, but most of that investment failed to result in productive output. The reasons for this failure have to do with the inherent institutional flaws (as identified by the likes of Mises and Hayek) of central planning in the absence of market prices. Simply put, the Soviet economy failed ultimately because of a lack of economic freedom.

Before moving on, I want to highlight a final problem with those Samuelson graphs. Not to put to fine a point on it, but frankly Samuelson made it all up. By that I mean only that the graph was drawn entirely based on his theoretical view of the world. There was not one whit of data involved in constructing that graphic. Samuelson existed for the most part in a chalkboard world that ignored empirical reality.

II. James Gwartney

About the time Paul Samuelson is publishing these forecasts for the Soviet economy, young James Gwartney is receiving his education first in a one-room schoolhouse and then at Ottawa University in Kansas where he studied under Wayne Angell, who would later become a Governor of the Federal Reserve System. Eventually, Gwartney found himself at the University of Washington as a

graduate student studying under a very different kind of economist compared to Samuelson, Douglass North. North's study of economic history led him to focus on the central role of institutions, both formal and informal, in determining economic outcomes. Unlike Samuelson's production function approach that saw growth in terms of finding more resources, North's approach suggested that growth is more about finding better institutions. To North, growth is less about expanding the production possibilities frontier than about moving from inside that frontier to a point closer to the frontier. To North, a country with less investment but better institutions could easily outgrow one with more investment but worse institutions. North would win the Nobel Prize in 1993.

In a foreshadowing of things to come, Gwartney's dissertation focused on measuring discrimination in labor markets. He then found his way to Florida State University in Tallahassee in 1968 where he has taught since. Reviewing Gwartney's long and distinguished career as a labor economist and economic educator (his own principles text co-authored first with Richard Stroup and now with the addition of Russell Sobel and David Macpherson is in its 14th edition) is beyond the scope of this paper. Instead, I want to focus on Jim Gwartney's contributions to measuring economic freedom.

III. The Creation of the Economic Freedom of the World Index

At a 1984 meeting of the Mont Pelerin Society, Milton Friedman and others were debating George Orwell's book 1984. The question was whether freedom was growing or worsening (as Orwell predicted in the novel). While most thought civil and political liberties were growing in most places around the world, many thought economic liberties were under increasing attack. Friedman noted the lack of empirical evidence during this debate and afterwards, with help of his wife Rose and the Fraser Institute's Michael Walker, organized a series of Liberty Fund conferences with the goal of creating some kind of economic freedom measurement.

Jim Gwartney went to the third such meeting in 1989. Many of the participants talked about obtaining a laundry list of dozens and dozens of indicators that they would like to include in an economic freedom index. Gwartney and another participant at this meeting, Walter Block who was then at the Fraser Institute and now is a professor at Loyola University in New Orleans, recognized that such an index might be doable but only for a tiny handful of countries. They decided to

create their own index that used fewer variables but one that could be calculated for many more countries.

As Gwartney's graduate research assistant, I was tasked with the unenviable job of collecting and organizing the data, which I did beginning in the winter of 1989-90. This was no small feat in the days before the commercial Internet. Our first attempt, which we presented at the fourth meeting in the series at Sea Ranch California in 1990 (Figure 1), contained 11 variables and covered 79 countries. The participants attacked us mercilessly! How could so few variables tell us anything? You're not including this, that or the other thing, they complained. Despite the criticisms, a casual survey conducted by Friedman himself verified that our parsimonious index resulted in ratings that were fairly close to people's expectations for many countries. We passed the smell test with Friedman at least.

Figure 1 Participants of the 1990 Meeting at Sea Ranch, CA



Source: Author's files.

A couple of years later, in 1992, we were invited back to California for a sixth and final meeting, one that would focus *entirely* on our revised index with the goal of publishing it widely soon thereafter. That meeting went a little better than the first, but again we left with a long list of criticisms to consider.

Michael Walker invited us to complete a full revision and he agreed to publish it as a Fraser Institute publication. As bad luck would have it Gwartney's eyesight

took a serious turn for the worse in 1993-94 while he was teaching in Prague and our plans to publish were delayed until 1996.

The first volume (Gwartney, Block, and Lawson; 1996) presented an index for the years 1975-1995 (in five-year intervals) based on 17 variables covering 102 countries. Milton Friedman's "Foreword" in the first volume is worth reprinting here:

Freedom is a big word, and economic freedom not much smaller. To talk about economic freedom is easy; to measure it, to make fine distinctions, assign numbers to its attributes, and combine them into one overall magnitude—that is a very different and much more difficult task, as we found out when we started on this quest some thirteen years ago (see Michael Walker's introduction).

James Gwartney, Robert Lawson, and Walter Block deserve great credit for having brought this quest to so satisfactory a temporary conclusion—I say temporary because this study of economic freedom for more than 100 countries provides a cornucopia for students of the relation between economic freedom, political freedom, and civil freedom, and for further explorations of the relation between economic freedom and the level and rate of economic growth. The resulting studies will surely make revised editions necessary, both to bring the indexes of economic freedom up to date and to incorporate the additional understanding that will be generated.

For many of us, freedom-economic, political, civil—is an end in itself not a means to other ends—it is what makes life worthwhile. We would prefer to live in a free country even if it did not provide us and our fellow citizens with a higher standard of life than an alternative regime. But I am firmly persuaded that a free society could never survive under such circumstances. A free society is a delicate balance, constantly under attack, even by many who profess to be its partisans. I believe that free societies have arisen and persisted only because economic freedom is so much more productive economically than other methods of controlling economic activity.

It did not require the construction of an index of economic freedom for it to be widely believed that there is a close relation between economic freedom and the level and rate of economic growth. Theoretical considerations gave reason to expect such a relation, and little more than casual observation sufficed to show that what theory suggested, experience documented. We have

not in a sense learned any big thing from this book that we did not know before. What we have done is to acquire a set of data that can be used to explore just how the relation works, and what are the essential connections, and that will enable skeptics to test their views objectively.

To achieve these advantages, it was essential that the measure of economic freedom not beg any questions by depending on outcomes; it was essential that it depend only on objective characteristics of an economy. This may seem obvious but I assure you that it is not. After all, the rate of economic growth or the level of living may be an excellent proxy for economic freedom, just as an auto's maximum speed may be an excellent proxy for the power of its motor. But any such connections must be demonstrated not assumed or taken for granted. There is nothing in the way the indexes are calculated that would prevent them from having no correlation whatsoever with such completely independent numbers as per capita GDP and the rate of growth of GDP. Yet the actual correlation between the indexes and the level and rate of economic growth documented in some of the extraordinarily informative graphs in the book (e.g., Exhibit S-2) is most impressive. No qualitative verbal description can match the power of that graph.

*Milton Friedman
The Hoover Institution
Stanford University*

Each year since then, the Economic Freedom of the World report has been updated, revised and expanded. The most recent edition (Gwartney, Lawson, and Hall; 2013) presents an index based on 43 variables for 152 countries.

IV. The Legacy of the Economic Freedom of the World Index

It is probably too early to tell what the legacy of this project will be, and I am probably not the one to write about it. It is fair to say however that the Economic Freedom of the World (EFW) index has vastly exceeded our expectations in terms of its impact on the scholarly debate.

Economic Freedom and Growth

By a good margin, the EFW index has been used more to study economic growth than any other factor. There have been a couple full survey articles looking

at this literature (Berggren, 2003) and (De Haan, Lundstrom, and Sturm; 2006). The latter authors concluded (p. 170),

Most studies analysing the relationship between economic growth and EF have employed cross-country (or panel) growth models. Table 5 summarizes empirical growth studies in which some EF indicator is taken up as explanatory variable. It is clear from these studies that EF seems to have a positive association with growth. *None of the studies summarized reports that economic freedom is bad for growth.* (Emphasis added.)

What I think of as my best piece of scholarship using the EFW index is the article we published in the journal *Kyklos* (Gwartney, Holcombe, Lawson; 2006). That article made three important contributions to the growth literature. First, it expanded the discussion to include the impact of institutions on investment. Countries with more economic freedom exhibited more growth per unit of investment and attract a higher level of private investment as a share of GDP.

Second, economic freedom exhibits a directly positive impact on economic growth and an indirect impact through increasing levels of investment. Our estimates indicated that a one-unit change in EFW increases long-term growth by approximately 1.5 percentage points in total.

Third, our analysis indicated that poor economic performance is associated with larger future improvements in institutional quality. Thus, the positive relationship between economic freedom and long-term economic growth is clearly not the result of reverse causality.

The Economic Freedom Literature

Recently Hall and Lawson (2014) reviewed 402 articles citing the EFW index in various peer-reviewed academic journals. Of these 402 articles, 198 used the index as an independent variable in an empirical study. Over two-thirds of these studies found economic freedom to correspond to a “good” outcome such as faster growth, better living standards, more happiness, etc. Only 8 studies in the sample found economic freedom to be associated with a “bad” outcome such as increased income inequality. The balance of evidence is overwhelming that economic freedom corresponds with a wide variety of positive outcomes with almost no negative tradeoffs.

Here are just a few random samples of findings of papers surveyed in Hall and Lawson’s accounting of the literature.

- “Empirical results indicate that capitalism often has a stronger beneficial impact on many aspects of women’s well-being and gender equality in society” (Stroup, 2008).
- More economic freedom results in more investment in renewable energy (Brunnschweiler, 2010).
- “The result of the analysis is that there is a significant negative correlation between economic freedom and human rights violations.” (Burkhart, 2002)
- Higher economic freedom corresponds to better tourism competitiveness (Das and Dirienzo, 2010).
- “...countries more favorable to free enterprise have a reduced risk of civil war onsets.” (De Soysa and Fjelde, 2010)
- “We report the existence of a strong, positive, statistically significant and economically consequential impact of EFW on growth and the level of income.” (Faria and Montesinos, 2009)
- “The regulatory framework and freedom factors have significant positive impacts on telephone lines per capita.” (Gutierrez and Berg, 2000)
- Economic freedom is a negative correlate with air and water pollution (Lamla, 2009).
- The EFW summary index is positively related to the change in entrepreneurship from 2001-2007 (Larroulet and Couyoumdjian, 2009).
- Countries with higher EFW scores are recipients of higher foreign capital investment (Lothian, 2006).
- “This empirical analysis examines the interaction of economic freedom and democracy on measures of health, education, and disease prevention in society. The results imply that greater economic freedom consistently enhances these welfare measures, even among more democratic countries. Democracy has a smaller positive influence that disappears for many welfare measures in countries with more economic freedoms.” (Stroup, 2007)
- Economic freedom is positively correlated with happiness (Veenhoven, 1999)
- “A higher rate of economic freedom reduces the gender wage residual significantly; if the country is ranked one point higher in

the ten-point scale on economic freedom the gender wage residual drops between 1.4 and 4.4 log points. The standard deviation of economic freedom is 1.7, so observed differences in this indicator have a rather large effect on the gender wage residual.” (Weichselbaumer and Winter-Ebmer, 2007)

Economic Freedom and the Value of Measurement

One of the most valuable lessons to be learned from the EFW index project is the transformative impact of bringing measurement to bear on a problem. Economists have talked about economic freedom in some sense or another since at least the days of Adam Smith. It wasn't until a quantitative measurement was available that the kinds of studies we've seen in the last few years could be published. After spending nearly 20 years trying to measure economic freedom, I decided to try to use the lessons of measurement in another area.

I confess to being a hopeless cosmopolitan and frequently refer to national borders as “lines drawn on maps by dead white men.” On a personal and political level, I find it an abomination to tell a peaceful human being where they can and can't live or to prevent her from traveling from place to place. With this motivation in mind, I decided to study and measure how countries limit our freedom to travel.

Lawson and Lemke (2012) created Ease of Travel indexes to measure how restrictive travel visas are around the world. This paper examined travel visa restrictions in 188 countries. The paper presented quantitative measures of the restrictions (1) facing foreign visitors into a given country and (2) facing citizens of a given nation traveling abroad. The analysis showed that countries are more likely to impose visas on foreign visitors when they are more populous, but less likely when they are rich and economically free. Citizens from richer and more populous countries face fewer travel visa requirements when traveling abroad. Also countries are less likely to impose visa requirements on similar nations.

Lawson and Roychoudhury (2013) have a follow-up paper that estimates the impact of travel visas on tourism travel flows. At the aggregate level, a one standard deviation more severe travel visa regime, as measured, is associated with a 30 percent decrease in inbound travel. At the bilateral level, having a travel visa requirement on a particular country is associated with a 70% reduction in inbound travel from that country.

The gains associated with eliminating travel visas appear to be very large. For example, requiring travel visas from residents of over 80% of the countries in the sample, few countries have travel visa regimes as strict as the United States. As an extreme counterfactual, what would happen if the United States opened up tourist travel to all comers without requiring visas? We estimate that if the U.S. eliminated entirely all travel visas, we would see an *additional* 45-67 million visitors and \$90-123 billion in tourist spending annually.

It is my hope that by finally measuring the severity of our restrictive travel policies and then using these measures to estimate their deleterious impact we can raise both academic and public awareness to the issue.

Economic Freedom and Other Freedoms

Two of my papers using the EFW index focused on the so-called “other” freedoms. Lawson and Clark (2010) examined the hypothesis put forward by Milton Friedman in *Capitalism and Freedom* and by Hayek in *The Road to Serfdom* that economic freedom is a necessary, but not sufficient, condition for political freedom. Consistent with the Hayek-Friedman hypothesis, using the EFW data and measures of political rights and civil liberties from Freedom House, we indeed found few examples of countries with high degrees of political freedom without relatively high economic freedom. This suggests that people who value political and civil liberties should favor economic liberty, as it is a necessary precondition for the other liberties they care about.

The second paper (Lawson and Carden, 2009) took on Naomi Klein’s thesis from her book *The Shock Doctrine: The Rise of Disaster Capitalism* in which she argues that economic liberalization has been built on the basis of human rights abuses. Citing Chile as her prime example, she accuses free-market advocates of being openly complicit in heinous acts including even torture. This is a serious charge, but one I doubted was true. Using the EFW data and a database of human rights violations from the CIRI Human Rights Data Project, we demonstrate conclusively that economic liberalization has occurred *more* in countries that exhibit *fewer* human rights violations. This is precisely the opposite of what Klein argued.

This, once again, illustrates the power of employing empirical data. With her strong progressive ideology as a background and using exactly one data point, Chile, she concocted a narrative that links economic freedom with serious violations of human rights. Sadly for Klein, if you look at *all the available data*, her thesis fails miserably.

V. Conclusions

What have we learned from our attempt to measure economic freedom with the EFW index? As Lord Kelvin said, “to measure is to know.” Our understanding of what economic freedom actually is has been enhanced by this index. Freedom, economic or otherwise, is a good and it is worth studying on its own merits.

With that said, the biggest impact of the index will no doubt be how it helps us understand how economic freedom can contribute to a better society. Academically, the EFW index has helped us recognize that the input-output production function model of growth is flawed without some deeper understanding of the role of freedom and other institutions like rule of law.

Additionally, the EFW index highlights the importance of using empirical evidence in any debate. Paul Samuelson’s graph would be laughed at today because today we know better from the data. The existence of the EFW index will help guard against another mistake of that magnitude entering our textbooks in the future.

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The Soft Side of Economic Freedom¹

Niclas Berggren²

1. Introduction

James Gwartney has made a fantastic contribution to science by developing the Economic Freedom of the World Index (EFW).³ I will soon describe why I think it is a fantastic contribution and then continue by presenting research results on how economic freedom might affect three variables that many people care about: income equality, social trust and tolerance. Through this choice of variables, I hope to show the *soft* side of economic freedom, how it not only influences economic growth but also some social characteristics of a society.

Before going into that, let me give a background that briefly outlines why James Gwartney's achievements in this area are laudable. Any normative position, e.g., on matters of public policy, consists of two elements: beliefs and values (Ayer, 1936; Buchanan, 2001: 159–160).⁴ If I advocate a certain policy, I do so because I believe that it, better than available alternatives, satisfies some goal that I embrace. Of central importance for decisions to turn out satisfactorily, irrespective of whether they are individual or collective (as in the case of policies), is that

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3 For details about the index, see www.freetheworld.com, where the annual reports and all data can be found. For a description of how the index emerged, see Gwartney (2009).

4 In Berggren (2004), I apply this distinction in an analysis of whether classical liberalism can be defended if people regard values as subjective. For the discussion here, however, it does not matter if people regard them as subjective or objective.

our beliefs are correct. If we pursue a goal with erroneous information about how to achieve it, chances are very high that we will, in fact, not achieve it. Buchanan (2001: 157) describes the role of science for shaping beliefs:

[S]cience is the process through which individual beliefs about reality are continually corrected, and a process within which individuals are brought into agreement about that which is, at least in the provisional filing cabinet, relatively absolute absolutes ... The social function of “science”, the activity of the specialists, is that of shutting off dialogue and discourse, of resolving conflicts among competing explanations of physical reality, and of allowing provisional truths to be put to everyday usage, at least until more acceptable alternatives emerge.

This description of the scientific process stresses how imperative the generation of knowledge is. People believe various things, whether as private individuals or in positions of power, and on that basis they take normative positions on various issues, not least political ones, given their values. But people (hopefully) realize that they are not in possession of “ultimate truths” and that their beliefs therefore should be open to correction as new scientific findings are produced. Such findings then have the potential of bringing not only scientists themselves but also people in general into (more) agreement on the way the world works, which in turn will also lead to more similar political opinions.⁵

When it comes to the functioning of markets, there is a great number of conflicting and competing views, going back a long time in history and perhaps heightened through the ideological positioning taking place from the late 19th century onwards, with the development of liberalism on the one hand and of socialism on the other.⁶ People on the left tended to take a very dim view of markets, while people on the right were prone to hail them. It may not be sufficient but it should at least be necessary with scientific knowledge to bring conflicting views

⁵ It could be that people are not as open-minded as presumed here and that they are unwilling to take in new knowledge and revise their normative positions as a result. One reason could be some ideological conviction. Strangely, some have interpreted the Economic Freedom of the World project as an ideological one – a charge I encountered from some colleagues during my PhD-student days at the Stockholm School of Economics (cf. de Haan et al., 2006). However, for me it is counterintuitive to work to provide data for empirical testing if one is driven by ideology. The open attitude of James Gwartney is also exemplified in the development of the index as a result of various critiques over the years, regarding matters such as which variables to include, how to measure them and how to weight them.

⁶ For some academic evaluations of markets, see Hirschman (1982) and Bowles (1998).

of this kind into (more) agreement, to the extent that the conflicts derive from differing beliefs about what markets do and do not do.

It is here that the great benefit bestowed upon the world by James Gwartney becomes clear.⁷ Through the EFW there are now data available on the degree to which various economies are market-oriented. Data are needed for scientific knowledge to be produced and for it to fulfill its social function, as explicated by Buchanan in the quote above. However, constructing the EFW was no trivial undertaking, in two senses. First, it must be considered to have been risky career-wise for an economist to engage in a data-producing project, since the generation of data as such is generally not valued very highly and since there is a great opportunity cost in the form of having less time for writing papers which, upon publication, are valued highly.⁸ Second, the feat of putting together an index should not be underestimated. Deciding which variables to include, how they are to be transformed into index numbers, how they are to be weighted etc., all of this requires great intellectual effort. Add to that the actual collection and processing of the basic data, which requires conscientiousness and a lot of time, and providing leadership to the team involved, and the undertaking must be considered monumental. This is especially so since the project is of a long-term kind: From the start, it was clear that there would be continual developments and updates, and these have continued until this day.

Very briefly, the EFW measures the degree to which an economy is market-oriented, the key ingredients of which are personal choice, voluntary exchange, freedom of entry and competition and protection of persons and property. The index consists of five areas, 24 components and 42 variables. Each variable, component and area is measured on a ten-point scale, where simple averages are used to calculate the composite measures. The five areas are: the size of government, the legal system and security of property rights, sound money, freedom to trade internationally and regulation.

Much of the issues analyzed by means of the EFW have concerned “hard” economic variables, in particular economic growth – for surveys, see Berggren (2003), de Haan et al. (2006) and Doucouliagos and Ulubasoglu (2006), and for

7 James Gwartney also had collaborators, who also deserve praise, not least Robert Lawson and, in later years, Joshua Hall.

8 This is of course not to say that James Gwartney has not made many important contributions to economic science in other ways and areas, which is documented on his web page: <http://mailer.fsu.edu/~jgwartne/garnet-jgwartne/>

some more recent studies, see, e.g., Justesen (2008), Bergh and Karlsson (2010), Hall et al. (2010) and Rode and Coll (2012).⁹

The picture that emerges from most of these studies is that economic freedom (especially increases thereof) is positively related to growth. If one holds the value that increases in prosperity are desirable, then it seems quite clear that a method through which this can be achieved is through reforms of the judicial-economic institutional framework in a market-conducive direction.

In this presentation, I wish to highlight some of my own work making use of the EFW to shed light on how markets relate to three soft variables: income equality, social trust and tolerance.¹⁰ Even if one accepts that economic freedom brings about economic growth, and even if one favors growth, it can still be (and most probably is) the case that one values other things as well, which makes it important to see whether economic freedom affects some of these other things.¹¹ It is not until we have a fairly complete picture of the overall consequences of something that we can really evaluate it. I will try to provide some selective pieces to the laying of this puzzle.

Buchanan (2001) opines that there are no final truths in empirical science: there are temporary “truths”, around which scientific agreement has emerged, but these are always open to being overturned by new scientific evidence. Notably, throughout this process, no “truths” can be established without data. It is especially interesting to partake of the scientific process when new data come along, as in the case of the EFW: things that could not be demonstrated empirically before now become demonstrable. As empirical results of the consequences of economic

⁹ Viewing economic growth as a “hard” variable is perhaps questionable, since it tends to benefit large segments of the population in many ways, not only in terms of material possessions but also in terms of welfare services of various kinds. For a moral argument in favor of growth as a policy goal, see Friedman (2005).

¹⁰ There are other soft variables that have been related to economic freedom, e.g., happiness (Gehring, 2013; Knoll et al., 2013; Rode, 2013); gender equality (Stroup, 2008; Zweimüller et al., 2008); obesity (Bleich et al., 2008; Ljungvall, 2013); civil war (de Soysa and Fjelde, 2010); ethnic violence (Steinberg and Saideman, 2008); human development (Akhter, 2004); education, health and disease (Stroup, 2007); and human rights violations (de Soysa and Vadlammanati, 2013) – but for reasons of space, I do not present these studies in the present text.

¹¹ In some cases, economic freedom can affect economic growth through the soft variables: focusing on the latter can clarify the mechanisms at work.

freedom began to be presented, temporary “truths” have come to be established.¹² Still, an early literature like this must always be open to revisions and new insights: I demonstrate this in the first discussion below, about the relationship between economic freedom and inequality, where my own early findings have been challenged in follow-up studies. This teaches us humility and underscores that empirical findings, like the ones presented here, should be regarded as tentative. Later studies may find different results. Still, the scientific approach does entail the temporary acceptance of “relatively absolute absolutes” (Buchanan 2001: 155), so let us proceed to see what I, together with my co-authors, have been able to find. Hopefully, our results constitute new knowledge that can be used to reach (more) agreement about the nature of the world around us. The central point in all of this is that without James Gwartney, nothing could have been accomplished. Without data, the scientific conversation cannot even get off to a start.

In the next section, I present my research on how economic freedom relates to equality (as well as some later research with different findings). In section 3, I present joint work (with Henrik Jordahl) on economic freedom and social trust. Then I continue to introduce results (produced with Therese Nilsson) on economic freedom and tolerance. I conclude, lastly, that economic freedom does seem able to stimulate at least some softer goals, in addition to economic growth.

2. Economic Freedom and Equality

A classic trade-off in economic analysis, especially following Okun (1975), is that between equity and efficiency. The idea is that the more one has of the one, the less one will have of the other, since equity can only be pursued through policies, such as taxation and regulation, that reduce incentives for and, therefore, the prevalence of productive and innovative behavior. As shown by studies referred to in the preceding section indicate, economic freedom entails economic efficiency as measured by economic growth, which suggests that economic freedom stands

¹² In a recent overview of the literature, Hall and Lawson (2014: 1) write: “Of 402 articles citing the EFW index, 198 used the index as an independent variable in an empirical study. Over two-thirds of these studies found economic freedom to correspond to a ‘good’ outcome such as faster growth, better living standards, more happiness, etc. Less than 4% of the sample found economic freedom to be associated with a ‘bad’ outcome such as increased income inequality. The balance of evidence is overwhelming that economic freedom corresponds with a wide variety of positive outcomes with almost no negative tradeoffs.”

in a negative relation to income inequality.¹³

I was not convinced by this story as I began thinking, in the mid-1990s, about how economic freedom might affect inequality. The importance of sorting this out stems from policy-making concerns: even if economic freedom is positive for growth, if people also value equality, the desirability of economic freedom could be questioned if it entails more inequality. On theoretical grounds, I argued (in Berggren, 1999) that the relationship between economic freedom and net income inequality is theoretically ambiguous. On the one hand, the first area of economic freedom relates to redistribution, and there one would indeed expect a positive relationship: more redistribution implies less economic freedom and lower net income inequality. However, on the other hand, economic freedom, through all its five areas, affects the gross income developments of both high- and low-income earners, and here it is theoretically unclear if these effects taken together benefit the income growth rates of which income group more. It could, e.g., be that lower and more stable inflation, a liberalization of trade or a strengthening of property rights benefit low-income earners relatively more than high-income earners. To take an example: If trade liberalization makes it possible for an industry in which many low-income earners work to export their goods to a higher extent, this can stimulate growth of their gross incomes. Hence, what we can say is that economic freedom is related to net income inequality, but we cannot say on theoretical grounds what the sign of that relationship is. There may be a trade-off, but this is not necessarily the case.

In Berggren (1999), I went about trying to find out more about this issue through empirical testing, and as such I contributed to initiating a small research field. I looked at how both levels of and changes in economic freedom (over ten years) related to income inequality in a sample of 66 countries. The results indicated that the levels of (changes in) economic freedom were negatively (positively) related to inequality, but the changes generally displayed more statistical significance and were especially valid for developing countries. The results also suggested that the short-term negative relationship could primarily be understood as a result of less redistribution, while the long-term positive relationship could be interpreted as low-income earners being able to benefit relatively more from trade liberalization. Scully (2002), on the other hand, found that the level of eco-

13 Inequality is a multifaceted concept and can refer to the distribution of a number of things, such as income, consumption, wealth, education and subjective well-being. Here, the focus is on income inequality.

conomic freedom is beneficial for income equality, by having a significant negative effect on the Gini coefficient. There is hence a tension here, as my finding for the level of economic freedom had the opposite sign. Admittedly, my finding was non-existent for developed countries and rather weak, statistically, for developing countries. Scully did not include developing countries (the sample contained only 26 countries), which could be one explanation for the seemingly opposite results (in addition to different modeling and different weighting of the EFW).

Unlike the two preceding studies, which used cross-sectional data, Carter (2007) used panel data and a fixed effects model to investigate the relationship for 39 countries over five-year periods from 1975 until 2004. The results indicate that the relation between economic freedom and Gini coefficients is generally positive and statistically significant, i.e., the more economic freedom, the more inequality. In terms of the size of the estimated effect, a one-percent increase in economic freedom is associated with an increase of the Gini coefficient of slightly less than one-half percent.¹⁴ There are good reasons to regard these results as more credible for the included countries, not least because of the panel approach and the related ability to use the same inequality measure within countries at different points in time. Some other reasons for the differences in results can be Carter's use of fixed effects, other control variables, a different sample and a different time period.

Bergh and Nilsson (2010) also employ a panel data approach, with around 80 countries for the period 1970–2005. It extends the Carter (2007) study by looking at a larger set of countries at different development levels and by examining the effects of the different areas of the EFW (in these two respects, this study bears some resemblance to my earlier study). They also primarily find that economic freedom brings about more income inequality, paying careful attention to using high-quality and consistent inequality data within countries. The magnitude is similar to the one found by Carter. It is especially area four of the EFW that seems to drive this result: i.e., liberalization of trade and capital flows. On the other hand, they find the opposite sign for area two, legal structure and security

¹⁴ Aside from differences in methodology and data, Carter (2007) also criticizes me for misinterpreting the results in Berggren (1999). I recognize that this critique is correct. By including both the level of economic freedom in 1985 and the difference between the levels of economic freedom in 1975 and 1985 in the same regressions, I in fact had two coefficients for economic freedom in 1985, which should be interpreted jointly. This in itself renders my conclusions uncertain: if anything, taking this into account seems to yield opposite signs of the short- and the long-term effects.

of property rights, although statistical significance is not attained in most regressions. The results mostly pertain to developed countries.¹⁵

This research field is still ongoing. It demonstrates, first of all, that economic freedom has a soft side to it, in the sense of influencing a widely held social goal concerning the relationship between those who earn high and those who earn low incomes. But it also demonstrates the scientific value of the EFW. Without it, there could have been no empirical studies. The process, with several studies being produced and presenting new (and sometimes contradictory) results, also illustrates that the data do not, as such, give “true” information about how variables relate to each other. The choice of methodology is always open to discussion. But without the data, the discussion is not possible. I trust it shall continue.

3. Economic Freedom and Social Trust

Social trust is among the most important socio-cultural characteristics a society can have. By social (or generalized) trust is meant widespread trust in people in general, in people one does not know or have particular information about.¹⁶ It reveals something fundamental about how people regard others in their society: what they expect from the behavior of random people. It thus also affects their own behavior: whether they feel comfortable interacting and engaging with strangers, especially when such interaction and engagement involves uncertainty and risk. A society in which there is high social trust can be expected to function differently than if it had consisted of distrustful people.

There is a growing body of empirical research that documents this to be the case. Social trust does matter for important social, economic and political outcomes – it seems conducive to, among other things, higher economic growth (Knack and Keefer, 1997; Zak and Knack, 2001; Berggren et al., 2008; Bjørnskov,

¹⁵ For two studies on the relationship within the United States, see Ashby and Sobel (2008) and Apergis et al. (2014). The former study identifies a negative effect of economic freedom on income inequality, which the latter also does for the long-term equilibrium case. But results from the panel error correction model used by Apergis et al. also suggest a bicausal relationship, such that high income inequality can generate redistribution that reduces economic freedom. Then, as economic freedom declines, income inequality increases further. This dynamic analysis may be promising also for future cross-country analysis.

¹⁶ This stands in contrast to particularized trust, which refers to trust in people one knows or knows something about, and institutional trust, which refers to trust in organizations (mostly political ones, such as the central bank, government and political parties). On the different concepts of trust, see Hooghe and Stolle (2003) and Naef and Schupp (2009).

2012; Horváth, 2013), more education (Bjørnskov, 2009; Papagapitos and Riley, 2009), better governance (Knack 2002; Bjørnskov, 2010), higher participation in the stock market (Guiso et al., 2008), more independent central banks (Berggren et al., 2014), more liberalizing reforms (Heinemann and Tanz, 2008), higher democratic stability (Uslaner, 2003), more comprehensive and stable welfare states (Bergh and Bjørnskov, 2011), smaller underground economies (D'Hernoncourt and Méon, 2012), faster increases of human development (Özcan and Bjørnskov, 2011) and higher rates of subjective wellbeing (Bjørnskov, 2006; Helliwell and Wang, 2011).

Consequently, a central question is why the populations in some countries are more trusting than in others.¹⁷ Since trust is a deeply embedded cultural trait that changes slowly (Bjørnskov, 2007), it is arguably not a variable that is easily affected by policy measures. Still, Henrik Jordahl and I came up with the idea that the character of economic and legal institutions, which also tend to be fairly stable over time and which also affect and structure people's ways of interacting with and regarding others, could play a role. We therefore undertook an empirical study that looked into this (Berggren and Jordahl, 2006), the main features of which I will now present.

We advance the hypothesis that there is a positive effect of economic freedom on trust. The basis for this hypothesis is a direct and an indirect effect of market institutions – the legal system and the protection of property rights. *The direct effect* stems from the rule of law creating an expectation that those who behave antisocially will be punished and that such behavior will therefore be quite rare. This in turn makes people trust others. *The indirect effect* stems from participation in the market process which the market institutions enable: such participation makes people trust because they experience that others are trustworthy in actual interactions, and from this a generalization takes place.

This is not to say that there could not be negative effects of market-oriented economics on trust. For example, Hirschman (1982) argues that there is a risk for market-based economies to entail commercialism, greed and adverse distributional patterns, which could erode civic assets such as social trust. In the end, it is an empirical issue whether economic freedom is beneficial or detrimental for the development of trust and to what degree.

More specifically, we make use of the EFW and its five areas to see how

¹⁷ This question is important irrespective of whether one approves or disapproves of these outcomes.

economic freedom affects social trust. We summarize our expectations in Table 1. As can be seen, there could be both positive and negative effects (although, as mentioned, we expect the former to dominate).

Table 1

Hypotheses on the Relationship between the EFW and Social Trust

Type of economic freedom	Expected effect	Motivation
EFW Economic freedom	-/+	incentives and mechanisms in a free economy tend to generate trust; but countervailing effects, as specified for EFW1, EFW4 and EFW5, may exist
EFW ₁ Size of government	-/+	hinder trust-building market mechanisms through taxation; provide trust-enhancing goods such as judicial system and education
EFW ₂ Legal structure and security of property rights	+	provide assurance that opportunists are punished
EFW ₃ Access to sound money	+	stimulate voluntary contracts and the trust that stems from such voluntary activities
EFW ₄ Freedom to exchange with foreigners	-/+	make citizens segmented and suspicious; make citizens realize that others are capable of displaying the same good behavior as domestic people
EFW ₅ Regulation of credit, labor, and business	-/+	could dampen opportunistic behavior; could hamper competition and breed rent-seeking

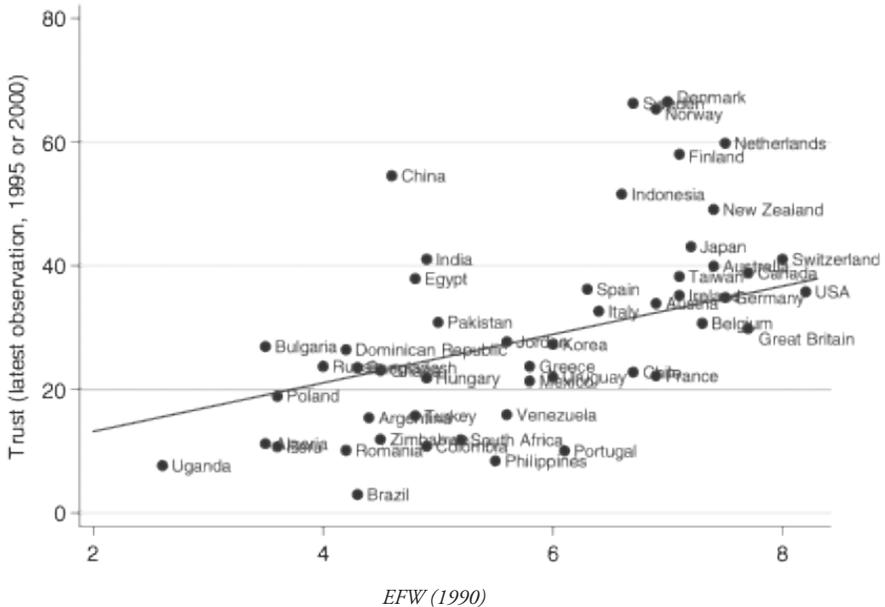
Source: Berggren and Jordahl (2006: 149).

As our measure of social trust, we use the standard one from the World Values Survey: the share of the population of a country or state which answers “most people can be trusted” to the question “In general, do you think most people can be trusted or can’t you be too careful?” In our sample of some 50 countries, the highest social trust, with shares slightly above 65 percent, is found in the Scandinavian countries. Three countries have scores below 10 percent: the Philippines, Uganda and Brazil. The U.S. score is 36 percent (position 17).

To get a feeling for the relationship, Figure 1 displays a simple plot between the aggregate EFW and social trust. As can be seen, the overall relationship is positive. However, we need to control for other possible determinants of social trust in order to isolate the effect of economic freedom. For that, we need to undertake regression analysis.

Figure 1

The Economic Freedom of the World Index and Social Trust



When we control for other possible determinants of social trust (GDP per capita, schooling, income inequality, religious fractionalization, the share of the population that belongs to a hierarchical religion and the share of people younger than 35), we find that the aggregate EFW is *positively* related to social trust in a statistically significant way, as are EFW areas 2 (the legal system and security of property rights), 3 (sound money) and (sometimes) 5 (regulation). To get a feeling for the magnitude of the relationship, an increase in economic freedom of one unit (on the ten-unit scale) is related to an increase in social trust of about 5 percentage points, a quite sizable effect.

As we find strongest support for a positive effect from area 2 (the legal system and security of property rights), which is also in line with our theoretical expectation, we perform more careful analysis of that area in trying to ascertain whether the effect is causal. For this purpose, we use instrumental variables in the form of legal origin (following La Porta et al., 1999, and Glaeser and Shleifer, 2002). We find support for a causal effect of this area.

To conclude this section, we began by noting that social trust gives rise to important socioeconomic and political outcomes, which in turn merits study into

the determinants of trust. We posited that market-oriented institutions could be such a determinant, and by making use of the EFW we found that they indeed seem to be. Especially one area of the index, the legal system and security of property rights, has a large, statistically significant and probably causal effect on social trust. We consider this an important insight, not least for developing nations lacking in this particular institutional area.

That the rule of law stimulates social trust is not difficult to understand. Through the existence of a legal system that is perceived to be fair and effective, economic actors know that voluntary contracts and rules in general are enforceable and can be relied upon. This enables them to trust other actors. But there is a second mechanism as well in that the economic process of exchange, which relies upon the legal system and property rights, can induce dispositions of trust to emerge.

This is an example of the soft side of economic freedom.

4. Economic Freedom and Tolerance

Not only social trust is an important feature of any society: social harmony based on tolerance arguably constitutes another valuable characteristic. Corneo and Jeanne (2009: 691) define tolerance as “respect for diversity”, and Florida (2003: 10) defines it as “openness, inclusiveness, and diversity to all ethnicities, races, and walks of life”. These broad definitions form the basis of my usage of the concept here.¹⁸ One important aspect is that they refer to social attitudes without differentiating between underlying motivations. It does not matter for being categorized as tolerant what the opinion of those to whom respect and openness is extended is. They may be liked or disliked, approved or disapproved of, loved or hated – irrespective of which, a tolerant person, as I define him or her, accepts the presence and participation of all kinds of people in society.¹⁹

Why is tolerance valuable? Not least, tolerance implies a better life for minorities of various kinds. By not being rejected in any active way by the dominant majority, whether in private life or in professional settings, people who are different can still participate in and feel part of the society in which they live. Corneo and

18 In a way, tolerance forms part of a society’s informal institutions (it entails norms regarding the treatment of others), and it can be compared to the concept of generality or government non-discrimination, as advocated by Buchanan and Congleton (1998), in the realm of formal institutions.

19 In contrast, one can hold that tolerance refers only to cases where someone is putting up with something he or she finds objectionable, but that more narrow definition is not employed here.

Jeanne (2009) note that minorities only enjoy protection against discrimination and full political rights in tolerant societies. Inglehart et al. (2008) also find that subjective well-being is higher in tolerant societies – not only, one can imagine, for minorities of various kinds but also for the majority, which harbors no ill will against others and allows everyone to join in on his or her merits. Part of the story here is that tolerance has economic consequences as well. In his study of historical conditions for economic progress, Mokyr (1990: 12) found that “innovation requires diversity and tolerance”. Florida (2003: 11) makes the following case:

Places that are open and possess *low entry barriers* for people gain creativity advantage from their ability to attract people from a wide range of backgrounds. All else equal, more open and diverse places are likely to attract greater numbers of talented and creative people – the sort of people who power innovation and growth.

This reasoning largely obtains support from empirical studies looking at the relationship between tolerance and economic development – see, e.g., Ottaviani and Peri (2006), McGranahan and Wojan (2007), Das et al. (2008), Florida et al. (2008) and Berggren and Elinder (2012). To the extent that one cares about these outcomes, it becomes natural to ask what determines the level of tolerance in society.

Therese Nilsson and I began to think about this issue and found that existing studies did not investigate whether economic and legal institutions might play a role. We found this lacuna disconcerting, both since tolerance in our view is desirable and since institutions have been shown, in other areas, to influence social outcomes. We therefore undertook a study relating the EFW to (three types of) tolerance (Berggren and Nilsson, 2013). Previous research found that other factors matter. For example, GDP per capita and becoming a member of the EU were positively related to tolerance towards homosexuals (Corneo and Jeanne, 2009), while income inequality stood in a negative relation to this type of tolerance (Anderson and Fetner, 2008). Spitz (2004) argues that the free-trade agreement NAFTA, and the economic contacts and exchange that it gives rise to, will contribute to making the United States more inclined to accept same-sex marriage. Clearly, there is room for systematic analysis of the role of market-oriented institutions.

Overall, we expected economic freedom to stimulate tolerance, both through the legal institutions that enable the rule of law and private property and through the market process. Market institutions create assurance in dealings with strang-

ers, since the generality of the rule of law guarantees that legal rules apply equally to everyone and since the legal system ensures that, with high probability, violators will be punished, which will deter opportunism. This tends to make people less suspicious of others, even if they are different.

These market institutions also enable the *market process*, the dynamic functioning of the market economy, which can stimulate tolerance in three ways:

- People can internalize a positive outlook on others through transactions that demonstrate that those who are different can be trusted.
- If people want to improve their lot, they realize that in a market economy this can come about through treating others on the basis of what they can contribute, not on the basis of characteristics such as race or sexual orientation.²⁰
- The market process tends to transform society over time, from the small, closed group (that exerts pressure on people to conform to one way of life) to the great society, where people need not try to control and dislike those who deviate from majority practices and characteristics.

There could also be a negative effect, if markets bring about greed and a perception that certain groups benefit in an unfair way from market exchange; if markets are anonymous and therefore bring about deceptive behavior; if markets crowd out altruistic sentiments; or if markets result in high inequality (see Hirschman, 1982).

From this general outline, Table 2 indicates what to expect for the five areas of the EFW. As can be seen, the net effect, overall and for several of the areas, is theoretically unclear (although our hypothesis is that the positive effects dominate).

20 Cf. Becker's (1971) theory of discrimination and the idea that firms that do not hire people because they happen to belong to some group, even if they are more productive, will tend to be out-competed in the market process over time, which tends to discourage discrimination.

Table 2

Hypotheses on the Relationship between the EFW and Tolerance

Type of economic freedom	Expected effect	Motivation
EFW Economic freedom	-/+	incentives and mechanisms in a free economy tend to generate tolerance; but countervailing effects, as specified for EF11, EF14 and EF15, may exist
EFW ₁ Size of government	-/+	certain expenditures, e.g., on education, can benefit tolerance; other fiscal variables can reduce it, if they are used to favor some at the expense of others
EFW ₂ Legal structure and security of property rights	+	an effective and fair legal system will make exploitative and opportunistic behavior less likely, which will increase tolerance
EFW ₃ Access to sound money	+	high and variable inflation causes redistribution that can be seen as unfair, which can create tension and intolerance; it can also entail blaming minorities
EFW ₄ Freedom to exchange with foreigners	-/+	can disfavor low-skilled labor and make citizens segmented and suspicious; can make citizens realize that others reliable, which can lead to more tolerance
EFW ₅ Regulation of credit, labor, and business	-/+	could dampen opportunistic behavior and thereby increase tolerance; could hamper competition and breed rent-seeking, which can reduce tolerance

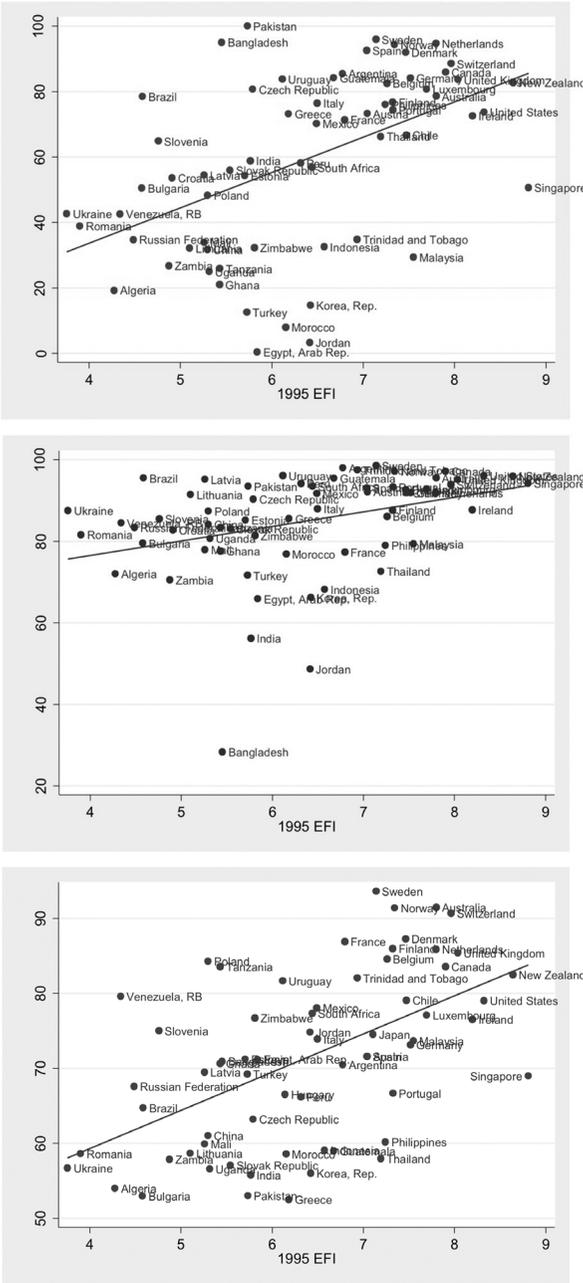
Source: Berggren and Nilsson (2013: 185–187).

Hence, time to turn to the data. Our empirical investigation makes use of three measures of tolerance from the World Values Survey and the European Values Study. The first, tolerance towards homosexuals, refers to the share of the population that does not pick “homosexuals” in answer to the question “On this list of various groups of people. Could you please mention any that you would not like to have as neighbors?”. The second measure, tolerance towards people of a different race, refers to the share of the population that does not pick “people of a different race” in answer to the very same question. The third measure, the importance of teaching kids tolerance, is calculated using the share of the population answering “Important” to the quality “Tolerance” when being asked the question: “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?”.

We can first take a look at simple plots between these tolerance measures and the overall EFW: see Figure 2.

Figure 2

The Economic Freedom of the World Index and Three Measures of Tolerance



Note: The diagram at the top shows tolerance towards homosexuals and, continuing downward, the others show tolerance towards people of a different race and the importance of teaching kids tolerance.

As can be seen, the relationship is positive in all three cases, but for tolerance towards people of a different race, the curve is rather flat, which indicates relatively little variation.

In order to disentangle whether EFW and its five areas are in fact related to the tolerance measures, we need to control for other possible influences. As control variables, we include the following ones: GDP per capita, education, the share of the working-age population that is young, the urban population share, family values, religious fractionalization, ethnic fractionalization, a dummy for Catholic religion, a dummy for Muslim religion, civil liberties, political rights and a set of geographical dummies. We then perform a number of regression analyses.

In our cross-sectional analysis, with a sample of almost 70 countries, we find that the EFW is positively related to all three tolerance measures in a statistically significant manner, but the strongest relationship, both in terms of significance and magnitude, involves tolerance towards homosexuals. In that case, an increase in the EFW of one unit (on the ten-unit scale) entails an increase in tolerance of about 7 percentage points. Looking at the five areas of the EFW, we find that in particular two areas drive the results: the second, the legal structure and security of property rights, and the third, access to sound money. For example, an increase of area two with one unit is related to an increase in tolerance towards homosexuals of almost 6 percentage points and to an increase in tolerance towards people of a different race, as well as in the importance of teaching kids tolerance, of almost 3 percentage points. The magnitude of the effect from the third area is about half the size (but it is not statistically significant for the race measure).

In order to ascertain that we identify a causal effect, we make use of two instrumental variables for the area of economic freedom where such variables could be found: area three, access to sound money; we also find the instruments valid for the overall EFW. As instruments, which seem unrelated to tolerance but related to this area of the index, we use central-bank independence and a dummy for experience with hyperinflation in the past. The results indicate that the relationship is causal, with statistical significance for the overall EFW and area three, access to sound money, and with slightly larger estimates.

In all, this study tried to fill a void in the tolerance literature by investigating whether market-oriented institutions were able to partly explain the prevalence of tolerance towards homosexuals, tolerance towards people of a different race and the view that it is important to teach kids tolerance. We found a positive and probably causal effect of economic freedom and for two of its areas, for reasons

explained briefly above. This is another indication that economic freedom has a soft side and contributes to bringing about a social outcome that is highly valued by many.

5. Concluding Remarks

James Gwartney is a major scientific entrepreneur, and as such he deserves praise. Through the EFW, he not only shaped my own research from the very beginning of my academic career, but also the research of many other scholars around the world. The important result of this influence has been the generation of new knowledge about how important goals, like economic growth, equality, social trust and tolerance, can be better achieved. For example, while it cannot be ruled out that reforms that increase economic freedom can be beneficial for income equality, especially if this takes the form of a better quality of the legal system, the most recent cross-country studies suggest a negative effect, at least for developed countries. A possible exception might be the United States, where a positive relationship has been established by two studies. This knowledge is important, because if one pursues liberalizing reforms, one may wish either to focus on areas where the inequality effects are relatively small or to counter the effects with conscious policy measures. With some other soft variables, economic freedom stands in a more harmonious relationship. Social trust seems to be stimulated by high quality legal institutions, for example; and tolerance, especially towards homosexuals but also towards people of a different race, likewise appears to benefit from economic freedom, especially from monetary stability and high-quality legal institutions. Positive results have also been found for other soft factors, such as subjective well-being, gender equality, civil war, ethnic violence, human development, education, health and human rights violations.

Admittedly, the research field documenting the consequences of economic freedom is still in its infancy. New areas can be investigated, and better methods can be applied. One aspect to look into further is the dynamic and quite possibly bicausal relationship between the soft variables and economic freedom. Just as economic freedom affects inequality, social trust and tolerance, these soft variables could also affect economic freedom. One can envisage virtuous or vicious circles here, where, say, trusting and tolerant societies are more prone to opt for economic freedom and where such societies perhaps also offer better protection of economic freedom through a pattern of mutual reinforcement.

In the meantime, until further research comes about, the EFW project continues to gather data, making it freely available to researchers everywhere, so that they can continue to document policy-relevant results. James Gwartney's commitment to the project makes me think that he is the type of person described by Brennan and Buchanan (1985: 147):

... [a person] alleged to place positive private value on "public good" for the whole community of persons, over and beyond the value placed on their own individualized or partitioned shares.

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Freedom and Economic Education: Jim Gwartney at the Crossroads

J.R. Clark¹

Human scarcity has always and will always exist, and the wealth and well-being of nations has always been determined primarily by what, how, and for whom those nations produce goods and services to satisfy human wants and needs. Wishful thinking to the contrary amounts to little more than an open denial of economic reality.

The Miller Upton Forum honors a scholar this year that has labored at the rarified crossroads of high level economic research and distinguished university teaching while making exceptional contributions to both. Publishing in the nation's most prestigious economic journals and producing one of the world's best-selling university economics textbooks, Jim Gwartney has reshaped economic theory, practice, and teaching simultaneously over a distinguished career spanning 50 years. He has distinguished himself in far too many areas of academic endeavor to be discussed with any justice in a single essay. And so, in keeping with my assignment I will address my remarks to only those areas which have made the largest impact on my own published research and teaching, i.e., his seminal contributions in the areas of freedom and free enterprise, both as a research economist and an economic educator.

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1. *Jim Gwartney, Freedom and Free Enterprise*

The 1960s were heady but tumultuous times for economists. The science was becoming increasingly abstract and mathematical. The monetarists were deconstructing Keynesianism, elevating monetary policy to equal footing with fiscal policy. Robert Solow's work in production functions was laying the foundation for modern growth theory. Market failure was infiltrating into public finance, providing more justification for regulation and government intervention. And, Jim Gwartney was about to emerge as a budding young student of economics under Douglass North.

In 1962, James Buchanan and Gordon Tullock published *The Calculus of Consent* explaining the effect of political structures and collective decision-making rules on the operation of the democratic political process giving birth to what came to be known as the "public choice revolution." Friedrich Hayek's work in classical liberalism fueled much of the "Reagan Revolution" of the 1980s and Hayek, Buchanan, and North went on to receive the Nobel Prize for their work in 1974, 1986, and 1993, respectively. Their work provided much of the logical analysis and resulting arguments supportive of free markets and freedom in general. But, regardless of how eloquent the logical analysis and arguments in support of freedom and free markets were, they remained quantitatively toothless, and widespread acceptance of economic theory tends to require significant quantitative support.

Into this quantitative void stepped two major voices, Milton Friedman and James Gwartney, who set out to develop the necessary data to compare the performance of free markets and free economies with those that were less free. They asked the questions: "Is freedom prosperity?" and, if so, "How and why?" and "What evidence is the conclusion based upon?" The questions were not new, but indeed the proof required to answer them was. Arising from the initial efforts of Friedman and Gwartney, today a worldwide network of organizations loosely referred to as "The Freedom Network" actively collect, analyze, and publish annual indexes of economic freedom, from over 120 countries reporting upon changes in freedom and the resultant effects upon almost all aspects of human progress. The evolving evidence grows more robust with each annual report and has become virtually undeniable in academic circles today. Freedom is prosperity. And prosperity is a critical component in almost all forms of human progress. The most prominent connections between the two are that nations which respect per-

sonal choice, voluntary exchange, the freedom to compete, and the security of privately owned property enjoy far higher GDP and growth rates in GDP, higher income per capita, less income inequality, faster capital accumulation, longer life expectancy, greater self-reported life satisfaction, less corruption, greater civil and political freedoms, lower unemployment rates, lower homicide rates, less interpersonal conflict, and higher environmental quality.

1.1 Freedom, Prosperity, Entrepreneurship, and Migration

Freedom and Prosperity

Jim Gwartney's work in freedom spawned threads of inquiry in prosperity, entrepreneurship, and migration, which have significantly manifested themselves in the research I have published with others. The first of these in Gwartney, Lawson, and Clark (2005) reported on the growing levels of economic freedom in the world resulting from increased stability in monetary policy, declines in the use of high marginal tax rates, the liberalization of exchange-rate controls, tariff rate reductions, expansion in the trade sector, and reduced controls on both capital markets and interest rates. This line of research was further extended in Clark and Lawson (2008) to address the comparatively inferior results of using progressive income tax rates to produce income equality compared to stronger measures of private property rights, sound money, trade openness, and limited government size.

The article with the greatest impact regarding the general relationship between freedom and prosperity with which I have been involved appeared in 2010 in the *Journal of Economic Behavior & Organization*, co-authored with Robert Lawson. This paper examined empirically the hypothesis made famous by Nobel laureates Friedrich A. Hayek and Milton Friedman that societies with high levels of political freedom must also have high levels of economic freedom. The Hayek-Friedman hypothesis held up fairly well to historical scrutiny. Using data on economic and political freedom for a sample of up to 123 nations back as far as 1970, we found relatively few instances of societies combining relatively high political freedom without relatively high levels of economic freedom. In addition, we found that such cases were diminishing over time.

A third and fourth examination of the freedom and prosperity link appeared in Cebula and Clark (2012) and Cebula, Mixon, and Clark (2013) which quantitatively examined the positive effects of freedom upon per capita real GDP and

then several other measures of economic growth in the OECD nations. The results strongly supported the positive and critical role that economic freedom plays in a nation's economic growth and prosperity and the importance of pursuing policies that are consistent with increasing economic freedom.

Freedom and Entrepreneurship

Freedom has also been shown to exert significant positive effects upon entrepreneurship and I and others have pursued this thread with some success. Beginning in 2006, Dwight Lee and I analyzed the relationship between freedom, entrepreneurship, and economic progress arguing that the most fertile soil for the seeds of entrepreneurship consisted of the freedom and informed discipline that characterize market economies. In markets, freedom and informed discipline reinforce each other in ways that allow entrepreneurial failures to be tolerated through a process of restraint and knowledge creation that converts them into engines of economic progress. Unfortunately, when economies become overly politicized, entrepreneurial ventures become suppressed, not because of their failures, but because of their successes.

The greatest impact among economists that my involvement with this thread has enjoyed came in 2007 with a more quantitative article with Russell Sobel and Dwight Lee examining the relationship between freedom, barriers to entry, and economic progress. We argued that producers lobby government to secure barriers protecting them from potential competitors. When governments enact barriers, entrepreneurial ventures can become suppressed, not because of their failures, but because of their own successes. Import tariffs can be imposed to protect existing firms from foreign competitors, while government licensing requirements and other regulations can be imposed to protect them from other domestic rivals. We found that entrepreneurship, widely recognized as a key ingredient to economic growth, depends heavily upon both the freedom to succeed and discipline of failure that market based economies provide. More politicized economies do indeed erect both more internal and external barriers, and the result is less entrepreneurship and slower economic growth. We also provided evidence of the valuable role played by markets in forcing entrepreneurial failures and preventing entrepreneurs from converting their unsuccessful dreams into taxpayer-supported losses and excessive consumer costs.

Freedom and Migration

Richard Cebula and I have made several contributions to a third thread in the freedom literature concerning the quantitative relationship between freedom and migration. In 2011, we produced an empirical analysis of the relationship between economic freedom and personal freedom where we argue that economic freedom increases market efficiency, growth, development, and individual prosperity. We empirically investigated whether higher levels of economic freedom, as well as higher levels of personal freedom, act like magnets for persons residing in a free society to move. In other words, do the prospects of both greater economic and personal freedom in any given state vis-à-vis other states act to induce a greater influx of migrants? Based upon data of domestic migration between 2000 and 2008 and the equivalent freedom scores of states, we found clear evidence that migrants prefer to move to states with greater economic freedom and greater personal freedom.

In 2013, Cebula and I extended the 2011 freedom based modeling structure to develop a Tiebout Hypothesis of Voting with One's Feet in regard to Medicaid benefits. In addition to investigating variables reflecting public education outlays, property taxation, and income taxation, we tested whether migrants were attracted to states with higher Medicaid benefits per recipient. We referred to this hypothesis as the "Medicaid magnet." Our analysis included three economic variables, three quality of life variables, and three Tiebout-type factors in addition to Medicaid benefits. Our results indicated that consumer voters were attracted to states with higher per pupil public school spending, lower property and income tax rates, and that certain consumer-voters may be attracted to states that offer higher levels of Medicaid benefits.

2. Jim Gwartney and Economic Education

In addition to being a prolific researcher with significant impact, Jim Gwartney produced one of the world's most successful Principles of Economics college textbooks. And, in that crowded and extremely competitive market fray, he has achieved the greatest and most lasting success at freedom in economic education. Through 14 editions, Jim's *Economics: Private and Public Choice* has educated generations of economists and the millions of students they have taught about the importance of analyzing choices in both the private and public sectors from the same homo-economic perspective. He is the only author to effectively integrate

the public choice revolution into the college curriculum. And in doing so, he has also been a major contributor to the paradigm shift taking place in economic methodology since the early 1970s. Gwartney has in fact lead the way with his principles text in educating generations of economists away from the older value paradigm in economic theory and methodology toward the newer exchange paradigm discussed by Meir Kohn in 2004 and 2007 and further assessed by Brian Douglass in 2012 and Peter Boettke, Alexander Fink, and Daniel Smith in 2012.

Most economics textbooks today do three things. They teach students an idealized hypothetical model of the market economy, explain why real markets fail to operate like that hypothetical ideal, and how ideal public policy could correct the failures of the real market. To this, Jim Gwartney's books add an analysis of what real world public policy is likely to do. This addition of public choice analysis explains the difference between the ideal theoretical solutions of economists and the events of the real world which puzzle students so much. These analytical tools illustrate why "good politics" frequently conflicts with "good economics" or the economic efficiency economists are proud of illustrating. Gwartney concedes that it is important to explain what government can do to promote more efficient use of resources. But, the tools of public choice economics contribute greater understanding of the problem. They permit an explanation of why there is good reason to expect that public sector actions will be counterproductive for certain types of issues.

McKenzie and Tullock in 1978 and Ecklund and Tollison in 1986 made significant inroads extending public choice analysis to the principles textbook market for a combined total of five editions. However, Jim Gwartney is literally the only economist consistently imparting this view on a global scale for the last 38 years. His text continues to develop through the 14th edition, selling millions of copies worldwide in multiple languages.

It is simply undeniable that Gwartney has made a significant difference in understanding freedom and free enterprise in economic education. But he himself would agree that his work is far from done and that the "public choice revolution" is far from complete. The vast majority of students are still taught that while homo economics might be the relevant decision model in the private sector, somehow, choices in the public sector are made differently. In his 2011 address to the American Economic Association, Gwartney argues that

Rather than analyzing how both markets and collective decision-making handle economic problems, mainstream economics continues

to model government as if it were an omniscient, benevolent social planner available to impose ideal solutions. The highly successful text of Greg Mankiw illustrates this point. Mankiw introduces his discussion of the role of government and the correction of market deficiencies in the following manner: To evaluate market outcomes, we introduce into our analysis a new, hypothetical character called the benevolent social planner. The benevolent social planner is an all-knowing, all-powerful, well-intentioned dictator. The planner wants to maximize the economic well-being of everyone in society.¹

Mankiw then asks what the benevolent social planner should do and goes on to consider the ideal solutions that might be imposed through the political process. The other leading mainstream texts follow this same approach. Implicitly, this methodology treats the political process as if it is a corrective device available to impose ideal social outcomes, something like a pinch hitter that always delivers the game-winning hit. But this is a fantasy. A choice between the real world of markets and the hypothetical ideal of government intervention is not an option. Instead, the choice is always about how markets work compared to the alternatives. Put another way, the relevant choice is always between the real-world operation of markets and the real-world operation of the political process.

The omission of public choice in economic education creates a central planning mentality that omits the reality that central planners do not have the information required to plan effectively, the planned solutions themselves alter incentives and produce secondary effects contrary to the intent of the planner, and politicians are more interested in winning elections than implementing ideal plans. As a result, there will be conflicts between “good politics” and “good economics” specifically, economic efficiency.

The bias toward market intervention and central planning usually omits analysis of, or even the possibility of, government failure. Mainstream principles texts explain market failure through monopoly, externalities, economic instability, and public goods and treat government action as an ideal corrective device. However, the possibility of government failure resulting from the well-defined principles of

1 Professor Mankiw's (2012, 145) analysis of government intervention is representative of the mainstream perspective. Mankiw was the Chairman of the President's Council of Economic advisors under George W. Bush and is generally viewed as a supporter of a market economy.

public choice including the short-sightedness effect, the special interest effect, and rent-seeking are noticeably absent. This degree of imbalance in course content leaves students unable to understand and explain some of the most important economic events of modern times, not the least of which has been the last two presidential administrations inability to spend their way out of the Great Recession.

2.1 Clark and Lee on Advanced Placement Economic Education

The educational bias toward market intervention and a central planning mentality extends far beyond college level education in economics. The effect of this asymmetric view is particularly pernicious when considered in the light of the public and political reactions to the advent of the Great Recession in 2007. Dwight Lee and I reported on this issue and the continuing rancorous debate on the proper role of government in a market economy in *Investors' Business Daily* in 2011. The proper role of government is both a critical question and the source of significant political controversy. It has produced a sharp divide between those who favor limits on government's interference in markets and those who favor government action to correct market failures that are believed to be the cause of a wide range of social problems. While unanimity or even consensus is unlikely to be reached, intellectual coherence can be added to the debate by making realistic comparisons between markets and government with basic economic analysis. Unfortunately, our most intellectually gifted high school students are also given a biased comparison in economic courses that favors government over markets.

Qualified high school students can take Advanced Placement (AP) courses in economics (as well as other subjects) that, when successfully completed, give them credit for economic principles courses in many colleges. The College Board provides high schools with teaching materials on the topics to be covered and exams to be given in economics courses. Relatively complete information on the topics and general coverage of the exams in the AP courses is available at <http://apcentral.collegeboard.com>.

This College Board website clearly illustrates that concepts critical to understanding why markets work well are omitted and those that point to what are known as market failures are highlighted. Within the AP curriculum, there is no mention at all of private property rights, competition as a dynamic process, en-

trepreneurship and creative destruction, prices as the most effective way of communicating dispersed information, or the self-correcting power of markets. On the other hand, market failures resulting from externalities, monopolies, and lack of perfect information are well-represented. And to make sure teachers emphasize market failures in class, from 10% to 18% of the AP exam in microeconomics tests these failures.

Economists would contend that there is not anything wrong with teaching about market failures. To fail to do so would be an error of omission. Real-world markets are indeed imperfect, just like everything else, including government. But the College Board, the national accrediting body for AP courses, apparently believes government failure is not a suitable topic in economics courses. Nowhere in AP teaching guides, or on the AP exams, is there a single reference to the economic analysis showing that governments systematically fail for the same reasons markets fail. Instead, having identified inefficiencies caused by market failures, AP courses explain how government policies can correct those failures with some combination of taxes, subsidies, or regulations. Never mentioned is that these “corrections” invariably result from government failures which often make the situation worse. In effect, the AP curriculum both teaches and tests for a choice between the real world shortcomings of markets and the hypothetical ideal of government intervention leaving students with the impression that government is an omniscient, benevolent social planner available to impose ideal solutions. With many of the nation’s brightest of students taught this line of thinking annually, would it not be reasonable to consider the possibility of such a situation contributing to creeping socialism?

2.2 Economic Education and Economic Efficiency

The bias in economic education has pernicious effects in both the market place and the voting booth. For citizens to make effective choices in either, they need to understand how the economy in which they earn, consume, and vote actually works. The benefits of economic efficiency are pretty elusive to those who know neither what it is, nor how to achieve it.

In addition, effective economic education is a continuing process. No matter how good a job is done today with the current class of students, faculty have to get up tomorrow and repeat the process with the next. Each new generation has to be taught all over again that freedom is prosperity, that freedom is not free, and why. More importantly, frequent reminders to those already taught are necessary.

For example, the research literature on the lasting effects of economics instruction indicate that five years after taking an economics course, there is no statistically significant difference in the standardized tests scores between those who have and have not ever taken an economics course. Worse yet is the fact that after 40 years of building an economic education bureaucracy with over 250 centers for economic education nationwide and millions of federal dollars expended each year in the pursuit, there has not been any statistically significant increase in average standardized test scores in economics.

2.3 Jim Gwartney and Secondary Effects

Inherent within the contributions of public choice analysis to economic science are the concepts of secondary effects and Bastiat's law of unintended consequences. Jim Gwartney's books popularized these concepts to a much broader professional audience and became the progenitor to the Clark and Lee (1997) article "Too Safe to Be Safe," which is now still cited worldwide in the 14th edition of his text and more broadly in the research literature and popular media. In this work, Dwight Lee and I extended Gwartney's popularization of secondary effects to government rescues of mountain climbers. The point of the analysis was that the initial well-intended effect of federal government rescue attempts to save troubled climbers on Mount McKinley may have been a minor reduction in the death toll. However, over time, climbers tended to impute the assumed rescue attempts into their risk reward calculus. This significantly increased both the number of attempted climbs and the number of genuinely unprepared and insufficiently trained climbers producing both an increase in the long term death toll and public outcry for even more rescue attempts. Eventually, there was a noticeable positive relationship detected between increases in rescues and increases in deaths. The more climbers were rescued, the more were killed. We actually developed a Laffer curve model tracing out this relationship, illustrating the optimum level of risk and explaining, with the aid of public choice analysis, why politicians would never be able to reduce the death toll on Mount McKinley. The article still gets citations today, was some of the basis for one of John Stossel's (2009) ABC video commentaries on the topic, and formed the basis for both a *New York Times* article and an article on rescuing hikers with spot locators (the new emergency locator technology) in *Regulation* (Kaufman 2010; Regan 2010).

2.4 Jim Gwartney and Economic Education

Modeling Structures

I began teaching introductory economics to MBA students in 1980 with Jim Gwartney's second edition and joined with him and Richard Stroup in a project to publish a one semester Survey of Economics text for that segment of the market in 1982. To say that I was greatly influenced by the experience would be an understatement. I became immersed in teaching a model that could readily explain the everyday occurrences evolving out of the Reagan Revolution which the MBA students were so eager to know and ask questions about. The book was a sizeable and puzzling success with adoptions at schools ranging from The University of Chicago to community colleges whose names I neither knew nor could locate on a map. It enjoyed two editions in English and Japanese and led to Academic Press offering me a contract to publish my own two semester text surprisingly to compete directly with the Gwartney volume.

This was heady stuff for a young economist, a taste of fame and a little fortune earned on Gwartney's coattails was more than enough to entice him into believing that perhaps any well trained economist could do it if he worked hard enough. Just working hard enough was sufficient to publish the book and be compensated accordingly, but insufficient to compete with the skill and work ethic of the master in a marketplace he was actually reshaping himself. Jim Gwartney was moving significant segments of the market away from the value paradigm toward the exchange paradigm and reverberating changes in the broad based methodology used by economists.

This shift manifested itself in some of my research on the teaching and learning process as well. Up to that time, almost all of the research in economic education was concerned with measuring gains in student learning in economics courses by pre and post test scores on standardized tests. Basically, it was regressing gains on demographic and teaching factors. The idea of teachers and students engaging in a joint production function driven by the relative costs and benefits of each in both the production of gains and the distribution of rewards was novel to say the least. In Clark and Idson (1987) and (1990), this joint production function which considered the exchange, i.e. the terms of trade between faculty, was published and produced some moderate discussion among professional economic educators. The very idea that faculty might be able to increase gains in learning by say raising the student time price of receiving any given grade was controversial.

At the same time, value paradigm methodologists were making efforts to move the faculty from the position of the “sage on the stage” to the “guide on the side” with much more complete reliance on “Socratic method” and non-directed learning.

2.5 Jim Gwartney as Mentor

Perhaps Jim Gwartney’s most notable contribution to economics has been his value as a mentor and role model for so many other economists. While the economics profession in general tends to recognize and reward eloquent research above teaching, Jim Gwartney has always done what he thinks is important. He has published in the most elite economics journals, but always placed more of an emphasis in his professional life on both excellent teaching and the development of economists who can do likewise. He has produced legions of successful graduate students who are both gifted researchers and storied teachers, with Robert Lawson and Russell Sobel being some of the most prominent. Beyond the graduate students under his direction, Jim’s texts have made quite a few excellent teachers out of those who were indeed less than excellent and taught them a significant amount of economic theory in the process.

He has always guided promising young scholars with both word and deed to achieve their potential and his leadership as Director of the Freedom Project, and as President of The Association of Private Enterprise Education (APEE) have provided global opportunities for many young scholars to excel in teaching and research. His presidency of the Southern Economic Association was a noted success both for its spotlight on teaching and the Freedom Project and his Presidential remarks in tribute to James Buchanan in 2013 reminded the profession of the importance of good teaching to produce good economists. Finally, Jim’s creation of the Stavros Center at Florida State University has become a nationally recognized resource in teaching excellence and trained hundreds of highly skilled teachers who have gone on to win national recognition for their excellence.

3. Conclusion

I am but one of a very large group of economists who Jim Gwartney’s 50 year career influenced both positively and extensively. As a teacher, he was both an outstanding example and prolific producer of exceptional instructional material. He brought the latest research in many subdisciplines directly into those materials in

a readable fashion which students could understand. And in reality, those faculty who used the texts extensively actually became active students themselves learning from Jim and his book as they went along. Through 14 editions and 38 years, a great many faculty and millions of their students have learned the most important lessons in economics: How the economy actually works and how individuals in both the private and the public sectors actually behave. The rest of it is just wishful thinking.

As a researcher, Jim championed freedom and free enterprise providing the actual raw data and then much of the modeling methodology to develop meaningful explanations and strong evidence as to why freedom is prosperity. Throughout all of these endeavors over 50 years he remained the tenacious researcher, inspirational teacher, consummate gentleman, supportive colleague, and genuine class act that is Jim Gwartney. The economics profession, his colleagues, and the millions of students who have learned from his work all owe him a debt of significant gratitude.

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Culture and Freedom

Claudia R. Williamson and Rachel L. Coyne¹

1. Introduction

Economists have long posited that institutions matter for economic success, but how they matter is a question much more difficult to answer. With countless studies showing a positive link between the formal institutions of economic freedom and growth and recent studies illustrating the link between informal cultural attributes and economic growth, it is clear that institutions are important (see De Haan et al., 2006 for a survey on the importance of economic freedom and economic outcomes). This chapter contributes to the literature exploring the relationship between economic freedom, culture, and economic growth and development. The results of Williamson and Mathers (2011) and Mathers and Williamson (2011) are reviewed and expanded, providing further evidence of the complicated and important relationship between formal and informal institutions and their consequences for economic outcomes. Prior to understanding how culture and economic freedom affect economic decisions, it is necessary to understand what institutions are and what the difference is between the institutions of economic freedom and culture.

Institutions are the “rules of the game” (North, 1990), both formal and informal, which provide incentives that guide individual action. In other words, institutions are the broad rules that guide individual choices and social interaction. Formal institutions include written rules and codified structures, while informal institutions are inclusive of sociological considerations such as culture,

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ideology, norms, values, preferences, and conventions enforced by social custom. When defined in this manner, the term “institutions” captures all of the subjective costs that structure the relative alternatives available for individuals to pursue their ends.

Formal institutions can be thought of as part of a framework within which individuals act. The formal institutions associated with economic freedom encourage productive activities. Perhaps the most important of these formal institutions is secure private property rights. Other institutions compatible with an environment of economic freedom are courts that enforce contracts and checks and balances that limit government predation, often reflected in low taxes, limited regulation, and a small public sector. When government refrains from intervening in the economy and, instead, limits itself to enforcing the general rules of the game, an environment conducive to economic freedom is the result.

Informal institutions, while not written or codified as law, are backed by social custom (Boettke and Coyne, 2009; North, 2005). Although cultural norms and mores are not written as formal laws, individuals abide by these traditions. These cultural aspects of behavior can be thought of as the unwritten rules governing behavior. While formal institutions hold power in the legal consequences of breaking the rules, informal institutions hold power in the social consequences for individuals who choose not to ascribe to these norms of behavior. For example, social ostracism or outright banishment from a group are potential consequences for not abiding by cultural norms and traditions—such as following particular behavioral rules, dressing in a certain manner, or speaking a particular language.

In many cases, formal institutions are built upon existing informal institutions. This happens when a behavior becomes so ingrained in local custom that it is then codified into a formal written rule. Given that these formal laws are merely written versions of behaviors already observed in practice, they tend to be easily enforced at a relatively low cost. This line of reasoning hints at one element of analyzing how institutions matter and why the interaction between informal and formal institutions is imperative to understand. By doing so, it enhances understanding of how to facilitate policies and practices which promote economic growth around the globe.

Williamson and Mathers (2011) examine the effect of economic freedom and culture on economic growth, including both variables in growth regressions to determine whether they are complements or substitutes. Following up on this line of questioning, Mathers and Williamson (2011) investigate whether culture en-

hances or diminishes the effects of economic freedom on economic growth. This chapter explores these findings and includes expanded results to test the original findings.

The chapter proceeds as follows. Section 2 explores the theoretical links between economic freedom, culture, and economic growth, providing the conceptual answer to how institutions matter for growth. Section 3 investigates whether economic freedom and culture are substitutes or complements and discusses the implications of these results. We also examine the interaction between culture and economic freedom to analyze whether culture enhances or diminishes the productivity of capitalism. Finally, Section 4 concludes with a discussion of what this research implies for economic growth and related policies.

2. Links to Growth

Economists have long argued that the formal institutions associated with economic freedom have a positive link with economic success. “Since the time of Adam Smith, if not before, economists and economic historians have argued that the freedom to choose and supply resources, competition in business, trade with others, and secure property rights are central ingredients for economic progress” (De Haan and Sturm, 2000: 3). Innumerable studies have established the positive correlation between economic and political freedom and economic growth (Goldsmith, 1995; Leblang, 1996; Scully, 1992) and economic freedom and growth (Berggren, 2003; Gwartney et al., 1996; Scully and Slottje, 1991). Other studies have demonstrated the link between particular institutions of economic freedom and economic growth. For example, empirical studies have linked private property rights to economic growth (Berggren and Karlson, 2005; Goldsmith, 1995; Torstensson, 1994). Perhaps the most popular measure for economic freedom is the Economic Freedom of the World Index, which groups components of economic freedom into the following categories: size of government; legal structure and security of property rights; access to sound money; freedom to trade internationally; and regulation of credit, labor, and business (Gwartney et al., 2011). De Haan et al., (2006) survey the literature using this index and find support for the positive relationship between economic freedom and economic growth.

Though these studies, and many more, have provided ample evidence of the importance of economic freedom for economic growth, they do not speak to the effect of culture, or informal institutions, on economic growth. Empirical studies on the impact of culture on economic outcomes demonstrate a strong relation-

ship between economic performance and culture (Guiso et al., 2006; Licht et al., 2007; Tabellini, 2008). Other studies also analyze the impact of culture on economic growth (Boettke and Coyne, 2009; Francois and Zabojnik, 2005; Pejovich, 2003; Williamson and Mathers, 2011; Zak and Knack, 2001). There are a variety of empirical studies that examine the impact of specific cultural attributes, such as religion (Grier, 1997; Barro and McCleary, 2003), on economic growth and development.

Though the empirical studies of culture and its impact on economic growth are a relatively recent addition to the economic development and economic growth literature, economists have long provided economic theory and intuition belying these results. For example, Weber (1905: 19) described the 'spirit of capitalism,' positing that the Protestant ethic of striving for profit was important to the development of capitalism in northern Europe. Even earlier, Tocqueville (1835) described the culture in America in a similar vein. The theoretical explication of culture's importance for economic success has continued into recent economic literature. For example, McCloskey (2010) explains that a change in cultural values spurred entrepreneurship that led to the industrial revolution. North (2005) also investigates the impact of informal institutions on economic outcomes.

In spite of the many studies demonstrating the positive relationship between formal institutions of economic freedom and economic growth and informal economic culture and economic growth, there is a gap in the literature regarding how informal and formal institutions interact with each other to impact growth and whether informal and formal institutions are substitutes or complements. In other words, does having the formal institutions of economic freedom mean that the informal institutions are less important or vice versa? Further, do the informal and formal institutions need to match in order to have strong economic growth? These are some of the questions addressed in our previous work (Williamson and Mathers, 2011 and Mathers and Williamson, 2011).

The literature in this area is limited, but there are some studies in this line of questioning. For example, Claudia Williamson (2009) finds that economic development is strongly determined by the existence of well-developed informal institutions, no matter the strength of formal political constraints. Studies have indicated the importance, both directly and indirectly, of informal institutions for economic development and growth. Tabellini (2009) investigates the direct relationship between culture and economic development across European countries and finds a strong causal relationship. There are several other studies examining

the relationship between informal institutions and economic outcomes (see, for example, Guiso et al., 2006; Licht et al., 2007; Tabellini, 2008; Tabellini, 2009). Others have empirically investigated the indirect relationship between culture and economic success (Licht et al., 2007; Williamson and Kerekes, 2011). Some economists have even argued that where government is corrupt, relying on informal institutions alone can lead to better outcomes (Leeson, 2007; Powell et al., 2008). These studies provide reason to believe that culture may be capable of substituting for formal institutions, providing functions and roles typically attributed to formal institutions.

We take inspiration from these studies and empirically analyze whether culture (i.e., informal institutions) and economic freedom (i.e., formal institutions) are substitutes or complements (Williamson and Mathers, 2011). Our main finding is that culture and economic freedom behave as substitutes. These results have significant implications for economic development and growth. As substitutes, this implies that there is still an opportunity for growth in areas with corrupt or nonexistent formal institutions, since the informal institutions consistent with growth can act as a substitute for the missing formal institutions consistent with growth. Another implication of this argument is that, once formal institutions of economic freedom are established and effectively functioning, the informal institutions may diminish in empirical importance, since the formal institutions will now take over and drive economic growth.

This still leaves the question regarding the interaction between formal and informal institutions and the impact of this interaction on economic growth. Is the match between formal (i.e., economic freedom) and informal (i.e., culture) institutions important for economic outcomes? Some economic literature begins to answer this question by addressing the importance of informal institutions in the establishment of effectively functioning formal institutions. Though the application of modern empirical techniques to this question is new, this line of questioning has existed historically throughout economic thought. Hume (Hendel, ed. 1953) recognized the importance of culture and its impact on formal institutions, noting that the “ancient fabric” of a society is integral in the creation or alteration of formal institutions.

Building on this line of reasoning, recent studies have re-emphasized the critical importance of examining the relationship between informal and formal institutions. Grief (1994) and Putnam (1993) note that culture must be an essential concern when creating successful, self-sustaining economic development strate-

gies. Oliver Williamson (2000) explains that significant changes in culture take a long period of time, so formal institutions aren't likely to last long if they conflict with existing informal norms. Given culture's ability to impact the success of formal constraints (Boettke and Coyne, 2009; Williamson, 2009), economic logic indicates that we should expect a match between formal and informal institutions of economic freedom to yield greater economic growth than a mismatch between the two. In other words, where formal institutions of economic freedom build on a culture consistent with economic freedom, economic growth is expected to be greater than cases where formal institutions of economic freedom are instituted in areas where the culture is not aligned with freedom. As Boettke et al. (2008) put it, formal institutions "stick" where they map onto informal rules. North (2005) describes the feedback process wherein formal and informal institutions affect economic growth. Culture can, in a sense, be thought of as a filter through which formal constraints must pass; if the culture complements economic freedom, formal constraints are expected to be viewed more credibly and, thus, be more binding and successful.

In light of this argument, analyzing both culture and economic freedom simultaneously provides some explanation for why similar economic institutions can translate into strikingly diverse economic outcomes across the world. Previously, we examined this relationship by analyzing the interaction of culture and economic freedom in regression analysis across countries (Mathers and Williamson, 2011). If having a culture consistent with economic freedom can enhance the productivity of formal institutions of economic freedom, this has significant implications for international economic development policy. Where formal institutions of economic freedom are installed in a country with a culture contrary to these formal institutions, economic growth expectations should be lower than in cases where the culture is consistent with economic freedom. In other words, the productivity of capitalism is impacted by the existing cultural norms. This isn't to say that pro-market reforms to formal institutions should be resisted.

As noted previously, many studies have shown that economic freedom has a positive impact on economic growth and development. As far as economic development is concerned, economic freedom paired with a culture counter to freedom is better than a lack of economic freedom and a culture contrary to freedom. However, the *best* results are to be expected in cases where both the formal and informal institutions are consistent with economic freedom. The next question is whether the results are consistent with this economic theory. The following sec-

tions provide both an overview of previous studies and newly updated results to determine whether these findings still hold.

3. Empirical Evidence

In previous work, we argue that while both culture and economic freedom are independently important for economic prosperity, economic freedom is more important than culture (Williamson and Mathers, 2011). The findings indicate substitutability between economic freedom and culture, leading to the conclusion that culture is important for economic growth where economic freedom is lacking, but culture's significance decreases once economic freedom is instituted.

To reach these conclusions, we utilize the Economic Freedom of the World Index, mentioned previously, as the measure for economic freedom (Gwartney et al., 2008). Culture is measured using the World Values Surveys to quantify the values of trust, self-determination, respect, and obedience (The EVS Foundation and the WVS Association, 2006). We find that economic freedom, reflected in institutions supporting private property rights, enforcement of contracts, and rule of law, has a strong, positive, and significant direct impact on economic growth. Culture is found to have a more mild, yet still positive and significant direct relationship to economic growth. However, once both culture and economic freedom are included in the same regression analysis, culture only remains significant in one out of seven regressions, lending credibility to the substitution hypothesis.

In a follow-up study (Mathers and Williamson, 2011), we investigate the interaction between culture and economic freedom and the impact of this interaction on economic growth. Utilizing the same data sources for economic freedom and culture as in Williamson and Mathers (2011), we create an interaction term by multiplying the culture index with the economic freedom index. Again we find that economic freedom directly impacts economic outcomes. The new revelation in this work is that the productivity of economic freedom (i.e., capitalism) is strongly enhanced by culture. Capitalism does, in fact, perform better when embedded in certain cultures. More specifically, a culture rich in trust, respect, and individual self-determination, without a strong sense of obedience raises the productivity of economic freedom by supporting and providing legitimacy for the rules associated with economic freedom. In this way, culture plays a critical role in determining the success of economic freedom.

We find that culture enhances the impact of economic freedom on growth by roughly 10 percentage points. A one standard deviation increase in initial freedom

increases growth by approximately 1.10 percentage points, while a one standard deviation increase in the interaction term (for example, going from Rwanda to India) increases growth by approximately 1.5 percentage points. These results affirm the economic logic mentioned previously, providing evidence that economic freedom will be more successful when these formal institutions are compatible with existing informal institutions. A culture of freedom provides the building block for successful formal institutions of economic freedom, providing the glue that makes formal institutions stick (Boettke et al. 2008).

To see if these results still hold, we update the dataset by expanding the time period to include the most recent years. For example, economic growth and GDP per capita (log) are measured from 1980 to 2012 and collected from World Development Indicators 2013. The economic freedom index, taken from *Economic Freedom of the World: 2013 Annual Report* (Gwartney et al., 2013), is measured from 1980 to 2011. The dataset for the culture index, World Values Surveys, has not been updated; therefore culture is measured from 1981-2007. The culture index is comprised of four specific indicators of culture that are identified as being relevant for supporting the capitalist foundation of economic interaction and exchange. This includes trust, respect, individual self-determination, and lack of obedience. One question from the survey is identified that is most closely correlated with each trait. A comprehensive culture measure is achieved by isolating the common variation by extracting the first principal components of all four traits. The index should be thought of as a net measure of culture that is conducive to economic interaction and exchange. The index is normalized between zero and ten, with a higher score implying stronger cultural norms for economic growth.

Our goal from this empirical investigation is to update the data and recheck the basic economic intuition from the previous studies summarized above. We examine culture and economic freedom's impact on both economic growth and the level of income. To recheck the substitution versus complements hypothesis, we control for culture, economic freedom, and initial income in 1980 (log). We also test the basic specification with the subcomponents from both the economic freedom index and the culture index. To examine the impact from the interactive effect of culture and freedom, we focus on several subsamples of our data instead of using an interaction term. This not only provides easier interpretation but also minimizes the major endogeneity concerns highlighted by Mathers and Williamson (2011). All analyses focus on OLS cross sectional regressions as culture is apt

to change slowly over time and most variation is across countries. Appendix 1 provides the summary statistics of the data.

Figures 1 and 2 below illustrate the strong connection between economic freedom and income per capita and culture and income per capita. Both scatter plots highlight the importance of formal and informal institutions for economic outcomes. As shown in Figure 1, as economic freedom increases, income per capita also increases. Countries that are the richest (Hong Kong and Singapore, for example) are also the most free. Figure 2 shows a similar result, where countries with cultural norms of trust, respect, individual self-determination, and lack of obedience are the wealthiest (for example, Sweden and Finland).

Figure 1: Income per capita (log, average 1980-2012) and Economic Freedom (1980-2011)

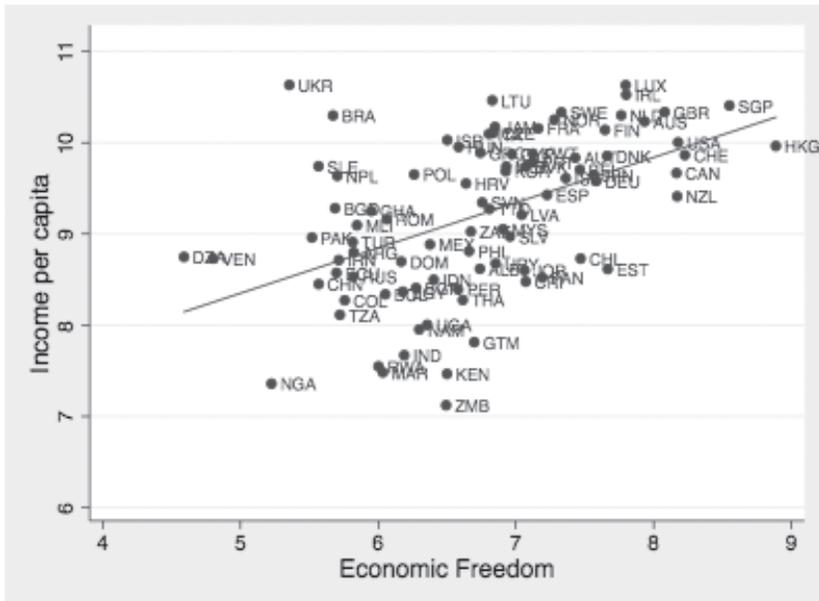
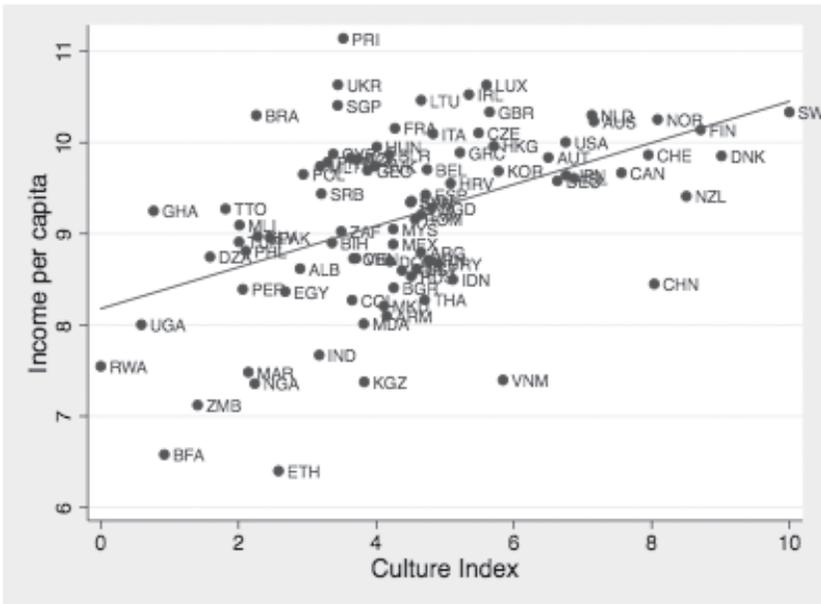


Figure 2: Income per capita (log, average 1980-2012) and Culture (1981-2007)

Now we turn to our OLS results. Table 1 below uses log GDP per capita as the dependent variable and tests the substitution/complements hypothesis. This specification was not previously tested in our original works. The results, depending on the specification, support both the substitution and complements arguments. In column (1), both culture and economic freedom are positive and significant suggesting a complementary effect on income. A one standard deviation increase in culture or economic freedom leads to approximately a 0.26 or 0.30 percent increase in income, respectively. This result suggests that both culture and freedom are statistically significant and have approximately the same economic significance.

Columns (2)-(7) control for culture and one of the sub-components of the economic freedom index: Area 1 is size of government; Area 2 is legal structure and security of property rights; Area 3 is access to sound money; Area 4 is freedom to trade internationally; and Area 5 is regulation of credit, labor, and business. Columns (2), (4), and (6) show that culture dominates areas 1, 3, and 5 of the economic freedom index. This suggests that cultural norms of trust and respect, for example, can substitute or mitigate formal rules pertaining to size of government, access to sound money, and regulatory statutes. For example, when faced

with high taxes or increased regulations, individuals can rely on trust in the informal economy to support economic interactions.

Column (3) suggests that secure property rights and rule of law are imperative to economic development as many studies have found. The insignificance of culture may highlight the difficulty that cultural norms may face when attempting to substitute away from government expropriation. Culture and freedom to trade complement one another, as suggested by regression (4), supporting previous theoretical arguments that culture can facilitate exchange when economic institutions are sound. Only economic freedom's area 4 is significant in column (7) possibly because many variables are highly correlated. We do not place much weight on this specification.

Columns (8)-(12) control for the economic freedom index and the sub-components of culture. Economic freedom is positive and significant in all five specifications—supporting more of a substitution argument. Only obedience is significant in the bi-variate regressions. This result suggests that a lack of obedience supports development and complements economic freedom. In the last regression, economic freedom, obedience, and respect are significant. Even though most regressions only control for two variables, our model explains over one-third of the level of development as suggested by the adjusted R-squareds.

Table 2 below uses economic growth as the dependent variable and tests the substitution/complements hypothesis. We also control for log of initial income in 1980. As shown in column (1), the findings from the previous literature hold, supporting the substitution argument for economic freedom, culture, and growth. Economic freedom is positive and significant and culture is positive but insignificant. Moving from the lowest ranking country (Zimbabwe) to the highest-ranking country (Hong Kong) increases growth by approximately 2.6 percentage points.

Columns (2)-(7) break down the economic freedom index into its five components and controls for culture. The results are mixed—supporting both the substitution and complements hypothesis as we found above. Column (3) supports the previous finding where secure property rights and rule of law (area 2) dominates culture. When formal institutions exist to secure property and enforce contracts, individuals do not need to rely on informal networks to do so and may find it difficult to substitute away from predatory governments.

Culture is positive and significant in four out of six specifications with an average coefficient of 0.28. This implies that moving from the lowest (Rwanda)

to the highest ranking country (Sweden) increases economic growth by approximately 2.8 percentage points—a similar impact as economic freedom. In columns (2) and (6) culture dominates economic freedom areas 1 and 5, respectively, suggesting culture can substitute for certain portions of freedom as discussed above. For example, individuals may rely more on norms to conduct business when a country imposes high regulations and taxation. This result also supports the idea that even when faced with lower burdens of regulations and taxation, cultural values are still important. Columns (4) and (5) suggest that culture and economic freedom areas 3 and 4 complement one another. This implies that cultures with high levels of trust, respect, self-control, and lacking obedience help to facilitate free trade and access to sound money. Column (7) finds no significant coefficient, as many of the variables are highly correlated.

Columns (8)-(12) control for the economic freedom index and the subcomponents of culture. Economic freedom is positive and significant in all five specifications with a slightly higher average coefficient of 0.65. The only significant culture subcomponent is obedience as before. Obedience has a negative impact on growth, where a standard deviation increase in obedience decreases growth by approximately 0.5 percentage points. This suggests that a culture lacking obedience complements economic freedom. The model explains over one-third of economic growth as suggested by the adjusted R-squareds.

Table 1: Economic Freedom, Culture, and Level of Development

Cross Sectional, OLS Regressions 1980-2012

Dep. Var: Log GDP per capita, 1980-2012

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Culture Index	0.13** (0.045)	0.18*** (0.042)	0.06 (0.057)	0.14** (0.052)	0.10** (0.047)	0.18*** (0.047)	0.04 (0.060)					
EFW Index	0.34** (0.115)							0.44*** (0.111)	0.36*** (0.101)	0.49*** (0.091)	0.52*** (0.094)	0.34** (0.109)
EFW Area 1		-0.10 (0.068)					-0.07 (0.065)					
EFW Area 2			0.24*** (0.058)			0.13 (0.094)						
EFW Area 3				0.20 (0.125)			-0.03 (0.155)					
EFW Area 4					0.30*** (0.073)	0.26 (0.139)						
EFW Area 5						0.14 (0.106)	-0.09 (0.125)					
Trust								0.01 (0.006)				-0.002 (0.007)
Obedience									-0.02*** (0.005)		-0.02***	(0.005)
Respect										0.01 (0.005)		0.01** (0.006)
Self-control											-0.005 (0.012)	0.002 (0.012)
Constant	6.41*** (0.712)	9.05*** (0.530)	7.46*** (0.241)	7.04*** (0.885)	6.73*** (0.447)	7.54*** (0.622)	7.65*** (0.858)	6.06*** (0.713)	7.50*** (0.782)	5.51*** (0.786)	6.08*** (1.006)	6.91*** (1.060)
Observ.	74	74	74	74	73	74	73	75	75	75	74	74
Adj. R ²	0.34	0.27	0.40	0.32	0.37	0.27	0.39	0.28	0.39	0.27	0.27	0.38

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

Table 2: Economic Freedom, Culture, and Growth

Cross Sectional, OLS Regressions 1980-2012

Dep. Var: Economic Growth

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Culture Index	0.25 (0.163)	0.34** (0.123)	0.22 (0.153)	0.26* (0.136)	0.25* (0.140)	0.29* (0.162)	0.22 (0.144)					
EFW Index		0.54** (0.240)						0.54** (0.237)	0.64*** (0.167)	0.74*** (0.145)	0.77*** (0.151)	0.55** (0.234)
EFW Area 1		0.07 (0.180)					0.07 (0.179)					
EFW Area 2			0.27** (0.122)				0.16 (0.150)					
EFW Area 3				0.31** (0.154)			0.10 (0.202)					
EFW Area 4					0.41** (0.181)		0.29 (0.234)					
EFW Area 5						0.23 (0.224)	-0.10 (0.261)					
Trust								0.03 (0.019)				0.01 (0.014)
Obedience									-0.03** (0.015)			-0.03* (0.016)
Respect										-0.01 (0.008)		-0.01 (0.011)
Self-control											-0.01 (0.022)	0.02 (0.028)
Initial Income	-1.02** (0.295)	-0.8** (0.335)	-1.01** (0.321)	-0.96** (0.311)	-1.1** (0.339)	-0.9** (0.293)	-1.2** (0.398)	-0.9** (0.249)	-1.0** (0.305)	-0.80** (0.286)	-0.84** (0.322)	-1.04** (0.337)
Constant	6.24** (2.640)	7.06** (3.428)	8.31*** (2.304)	6.86** (2.194)	7.68** (2.235)	6.75** (2.875)	7.59** (3.774)	5.24** (2.303)	8.08** (3.314)	4.94** (2.158)	5.00** (1.670)	7.36** (2.563)
Observ.	62	62	62	62	61	62	61	63	63	63	62	62
Adj.R2	0.33	0.27	0.32	0.31	0.34	0.29	0.31	0.29	0.36	0.24	0.23	0.35

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

Now we examine the relationship between economic freedom and culture and the subsequent impact on growth. To examine this impact, we focus on several subsamples of our data instead of using an interaction term. Before turning to regression analysis, we first examine the scatter plot between economic freedom and culture as shown by Figure 3 below. This highlights the argument that cul-

tural, informal norms supporting economic exchange underpin formal, economically free institutions. The relationship between culture and freedom suggests a positive interaction effect for economic outcomes.

Figure 3: Economic Freedom (1980-2011) and Culture (1981-2007)

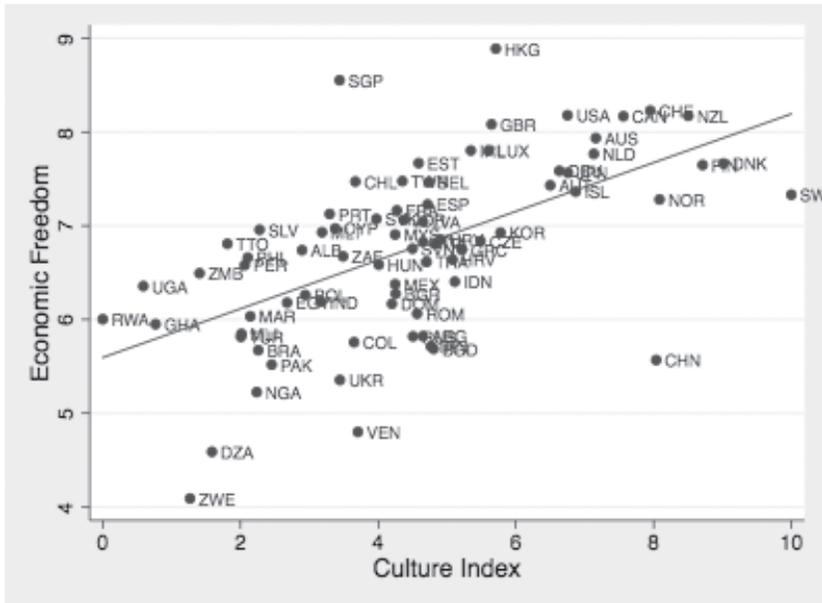


Table 3 below further investigates the interaction. We do so by examining three different subsamples of our countries based on level of income, level of freedom, and culture. We first split our sample into ‘rich’ and ‘poor’ countries divided at \$10,000 GDP per capita (1980-2012). An interesting result emerges—culture is positive and significant among poor countries and economic freedom is insignificant. The opposite happens in rich countries where culture is insignificant and economic freedom is positive and significant. This result highlights the importance for culture especially in low-income countries and the possible difficulty of ‘installing’ the right type of institutions to achieve higher growth. Once a country has achieved a high level of development and economic freedom, culture becomes less important. This may be due to less of a need to rely on informal mechanisms for economic interactions.

Columns (3) and (4) split the subsample at the mean of economic freedom. Among free countries, culture is negative but insignificant. Economic freedom remains positive and significant, supporting the argument that freedom is impor-

tant for growth at all levels of economic institutions. Among unfree countries, we find the opposite result. Culture is positive and significant and economic freedom is insignificant. The findings from the income and freedom subsamples support a substitution argument where among poor, unfree countries individuals rely on informal instead of formal institutions to facilitate economic interactions, whereas more developed and free countries rely less on informal mechanisms as it is unnecessary.

Columns (5) and (6) split the sample at the mean of the culture index. Among countries with strong cultural economic norms, economic freedom is positive and significant supporting a positive interactive effect. Even in the presence of strong informal cultural mechanisms, there remains a benefit from free economic institutions. Among weak culture countries, both culture and economic freedom are positive and significant, also supporting a complementary interactive effect.

The high adjusted R-squareds suggest our model explains a large portion of the variation of economic growth among our countries. Overall, these results, combined with the results presented in Tables 1 and 2, support both substitution and complementary relationships between economic freedom and culture.

Table 3: Economic Freedom, Culture, and Growth: Subsamples

Cross Sectional, OLS Regressions 1980-2012

Dep. Variable: Economic Growth

	Income		Econ. Freedom		Culture	
	Poor	Rich	Free	Unfree	Strong	Weak
	(1)	(2)	(3)	(4)	(5)	(6)
Culture Index	0.73*** (0.149)	-0.09 (0.073)	-0.06 (0.103)	0.66** (0.177)	0.22 (0.181)	0.37* (0.183)
EFW Index	0.29 (0.296)	0.93*** (0.242)	0.80** (0.315)	0.21 (0.331)	0.67** (0.284)	0.74** (0.236)
Initial Income	-1.20*** (0.250)	-0.77** (0.281)	-0.94* (0.544)	-1.05*** (0.262)	-1.5*** (0.400)	-0.55** (0.264)
Constant	7.58** (2.598)	2.92 (2.339)	5.35 (5.470)	7.08** (2.911)	10.00** (3.314)	0.76 (2.027)
Observ.	30	32	34	28	32	30
Adj. R ²	0.64	0.29	0.23	0.63	0.55	0.27

*Note: Robust standard errors are in parentheses. Significance level: *** at 1%, ** at 5%, * at 10%. Income is divided by \$10,000 GDP per capita, Free is divided at the mean of 6.7, and Culture is divided at the mean of 4.3.*

4. Conclusion

Our previous works and the expanded and updated results presented here suggest that there is an important role for both culture and economic freedom to play in determining economic growth. What's clear is that economic freedom is a strong determinant of economic success. However, where the formal institutions of economic freedom are absent, having a culture of freedom can have a positive impact on economic outcomes. Once the matching formal institutions of economic freedom are established in these areas, the importance of culture may diminish, as binding formal constraints have been built on existing cultural norms.

Where culture is inconsistent with economic freedom, installing the formal institutions associated with economic freedom, such as rule of law, protection of private property, and enforcement of contracts, will still have a positive impact but not as strong an impact as where the culture is consistent with economic freedom. Where there is a mismatch between formal and informal institutions,

the formal institutions of economic freedom will not have the backing of local norms and values. This makes the creation of binding, enforceable constraints difficult and costly. It is in this way that culture can impact the productivity of economic freedom for better or worse. Perhaps the biggest conclusion that can be drawn from this work is the importance of economic freedom, both culturally and within formal institutions, for economic success. In our efforts to ameliorate suffering and eliminate world poverty, we would do best to remember that liberty is the key. Establishing both the cultural values associated with liberty and the formal institutions of economic freedom is *the* road out of serfdom.

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Appendix 1: Summary Statistics

Variable	Observ.	Mean	Std. Dev	Min	Max
Control	91	66.99	7.49	46.80	82.80
Trust	92	26.03	13.67	3.80	63.77
Obedience	92	39.01	17.95	2.24	81.74
Respect	92	66.04	11.17	14.23	87.70
Culture Index	91	4.32	1.99	0.00	10.00
Log GDP per capita, 1980-2012	105	9.12	0.95	6.40	11.14
Growth	106	1.96	1.78	-2.14	11.80
EFW Area 1	89	6.02	1.26	3.21	9.21
EFW Area 2	89	6.08	1.81	2.18	8.98
EFW Area 3	89	7.82	1.41	1.90	9.64
EFW Area 4	88	7.01	1.32	3.56	9.50
EFW Area 5	89	6.49	0.88	4.39	8.90
EFW Index	89	6.70	0.90	4.09	8.89
Log GDP per capita, 1980-2012	78	8.79	1.13	6.26	10.60

The Geography of Economic Freedom

Matthew Brown¹

The idea that economic institutions are determinants of long-run economic performance is largely associated with the work of Douglass North and several other economists in the post-War period. Although the importance of institutions has been recognized by many authors since at least Adam Smith (1776), much of post-War economics research ignored the importance of institutions for economic growth and development. The seminal textbook of the post-war period, Samuelson's *Economics: An Introductory Analysis* (1946), does not even include the word "institutions" in its index. Much of economics in the post-War decades was following Samuelson's path and thus also ignored institutions.

North's less mainstream research over several decades provides the primary arguments for why institutions matter. "The evolution of institutions that create an hospitable environment for cooperative solutions to complex exchange provides for economic growth" (North 1990, vii). According to North, institutions are the "rules of the game" in an economy or "the humanly devised constraints that shape human interaction" (North 1990, 3). The broad, yet vague, nature of this definition simultaneously reveals the importance of institutions and the difficulty of integrating them into mainstream economics research. The lack of concrete empirical approaches to the topic of institutions helped ensure that they were absent from most of the economics literature of the twentieth century.

Several important events helped institutions gain a more prominent role in the economics literature in recent years: 1) the collapse of the Soviet Union and its intellectual foundations (economic theorists were 'mugged by reality'), 2) North's

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Nobel prize in 1993, 3) the development of rigorous empirical measures of institutional quality such as Jim Gwartney's work on the Economic Freedom of the World index, and 4) the integration of that data into prominent empirical studies by leading economists.

With those four factors in place the question of how institutions impact economic growth has undergone something of a renaissance in the last 20 years. Prior to the awarding of the Nobel prize to Douglass North in 1993, most economists paid little attention to the role of institutions in economic performance or the role of history in shaping those institutions. The subsequent empirical work of Acemoglu et al. (2001; 2002), in particular, has cited the ideas of North and addressed both the importance of institutions as drivers of economic growth and the role of historical experience in helping to shape those institutions. There, of course, remain many unanswered questions in the literature yet institutional quality is now solidly established as an important factor in determining long run economic performance. As this relationship has become more widely accepted it has becoming increasingly important to understand where quality institutions come from, how they evolve, what factors influence their evolution and what, if anything, can be done to direct institutional quality in more positive directions.

Geography, Endowments and Institutions

At the same time that economists have been rediscovering institutions there has been an increasing emphasis on geography in the field of economic development. What has not been discussed as frequently is the degree to which geography influences the quality of institutions.

Gallup and Sachs (1998) note that there are two "unmistakable" correlations with economic development. The first is that the majority of tropical countries are poor. The only tropical countries in the top thirty countries in terms of income are Hong Kong and Singapore. Secondly, coastal economies are richer than landlocked countries. There are no rich, landlocked countries in the world outside of Europe. Gallup and Sachs argue that these geographic factors continue to exert a direct impact on growth today. They estimate the following costs to per capita income for various factors: \$4700 for being in the sub-tropics, \$3,500 for being in the southern hemisphere, \$10,000 for being socialist, and \$5,000 for being landlocked.

In their 2003 work "Institutions Don't Rule: Direct Effects of Geography on Per Capita Income," Sachs et al. flesh out the tropical thesis by focusing on

the direct impact of the malarial environment on growth in equatorial nations. They cite three main ways that disease climate has a direct effect on income: 1) unhealthy people are less productive; 2) poor health conditions reduce life expectancy and shorter lives mean less human capital is accumulated over the lifetime; and 3) poor health may reduce the ability for human capital investment.

In addition to the tropical climate, Sachs et al. (2003) also discuss the relevance of coastal proximity for the growth of developing nations. They are not the first. Given lower transportation costs by sea than via land, one would expect that coastal nations would benefit more from exchange than their landlocked counterparts. Bauer devotes a few pages of his 1991 collection of essays, *The Development Frontier*, to addressing the relative importance of geography. He notes that while geographic factors play a significant role in shaping development in the short term, “this elementary analysis reveals nothing about developments over a longer period” (Bauer, 1991: 28). He goes on to argue that “The small size and low productivity of many farms in the Third World reflect primarily want of ambition, energy, and skill, not want of land and capital” (Bauer, 1991: 194).

Jared Diamond’s 1997 book *Guns, Germs, and Steel* provides a different take on the role of geography in the history of development. Diamond suggests four main causal paths through which biological and geographical factors affected development. To illustrate his hypotheses, he describes the differences in the development of Europe, Africa and Asia.

First, Diamond attributes divergence in development to biological differences across continents. Societies with wild plants and livestock capable of being domesticated (Europe) developed resistance to certain infectious diseases like measles and small pox, while those who lacked farm animals failed to develop the same immunity. This proved disastrous for the original populations of the Americas after contact with European explorers. The other obvious benefit of livestock resides in the productivity gains from agricultural use. Diamond notes that Africa missed out on these gains due to a disease climate that limited the number of cattle.

Diamond’s second contention is that diffusion within continents via migration allowed for greater rates of development in Europe and Asia than in Africa and the Americas. Climate is relatively uniform along latitudinal lines, and therefore many of the crops that developed in Europe or Asia were easily transplanted from one continent to another along similar latitudes. On the contrary, the number of climatic regions in continents that are oriented primarily along north to

south axes did not allow for the same spread of innovation. “If a productive crop is already available, incipient farmers will surely proceed to grow it rather than start all over again by gathering its not yet so useful wild relative and redomesticating it” (Diamond, 1997: 179). These continental corridors also allowed for contact that would have inspired trade, and the “diffusion of technological innovations” (Diamond, 1997: 179). Diamond notes that diffusion occurred more slowly in Africa and the Americas, given the north-south axes and geographic barriers.

In addition to diffusion within continents, some factors allowed for diffusion between different continents. Some continents (Australia, Americas) have traditionally been more isolated than others. This led to less “interhemispheric diffusion” than that which has been observed within the Eurasian region, given its “east-west major axis and its relatively modest ecological and geographical barriers” (Diamond, 1997: 407).

Diamond’s fourth hypothesis is that continents benefit from large geographic or population size. “A larger area or population means more potential inventors, more competing societies, more innovations available to adopt – and more pressure to adopt and retain innovations, because societies failing to do so will tend to be eliminated by competing societies” (Diamond, 1997: 407). Essentially, the competition and diffusion created by large areas for people to interact fostered development over the course of history.

While all of Diamond’s arguments seem plausible he includes one final important hypothesis as almost an afterthought in his book. He presents a map of the borders of Europe and China and speculates that differences in their shape could have significantly influenced their institutional developments. China, he speculates based on the map, was easier to centralize and bring under the control of one ruling group while Europe was geographically suited for more local, decentralized control and was harder to reign in by any one power. As Diamond explains it, Europe is “much more indented and includes more large peninsulas and two large islands” (Diamond, 1997: 414) providing natural barriers to political centralization.

Another approach to the questions of geography and growth was taken by Hall and Jones (1999) who focused on the relationship between latitude and institutions. The relationship between latitude and institutions has also long been discussed in the historical literature as an important relationship that may explain economic performance over time. Possible explanations for latitude’s importance have ranged from the impact of heat on working conditions and human energy,

climate's impact on agricultural productivity, and the idea that variation in temperatures at higher latitudes requires greater ingenuity and adaptability. Since Hall and Jones (1999) it has become common to use latitude as an instrument for institutional quality in the empirical growth literature. The strong correlation between economic performance and latitude makes it impossible to ignore this factor as a potential determinant of economic performance.

Nonetheless, a clear explanation of the impact of latitude on economic performance is lacking. The two most common explanations for the importance of latitude discussed in the economics literature are: 1) that latitude is a good measure of whether a country is tropical. This is the view closely associated with Jeffrey Sachs that the tropical disease environment directly impedes economic development; and 2) that latitude is closely linked with how desirable a location was for colonial powers to develop long-term settlements. This is the idea closely associated with the work of Acemoglu and his colleagues. Regardless of the ultimate explanation of why latitude is so closely related to economic performance and economic freedom, its strong correlation makes it imperative that latitude be included in the empirical analysis of the determinants of institutional quality.

Other Geographic Characteristics

As mentioned, Diamond (1997) hypothesized that one of the reasons Europe may have had an early advantage over China in economic development was because China was easily controlled by one authority due to its relatively smooth shape and uninterrupted geography as compared to Europe with its abundance of peninsulas, islands etc. Diamond's observation was almost an afterthought placed at the end of his lengthy book, however, the empirical analysis that follows suggests it is of major importance explaining institutional quality. Figure 1 represents the outline of Europe and China and begs the question Diamond posed about shape and institutions.

Length and shape of borders could help integrate Diamond's insight into an empirical analysis of institutional quality. Countries with the shortest borders have an average economic freedom score over a half a point higher than countries with the longest borders. However, total border will be very closely related to total geographic size and so distinguishing the two characteristics would be difficult when analyzing impact on economic freedom.

An alternative approach that would capture the impact of both size and shape would be to create a new calculated variable called here "exitability". Exitability is

defined as the sum of land borders and coastline divided by total geographic area. This variable more closely captures the idea Diamond was discussing. A country with many peninsulas, bays, etc.—in effect an irregularly shaped border—would have a higher ratio of exit options per land area than a country with smooth borders—like Europe relative to China in Figure 1. From a theoretical perspective, institutional competition requires available substitutes. Ideally, for competition to be maximized, the location of any individual within a given country ought to be as close as possible to a different system of governance. “Exitability” gives us an approximation of how easy a country is to leave.

Figure 1: Map of Europe and China: Does Shape Matter?



The exitability score is higher if the length of borders and coast line per total area is higher and lower when there are shorter borders and coastline relative to total area. So countries with rather irregular borders have higher exitability while countries with smoother more regular border have lower scores. China, which Diamond used as an example, has a relatively low exitability ratio of 0.003. Another example of a low ratio is Chad with an exitability ratio of 0.004. Both countries have relatively large landmasses away from any borders and have relatively smooth borders—the sweeping half-moon shape of China and the more rectangular shape of Chad. In contrast Denmark has an exitability ratio of 0.17 and Panama is 0.039, both relatively high exitability numbers. These countries are shaped in such a way that more of their area is close to a border or coast—the peninsula and many islands of Denmark and the long narrow isthmus of Panama.

One way to consider the importance of ease of exit lies in the ability it provides citizens to give feedback to the governing party. Individuals will, if possible, vote with their feet if that is their only option of impacting the institutional status

quo. In this sense we can think of exitability as providing a measure of Tiebout sorting among countries. Tiebout (1956) developed a novel model for describing the provision of local public goods. In his model residents would choose among competing localities for the bundle of publicly provided goods that best fit their preferences. According to the Tiebout model large governments are inefficient because they cannot design a bundle of publicly provided goods that satisfies the variety of preferences among a large populace. Smaller localities in this model are more efficient as they can tailor their provisions to a more homogeneous population. Individuals can express their preferences by moving amongst the segmented localities to find the best match for themselves.

This Tiebout sorting process can result in competition (Tiebout competition) among the various jurisdictions to provide the bundle of services that will attract population. Given that consumers have heterogeneous preferences and localities vary in the goods provided (government programs) and costs (taxes, fees etc.) optimal allocation of citizens, government programs and taxes are only likely to arise over an extended period of Tiebout sorting. Optimal allocation arises in Tiebout's model if information is widely available (perfect information) and it is easy to move between localities (perfect mobility). As either of these assumptions is relaxed the optimality of the Tiebout allocation will diminish.

Applying the logic of Tiebout sorting to the international level we can assume individual agents have a preference to sort themselves into national jurisdictions that most closely satisfy their preferences for publicly provided goods and taxes. Here we can think of the institutional environment as one of the publicly provided goods, or more accurately a bundle of publicly provided goods. The ability to engage in Tiebout sorting is clearly impacted by national policies regarding migration; a prohibition against outward migration would be a clear obstacle to Tiebout sorting—as was often noted during the era of the Iron Curtain. So we can identify at least three major obstacles to Tiebout sorting at the national level: information, travel costs and government prohibition. Exitability, as described above, will impact the rigidity of each of these constraints. A country with greater exitability will have more information about other jurisdictions, cheaper access to them by being located more closely to borders, and an increased difficulty of enforcing border controls due to the relative abundance of locations from which to exit. Exitability thus increases the possibility that citizens of a country can engage in Tiebout sorting and seek out national jurisdictions that more closely align with their preferences. This exit option should increase competition among national

governments to improve institutional quality in order to retain citizens (revenue). As was widely recognized during the Cold War, population loss is one of the best indicators of poor governance that exists. Thus, one would expect that Countries with border to area ratios that reduce the cost of exit will generally have more economic freedom over the long term.

An analogy to the idea of exitability is the idea that will be called “coastalness”. Several authors have pointed to the seeming importance of coasts in a country’s economic development (Bauer, 1991; Gallup and Sachs, 1998). Coastalness is a calculated variable defined as the length of coastline divided by total area. There is a positive relationship between coastalness and economic freedom; the countries with the least coast relative to land area have the lowest economic freedom while those with the greatest coastalness have the highest economic freedom. With island countries the measure of exitability is equal to the measure of coastalness. Whereas countries that are landlocked will have a zero coastalness score yet they still have the possibility of a higher exitability score, like Austria.

Particularly before the advent of air travel, sea travel often represented the most economical means of accessing foreign cultures and goods. Thus coastal communities would not only be more likely to have more contact with people from other societies, they would also be more likely to become trading hubs among numerous societies that did not have direct access to sea routes. Thus it has been argued coastal societies were more likely to develop institutions conducive to trade.

Smith (1776) surmised the importance of coastalness as follows:

As by means of water-carriage a more extensive market is opened to every sort of industry than what land-carriage alone can afford it, so it is upon the sea-coast, and along the banks of navigable rivers, that industry of every kind naturally begins to subdivide and improve itself, and it is frequently not till a long time after that those improvements extend themselves to the inland parts of the country.

Finally another variable has been created to capture the possible impact of size and shape on economic freedom. The hypothesis was that states which were most geographically compact, most circular in shape, were the hardest to leave—mathematically a circle is the shape where most of the area is farthest from a border. If Diamond’s theory of competition holds, places that are more circular would likely

be less economically free. Conversely, those nations whose borders were more irregular and less compact, would be more likely to have liberal institutions.

This is similar to the discussion just presented regarding exitability, yet exitability is dependent on size so it does not capture shape independently. A size-independent measure of shape has been developed in spatial mathematics (Selkirk 1982). Selkirk's measure indicates shape or compactness independent of size; the Selkirk circularity ratio is used commonly in studies of geography (see van Eck and Koomen (2008) for a recent example). The ratio is calculated as given in Equation 1:

$$(1) \text{Circularity} = (4 * \pi * \text{Area}) / \text{perimeter}$$

Shapes that are perfectly round would have a value of one, while the most elongated shape would have a value of zero. Equation 1 is modified to produce an equation that yields higher values for greater elongation or “area close to a border” and a low value for greater circularity—essentially a measure of non-compactness. This variable, “Shape Factor” is presented in Equation 2:

$$(2) \text{Shape Factor} = 1 - ((4 * \pi * \text{Area}) / \text{perimeter})$$

Shape factor has the desirable characteristic of capturing much of what is included in ‘exitability’, but independent of absolute size, which ‘exitability’ is not. Simple univariate regression analysis shows Shape Factor positive and significantly correlated with economic freedom at a 99% level of confidence.

The various geographic characteristics discussed here all have potential explanatory power in the relationship to economic freedom and simple univariate analysis indicates strong correlations. Multiple regression analysis was conducted to determine which factors were important in the presence of other variables and controls. The basic relationship tested can be specified as follows in Equation 3:

$$(3) EF_{it} = \alpha X_{it} + \beta Z_{it} + e_{it}$$

where EF represents economic freedom in country *i* in year *t*, *X* is a the matrix of geographic variables tested and *Z* is a vector of control variables including year, latitude and other natural factors, and *e* is the error term. Results are reported

throughout this chapter with robust standard errors to account for heteroskedasticity as needed.

Table 1 reports the results of regressions using the various geographic measures discussed above as possible factors influencing economic institutions. In Table 1 the dependent variable in each regression is the Economic Freedom of the World (Gwartney and Lawson, 2006) score for all 130 countries in the index in 2004. The first model includes geographic area as the sole independent variable. Total geographic area is significantly negatively related to economic freedom, but the variation in economic freedom explained by area alone, as indicated by the R-squared statistic, is very low. The second model includes the important geographic control variable latitude. Latitude, as discussed, is positively correlated with economic freedom and highly significant (above the 99 percent level). When latitude is included in the regression geographic area falls out of significance. This suggests that while area is correlated with economic freedom it does not have meaningful explanatory power. So while we would think of smaller area countries being closer to alternative regimes, size alone cannot explain the type of mobility that is expected to lead to greater institutional quality.

Exitability is included in the third model along with latitude and area. Exitability is highly significant and positively correlated with economic freedom. Latitude retains its positive significance and area remains insignificant. These results are important for several reasons. First, they support the idea that ease of exit is important in explaining institutional variation among countries, suggesting that something similar to Tiebout competition may be occurring at the national level. Second, since exitability captures some of the idea of size that is included in the area variable it is important to note that exitability is significant despite the inclusion of area in this model. Finally, exitability is significant even though latitude is included. This is an important finding. Latitude has been used as a sort of catch all for institutional quality as well as the impact of geography on institutional quality in much of the empirical literature. Included as a control variable latitude serves as a robustness check on the other variables studied. That exitability is highly significant (above the 99 percent level) suggests that there are important geographic factors at work influencing institutional quality that are not accounted for in the standard ways in the literature. Latitude is something of a dubious variable for explaining economic performance or institutional quality; although it is highly significant the explanation for why it is so is elusive. These results haven't taken us any closer to understanding why latitude is important, but

they do clarify that latitude is not an all-encompassing geographic instrument for institutional quality as it has sometimes been used in the literature.

Table 1: Geography and Economic Freedom

Dependent Variable: Economic Freedom						
<i>Independent Variables</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>	<i>Model 5</i>	<i>Model 6</i>
Land Area	-1.35E-08** (5.02E-07)	-3.65E-08 (4.73E-08)	-1.40E-08 (3.57E-08)	-1.29E-08 (3.56E-08)	-3.50E-08 (3.50E-08)	2.80E-08 (3.48E-08)
Latitude		0.0299*** (0.0041)	0.0289*** (0.0044)	0.0287*** (0.0044)	0.0272*** (0.0045)	0.0272*** (0.0045)
Exitability			3.3814*** (0.8528)	2.7913 (4.2165)	3.3942' (2.2262)	
Coastalness				0.5659 (4.0053)		0.2555 (3.8922)
Shape Factor					1.2113** (0.5337)	1.1413** (0.5451)
Constant	6.4165*** (0.1002)	5.6246*** (0.1581)	5.4826*** (0.1467)	4.6343*** (0.3214)	4.6864*** (0.3838)	5.5478*** (0.2315)
Adj R2	-0.007	0.2375	0.3173	0.3171	0.3655	0.3287

*** significant at 1 percent

** significant at 5 percent

' significant at 10 percent

The fourth model included in Table 1 includes the variable coastalness along with area, latitude and exitability. Exitability and coastalness both report the expected signs but both are insignificant. Exitability and coastalness are correlated and capture much of the same theoretical explanatory power in terms of ease of exit and availability of substitutes. So it is probably not surprising that they lose significance when included simultaneously. Model 5 includes the shape-factor variable, and it along with latitude and exitability are significant and positively correlated with economic freedom. Finally, coastalness is tested in place of exitability in a model with latitude and shape-factor. In this case while latitude and shape-factor were significant coastalness remained insignificant. This is an important finding. Economists as varied as Smith, Bauer, and Sachs, among others, have argued for the importance of proximity to coasts as an important explanatory fac-

tory in economic performance. These results suggest that coastalness, while highly correlated with economic freedom by itself, does not retain explanatory power once other variables are included. This suggests that what is showing up in coastalness when it is compared individually to institutional quality is some measure of ease of exit and not something specifically related to coasts. That is, exitability by any means rather than exitability specifically by seafaring means seems to be what is important in explaining economic evolution. Thus the authors that have speculated on the importance of access to coasts may have been misled by focusing on interpreting coastalness as specifically sea-related instead of being part of a broader concept of exitability.

The findings in Table 1 support the often observed, if not adequately explained, correlation between latitude and economic freedom, but they include an important new finding that adds to the robustness of the geographic explanations of institutional quality: that ease of exit is an important explanatory factor in the evolution of institutions. Consistent with a Tiebout sorting model, a population's ability to vote with their feet likely leads to increased competition among governments to improve their attractiveness to citizens, thus leading to greater economic freedom. Geographic size and access to water do not explain variations in institutional quality once ease of exit has been included.

Many economists have argued that natural endowments are important for the determination of long-term economic well-being. If the so-called 'resource curse' leads to the adoption of inefficient extractive institutions, natural endowments may be more important for institutional quality than the geographic variables we have been discussing (see Frankel (2010) for a survey of the resource curse). It is important to try to include other geographically related variables as a robustness check of the independent variables presented in Table 1. If other factors that are closely related to geography can explain institutional variations it may be that the findings above are as misplaced as the earlier arguments about coastalness were.

Table 2 presents two tests of robustness for the geographic variables. In the first model various natural hazards are included as geographically-related independent variables. These include earthquakes, flooding, droughts, tsunamis, landslides, hurricanes, avalanches, forest fires, cyclones, windstorms, monsoons, volcanoes, permafrost, locusts and tornados. These factors may be closely related to other geographic characteristics—for example we would expect avalanches to be related to latitude—thus they may be the true underlying causes of institutions rather than those we have just discussed. The regression results dismiss this

concern and affirm the robustness of the variables latitude and exitability. None of the natural hazard variables are statistically significant while latitude and exitability remain highly significant. The second model in Table 2 includes natural endowments as the control variables rather than natural hazards—these include fossil fuels, minerals, stones, arable land and timber. These factors encompass the factors often included in discussions of the resource curse theory. Here the results again support the importance of latitude and exitability, both of which remain positive and highly significant. All but one of the endowment variables is insignificant. Minerals is negative and significant at the 10 percent level suggesting some negative impact of an abundance of mineral resources on institutional quality. Petroleum reserves and precious metals, the other major standard components of the resource curse are not significant suggesting that exitability can trump the deleterious impact these resources may have on institutional quality.

Table 2: Economic Freedom and Geography
with Natural Hazards and Endowments

Dependent Variable: Economic Freedom		
<i>Independent Variables</i>	<i>Model 1</i>	<i>Model 2</i>
Earthquakes	-0.1148	
Flooding	-0.2356	
Droughts	-0.1241	
Tsunamis	0.2564	
Landslides	-0.3387	
Hurricanes	0.3508	
Avalanches	0.7608	
Forest Fires	0.2835	
Cyclones	0.0658	
Wind Storms	0.0201	
Monsoon	-0.0679	
Volcanoes	0.2691	
Permafrost	0.0450	
Locusts	-0.5391	
Tornados	0.6557	
Fossil Fuels		0.1127
Minerals		-0.4133*
Precious Metals		0.1555
Precious Stones		0.0743
Arable Land		-0.0921
Timber		0.0310
Latitude	0.0297***	0.0330***
Exitability	2.8716**	2.8439***
Constant	5.5990***	5.7367***
Adjusted R2	0.3396	0.3441

*** significant at 1 percent

** significant at 5 percent

* significant at 10 percent

Geography and Subcomponents of Economic Freedom

The results discussed above suggest an important relationship between economic freedom and several geographic characteristics, particularly those related to what might be broadly described as exitability. The construction of the economic freedom dataset allows us to investigate these relationships further by looking at the potential impact of geography on various subcomponents of the economic freedom index that represent different institutional or policy categories. These results will now be briefly discussed.

The five area subcomponents of the economic freedom index are size of government, legal system and property rights, monetary policy, freedom to trade and regulatory policy. Table 3 presents multiple regression results for the subcomponents. Here latitude is included as the standard control variable and exitability is included as the other independent variable. These variables have the most explanatory power for the subcomponents: property rights, free trade, and regulation; and significantly less explanatory power for size of government and monetary policy. Exitability is positive but only significant at the 10 percent level for Area 1: Size of Government. Exitability is actually negative but insignificant for Area 3: Sound Money. The explanatory power as measured by the adjusted R² statistic is in the low 20s for Area 1 and Area 3 and in the 40s for Areas, 2, 4 and 5. Property rights, trade and regulation are the areas we would expect to be most sensitive to exit options of the public, so these results fit in well with the general explanation of geographic factors and economic freedom we have discussed so far. Size of government may not by itself be viewed as something that would necessarily result in greater exit. If the government is supplying services that a relatively homogeneous population values and it does so in a relatively less burdensome fashion, government size might not be automatically curtailed by exit. Areas such as property rights, regulation and trade restrictions seem likely to be those that would lead to significant exit if that option were available. The data support this hypothesis.

Table 3: Geography and Subcomponents of Economic Freedom

<i>Independent Variables</i>	Dependent Variables (Five Component Areas of EFW)				
	<i>Area 1: Size of Govt</i>	<i>Area 2: Property</i>	<i>Area 3: Money</i>	<i>Area 4: Trade</i>	<i>Area 5: Regulation</i>
latitude	0.0217*** (0.0078)	0.0692*** (0.0100)	0.0281*** (0.0072)^	0.0204*** (0.0053)	0.0254*** (0.0044)
exitability	0.5842* (0.3670)	1.0230*** (0.1239)	-0.4013 (1.0275)^	1.2620*** (0.3896)	0.2967** (0.1936)
constant	6.8498*** (0.7254)	3.2039*** (0.9404)	8.2241*** (0.8392)^	5.5455*** (0.4933)	5.7153*** (0.4130)
Adjusted R ²	0.2039	0.4029	0.2327	0.4312	0.4821

*** significant at 1 percent

** significant at 5 percent

* significant at 10 percent

Conclusions

Drawing on the work of North and others on why institutions matter, economists have more recently been asking how to measure institutions and test their importance empirically. The Economic Freedom of the World project led by Jim Gwartney is among a group of widely-used measures that have been developed to quantify institutional quality. A growing body of work has been produced using various indicators of this type to test the impact of institutions on economic performance with broadly consistent results. But many questions remain to be answered.

If “institutions rule” as one recent paper claimed (Rodrick et al. 2004), why don’t countries with poor economic performance adopt “good” institutions? An emerging field of research is now beginning to address that question both theoretically and empirically. The findings here suggest countries that are more easily exited are likely to have more economic freedom. Geographic factors are more highly correlated with the subcomponents of economic freedom in the areas of property rights, free trade, and regulatory environment—factors more easily influenced by competitive pressures. These findings are consistent with the idea that institutional quality will be affected by competition and the availability of substitutes. The statistically significant relationship between exitability and economic freedom, present in numerous specifications, suggests that the influence of competition and foot-voting may be much stronger than previously appreciated in determining economic institutions and, in turn, long-run economic growth.

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Economic Freedom Research: Some Comments and Suggestions

Jamie Bologna¹ and Joshua Hall

1 Introduction and Historical Background

The concept and outcomes related to economic freedom have been a subject of intense debate at least as far back as societies began to break out of the Malthusian trap. For much of the twentieth century the big intellectual debate in the developed world has focused on the role of economic freedom in prosperity (Lawson, 2008). Does economic freedom induce faster growth, higher incomes, and other positive economic outcomes, or does economic freedom hinder these outcomes from occurring? Or is economic freedom good in some dimensions – like growth – and bad in others – like inequality? While important, these debated questions went largely unanswered for decades because of the conceptual and empirical difficulties in measuring economic freedom.

The desire to answer some of the questions that stemmed from this debate resulted in the creation of the Economic Freedom of the World (EFW) index, first produced by Gwartney, Block, and Lawson (1996) and subsequently updated on an annual basis.² The EFW index is designed to measure the consistency of a nation's policies and institutions with economic freedom. The index places the concept of economic freedom within the classical liberal tradition that emphasizes the importance of private property, rule of law, free trade, sound money, and a

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2 See Gwartney, Lawson, and Hall (2014) for the most recent report.

limited role for government. It has been used extensively in the social sciences to test relationships between economic freedom and a variety of outcomes. To get a better sense of this literature, Hall and Lawson (2014) have conducted an accounting of all papers citing the EFW in high quality academic journals.

Hall and Lawson (2014) begin with the Social Science Citation Index (SSCI). The SSCI is an index that measures citations across a select number of journals in social science fields such as economics, sociology, and political science.³ While many important articles that cite the EFW are in journals not listed in the SSCI (Hanke and Walters, 1997; Gwartney et al., 1998; Esposto and Zaleski, 1999; Wu and Davis, 1999; Cole, 2003; Hall, Lawson, and Skipton, 2011; to list but a few), the index includes all of the top journals in each of these disciplines and therefore represents much of the best work conducted using the EFW. At the time of their research, there were 402 articles citing one of the editions of the EFW across 211 different SSCI-listed journals.

Focusing only on papers that use the EFW index, or at least one of its components, as an independent variable, Hall and Lawson (2014) summarize the articles by classifying the result as ‘good’ if that outcome economic freedom is associated with is typically considered to be a positive outcome and ‘bad’ if the outcome economic freedom is associated with is typically considered to a negative outcome.⁴ For example, if economic freedom is correlated with economic growth or the level of income this would be coded as good; however, if economic freedom is correlated with greater income inequality this would be coded as bad. Of the 198 papers that use the EFW index or at least one of its components as an independent variable, 134 found economic freedom corresponds to positive outcomes, 8 papers found economic freedom to be associated with bad outcomes, and the remaining papers had either mixed results or were insignificant.

The creation of the EFW index has therefore enabled researchers across a large number of disciplines to test their hypotheses regarding the relationship between economic freedom and economic, social, and political outcomes. In addition to helping to settle some debates, such as the relationship between market-oriented institutions and economic development, other debates have come to the forefront, including the relationship between economic freedom and income in-

3 For an overview of the Social Science Citation Index as well as some criticisms, see Klein and Chiang (2004).

4 For more discussion of their article, see the chapter by Robert Lawson in this volume.

equality (Carter 2007; Bergh and Nilsson 2010; Apergis et al. 2014). As newer editions of the EFW index are released and regional and historical data on economic freedom continues to be produced (Stansel and McMahon 2013; Stansel 2013; de la Escosura 2014), we expect that economic freedom will continue to be employed in empirical studies explaining a wide variety of outcomes across nations, regions, and states as well as over time. In addition, other scholars will be interested in trying to improve our measures of economic freedom.

In the remainder of this short article we would like to highlight some common issues that arise in research conducted by scholars new to using the EFW. While some of these issues have come up in published research, others are factors that are typically addressed at some point during the peer-review process.⁵ Our hope is that by discussing them here we can save researchers considerable time and effort in the revision process as well as improve the quality of research employing the EFW. In addition, we have strong opinions regarding the EFW index and what it measures and what it cannot measure and we hope to be able to convince the reader of our viewpoint on this issue. Finally, we conclude with some thoughts on important questions that require further research to be answered.

2 Some Issues Surrounding Economic Freedom Research

There have been several criticisms of the EFW index and while some of these criticisms have relevance, and will be discussed in the following section, many of these criticisms simply result from a misunderstanding of the EFW index itself. These misunderstood criticisms can be broadly classified into three separate issues. There seems to be some confusion on (1) how to evaluate the index, (2) measurement issues, and (3) the fact that each component of the index works together to form an overall measure of economic freedom. In addition to addressing these three issues, we also highlight what we feel are some productive critiques.

2.1 The Goal of the EFW is to Measure Economic Freedom - Period

A major problem, for obvious reasons, is that there seems to be some confusion on the overall goal of the index and therefore what makes a good index. The goal of the index is to provide a measure of a negative liberty definition

⁵ As many of these issues discussed have never appeared in print, we cannot directly cite scholars for violating them.

of economic freedom, nothing more. As described in the latest EFW report by Gwartney et al. (2013), the EFW index is designed to measure the extent to which the institutions and policies of a nation are consistent with the protective functions of government; i.e. it measures the extent to which government protects individuals and their property from aggression by others and government itself. A higher score in the EFW index implies that a country is more economically free; conversely a lower score implies that a country is less economically free.

This economic freedom measure may or may not be positively correlated with specific economic outcomes. These are empirical questions for future researchers and not a goal of the index. Arguments that an alternative measure or weighting of economic freedom correlates better with economic outcomes and is therefore a better measure of *economic freedom* than the EFW index is invalid because the only relevant criteria is whether the data used to measure economic freedom accurately capture infringements on economic freedom.⁶ Scholars may prefer other measures based on other definitions of economic freedom (see Kapás and Czeglédi (1997) for a measure based on Hayek's work), but there is no way to formally test which measure is "better."

2.2 Measurement Issues

A frequent criticism of the EFW index when the definition is applied to real-world data is that it includes some policy variables, such as the marginal tax rate, and is therefore capturing outcomes of the game, rather than rules alone.⁷ However, as explained in Lawson (2006), government taxation is essentially an expropriation of private resources in which individuals' personal choice is substituted with collective choice when deciding how to use these expropriated resources. Since the EFW index measures economic freedom, where personal choice and the right to private property are essential to that, taxation is relevant to include in the economic freedom index. Thus, this is once again a misunderstanding of the overall goal of the index. It may be the case that these 'outcome' variables change from year to year, but as a consequence economic freedom may also be changing from year to year.

⁶ This is not to say that there is not debate on what factors should be included, even when there is agreement on the definition of economic freedom. See, for example, the considerable debate that occurred during the Liberty Fund conferences that started the measurement of economic freedom (Walker, 1988; Block, 1991; Easton and Walker, 1992).

⁷ See, for example, De Haan et al. (2006).

Another issue that has been raised in the literature is the issue of double counting, since the index includes both the top marginal tax rate and government spending. However, this is just another criticism that is the result of a misunderstanding of the goal of the index. High marginal tax rates deny individuals the right to the income that they have earned. As explained in Gwartney and Lawson (2003), the burden imposed by these high tax rates is often substantially higher than the burden imposed on citizens from the revenues transferred to government. They further explain that because of this, government expenditures alone will understate the loss of economic freedom. Therefore, it would be important to include both government spending and the top marginal tax rate in order to fully capture the loss in economic freedom due to political decision-making being substituted for individual choice.

There is also the deadweight loss associated with taxation and regulation. Just because an activity doesn't occur doesn't mean it isn't an infringement on economic freedom. Consider the banning of lawn darts in the United States in 1988 (U.S. Consumer Product Safety Commission, 1997). Once one of the most popular games in the United States, is now illegal to sell. How do we properly measure this clear violation of economic freedom? While less trivial, the marginal income tax variable is an attempt to get at the deadweight loss of taxation and the extent to which higher income taxes distort incentives to work as much or as little as one would like.

2.3 EFW Areas Sum to make the Measure of Economic Freedom

A number of papers fail to recognize that each component of the index works together to form an overall measure of economic freedom. The EFW index is divided into five subareas: (1) size of government, (2) legal structure and security of property rights, (3) access to sound money, (4) freedom to exchange with foreigners, and (5) regulation of credit, labor, and business. Each of these subareas is composed of a variety of different elements.⁸ Each area of the index is intended to capture some aspect of economic freedom. Therefore, it is hard to determine the degree of economic freedom overall without looking at these areas together.

Similarly, it would be difficult to make predictions using each subarea separately as an independent variable. For example, it is difficult to predict how eco-

⁸ See Gwartney, Lawson, and Hall (2014) for a description of the subareas and respective components.

conomic growth will respond to changes in the size of government (subarea 1 of the index) without also seeing how that economy scores in the other four subareas of the index. An economy could score very low in area 1, i.e. have a very large sized government, yet still score high in the other areas of the index. Thus, including only one or a few of the components in regression may result in omitted variable bias because the other subareas will likely matter as well. In addition, if all five subareas are included there may be severe multicollinearity problems since the subareas of the index are likely to move in the same direction (Lawson, 2006).

A related concern raised in the literature is that the subareas, and components within the subareas, are not correlated to a high enough degree. Similar to the example given above, several individuals have suggested to one of us that it is problematic that there are countries with low scores in area 1 because of their large government sectors but high scores elsewhere. While it makes sense that there would be some correlation in the subareas and components, since they are ultimately trying to measure economic freedom, it would not make sense that there is an extremely high amount of correlation. Each component of the index is included to capture a specific type of economic freedom, and there may be a significant amount of variability in each country in their scores in each subarea. If this were not the case, then it would only be necessary to use one of the components, say taxes for example, as an overall measure of economic freedom.

2.4 Measurement Issues: Productive Critiques

Since it is valuable to have critiques in order to improve the measurement of economic freedom, we suggest some analyses of the index here that are not the result of a misunderstanding of the index and therefore may be productive. These involve exploring different aggregation techniques of the index and how the components of the index change over time. In addition, as time goes on and data availability progresses researchers should be encouraged to develop new measures that may help improve the index of economic freedom.

The question of how to best aggregate the subareas of the index into an overall measure of economic freedom is an important one. Similarly, the question of how to aggregate the components into subareas is just as significant. There have been a number of different weighting methods to aggregate the subareas into an overall index; however these different methods seem to exert little impact on the rating and ranking of the countries (Lawson, 2008). However this is not to say that this specific question shouldn't be explored using new statistical methods. For

example, Hall and Yu (2012) use an approach called “dominetrics” to show that preferences regarding which area of economic freedom is most important matters for the ranking of U.S. states and Canadian provinces against one another. Furthermore, it may be useful to first explore alternative methods of how to group the components into subareas in the first place.

Similarly, the importance of some of the components may change over time. Data availability and accuracy changes through time as well. Thus, if a weighting scheme stays constant, but the importance of the components change over time, this would bias the overall level of freedom in the economy. For example, it could be the case that one component of the index is extremely important to economic freedom in one time period, but over a ten year time span its importance declines but its score for economic freedom increases. This would cause the score for that area to be overinflated and possibly cause economic freedom to be overinflated as time progresses. Thus, a useful exercise may be to compare the construction of the index throughout time.

3 Important New Areas of Research

Although there have been over 400 papers citing the EFW index (Hall and Lawson, 2014), there are still many important questions that need to be addressed. A major area where a significant amount of research can be done is on what should be included in the economic freedom index. Specifically, we want to know if the EFW index is effectively measuring economic freedom. That is, does the EFW index effectively capture the levels of personal choice, voluntary exchange, and the protection of private property in each country? Furthermore, does the EFW index represent economic freedom levels for all groups of individuals and areas within each country equally?

As discussed in the previous section, over time areas included within the economic freedom index may change in importance. Furthermore, it could be the case that there are areas that have recently become an integral part of society and therefore have a large impact on actual levels of economic freedom but were previously excluded from the index. For example, Lawson and Lemke (2012) create data on travel visa restrictions across 188 countries. Travel restrictions reduce the volume of voluntary transactions that may take place in a given country as it reduces both tourism and business travel, thus this is clearly an infringement upon economic freedom. The “freedom to travel” was not systematically measured prior to their paper. Their calculation of it allowed this measure to be incorporated

into the EFW index in area 4 starting with the 2012 edition (Gwartney, et al., 2012). The creation of new measures of economic and personal freedom improves and strengthens our knowledge of economic freedom.

Furthermore, it is important to look at how economic freedom varies within countries and across groups of people within countries. A good example of a within-country measurement of economic freedom is Stansel (2013), who develops a measure of economic freedom across all of the metropolitan areas within the United States. Stansel (2013) finds that levels of economic freedom vary greatly across metropolitan areas within the United States with metropolitan areas in California and New York ranking among the least free areas, while metropolitan areas in Florida and Texas ranking among the most free areas. However, Stansel (2013) also finds that this variation is not limited to intra-state similarities. Thus, the levels of economic freedom is clearly not identical across areas within a single state, let alone within the U.S. as a whole. The creation of these additional sub-national measurements are important because they allow scholars to study the importance of economic freedom on factors like incomes and entrepreneurship when the differences are not as stark as across countries (Bologna, et al., 2014; Bologna, 2014).

Similarly, in some countries, it is likely that the level of economic freedom is different for different groups of people. Specifically it is possible that within a single country, women and men have different levels of economic freedom. For example, men might have very secure property rights relative to women and international measures are largely picking up men's property rights. Although the EFW index has been found to be positively correlated with the well-being of women in general (Stroup, 2011), there are several indices that show that women's political, economic, and social rights vary greatly across countries (e.g., CIRI Human Rights Dataset). For some countries, therefore, the creation and inclusion of the economic freedoms enjoyed by women would lead to a more accurate measure of the freedoms enjoyed by individuals within the country.

In addition to searching for additional potentially important components of economic freedom and the EFW index, it is also important to understand what causes countries to have higher or lower levels of economic freedom. Thus far, the literature concerning the causes of economic freedom have several different hypothesis with no clear consensus. These hypothesis range from historical causes, such as common law versus civil law ideas (Nattinger and Hall, 2012), to current political processes and public choice theory (Crampton, 2002; Grubel, 2014).

In addition, researchers have argued that institutional change is determined by episodes of crisis and therefore the level of economic freedom today could have been the result of a crisis period (Higgs, 1987; De Haan et al., 2009; Bologna and Young, 2014). Some researchers even argue that economic freedom is in part spatially determined and thus is clustered throughout the world, both formally (through regional agreements) and informally (Hall, Lawson, and Wogtsland, 2011).

Finally, it is important to expand our measures of economic freedom backward in time to the extent that it is possible. A new long-run index of economic freedom, constructed by de la Escosura (2014), is the first serious attempt to undertake this difficult task. His index runs from 1850 to 2007 and measures four dimensions of economic freedom that are included in the EFW index: property rights, money, international trade, and regulation. The creation and improvement of historical indexes of economic freedom such as this one will allow scholars to better understand the long-run evolution and importance of market-oriented institutions.

4 Conclusion

The Economic Freedom of the World index has been cited in over 400 journal articles and has been used in all types of research across business and the social sciences (Hall and Lawson, 2014). This index has been used to show how economic freedom relates to a wide array of economic and social outcomes. Since the EFW index is so widely used in the literature it is extremely important that researchers understand the goal of the index and how to properly utilize this index in their research.

There seem to be three misconceptions about the EFW index. First, the index is designed to capture the extent to which a country's institutions and policies are consistent with a classical liberal definition of economic freedom; it is not designed to be correlated with economic outcomes. Therefore institutions, and the policies of these institutions, must provide voluntary exchange, protection of private property, and personal choice in order to get a high score in the EFW index. This does not mean that a country with a higher level of GDP is more economically free, even if these two measures are correlated. The EFW index cannot be evaluated based on how well it correlates with economic outcomes.

Similarly, since the EFW index is designed to measure economic freedom, where personal choice and the right to private property are essential to that, the

inclusion taxes and government spending is essential. It does not matter if taxes, as policy variables, represent outcomes of the game, rather than rules alone. Government taxation and spending are both cases in which individuals' personal choice of how to allocated resources is being substituted with collective choice when deciding how to use these resources.

Third, the index has five subareas that are all important in determining an overall level of economic freedom. The measures may or may not be correlated; however, they are all included because they are all thought to be important for economic freedom. Therefore, including only one of the components as an explanatory variable may result in omitted variable bias, while including more than one could result in multicollinearity. It is therefore suggested that when trying to explain outcomes using the EFW index that the overall index score is used as the independent variable, or at least be cautioned that disaggregating the index may cause problems.

In addition to understanding the index, it is also important for researchers to continually be looking for a way to improve the index and attempt to understand what the underlying causes of economic freedom are. As time progresses, new statistical techniques are developed as well as new data sets. Since this index is so widely used it is important that it is measuring economic freedom as accurately as possible. Thus, with the clear understanding of the definition of economic freedom and the overall goal of the index, we encourage researchers to explore better ways to measure the components and explore alternative weighting schemes to both aggregate the components into subareas and the subareas into an overall index. It is important for the EFW index to be as accurate as possible such that is enables researchers to explore how economic freedom impacts economic and social outcomes, as well as how these outcomes impact economic freedom.

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