Short Run Macroeconomic Performance and Economic Freedom: Can Economic Growth Rates be Higher and More Stable?

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Abstract

Economists have examined the effects of economic freedom on economic outcomes such as growth, income inequality, and quality of life. Yet, economists have not examined one of the chief criticisms of market capitalism: unstable growth. In this paper I examine the link between market capitalism, as measured by an economic freedom index, and short run macroeconomic performance. Regression results provide no evidence that economic freedom increases fluctuations in the business cycle, but instead support the hypothesis that economic freedom decreases these fluctuations. Economic freedom appears to not only raise material standards of living, but also to mitigate fluctuations around those standards.

> *Modern bourgeois society with its relations of production, of exchange and of property, a society that has conjured up such gigantic means of production and exchange, is like the sorcerer, who is no longer able to control the powers of the nether world whom he has called up by his spells. . . . It is enough to mention the commercial crises . . . . In these crises there breaks out an epidemic that, in all earlier epochs, would have seemed an absurdity—the epidemic of over-production.* Karl Marx and Friedrich Engels, *Manifesto of the Communist Party*, 1848.

> *. . . your system was liable to periodic convulsions . . . . these business cataclysms became more frequent, till, in the latter part of the nineteenth century, there were two years of bad times to one of good . . . . If you would see how needless were these convulsions of business . . . and how entirely they resulted from leaving industry to private and unorganized management, just consider the working of our [centrally-planned] system.* Dr. Leete to Julian West in Edward Bellamy, *Looking Backward: 2000-1887*, 1888.

Critics of market capitalism levy many charges. Market allocation of resources and private ownership of property are blamed for many social and economic ills ranging from the concentration of economic power in the hands of "big business" to environmental degradation, and from income inequality to the vicissitudes of the business cycle.

Economists have addressed many of these charges. As Friedman (1962) argues, market capitalism disperses economic power rather than concentrating it. Using indexes of economic freedom as quantitative proxies for market capitalism, economists have addressed other concerns as well. Norton (1998b) provides evidence that secure property rights, a key component of aggregate economic freedom, increase the share of a country's population with safe water and sanitation while also raising life expectancy. Eposoto and Zaleski (1999) corroborate Norton's findings on the link between economic freedom and life expectancy and add that economic freedom is also

associated with higher literacy rates. Other research provides evidence that economic freedom reduces poverty (Norton 1998a) and income inequality (Berggren 1999, Scully 2002) and may also reduce the gap between male and female life expectancy (Mixon and Roseman 2003). Moreover, an impressive body of research indicates that economic freedom leads to higher rates of economic growth and higher per capita incomes (Olson 1996, Farr, Lord, and Wolfenbarger 1998, Wu and Davis 1999, Gwartney, Lawson, and Holcombe 1999, Heckelman 2000).[2]

Yet, economists have barely begun to investigate the effects of economic freedom on short run macroeconomic performance. Questions of macroeconomic stability may lack the gravity they did when the Great Depression held sway, making Marx and Engel's predictions of capitalism's ultimate collapse seemly apparent. Nevertheless, economists, politicians, and the general public remain concerned about short run economic performance. For academic economists, the topic is of keen interest. Mankiw (1990) in his article titled "A Quick Refresher Course in Macroeconomics," focuses entirely on short run macroeconomic issues and questions,[3] and papers in a 1997 American Economic Association session titled "Is There a Core of Practical Macroeconomics That We Should All Believe?" are almost wholly concerned with short run economic fluctuations and policy responses.[4] Bolch (1998) remarks that "the perfectionist Keynesian vision remains so taken for granted in the vast majority of undergraduate macroeconomics courses, government

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[2] See Berggren (2003) and De Haan, Lundstrom, and Sturm (2006) for comprehensive reviews of the literature on economic freedom. De Haan, Lundstrom, and Sturm review 33 studies of economic freedom and economic growth. They note that none of the studies find that economic freedom reduces growth, and conclude that economic freedom promotes economic growth.

[3] In contrast, Mankiw's (2007) macroeconomics text prominently features classical theory and the Solow growth model.

[4] See Blanchard (1997), Blinder (1997), Eichenbaum (1997), Solow (1997), and Taylor (1997).

control of the business cycle is treated as both proper and efficacious" (495).

Despite this broad concern, the effect of economic freedom on economic fluctuations has received little attention. In a specific analysis of equity market liberalization and capital market openness, Bekaert, Harvey, and Lundblad (2004) find no evidence that financial market liberalization raises consumption variability and that, if anything, depending upon model specification, it reduces consumption variability at statistically significant levels. Similarly, Davidson (2005) examines stock market returns from 65 countries from December 1996 to December 1998 and finds that the Asian financial crisis was not the result of contagion, but rather of rational investors who attacked the currencies and financial markets of countries with mismatched (inconsistent) economic and political-civil freedoms, and managed or pegged exchange rates.

At a more general level, Stiglitz (2002) blames adoption of the "Washington Consensus,"[5] for a wide array of economic ills. In particular, he blames the Washington Consensus for bubbles, capital flight, a credit crunch, and depression in East Asia. Lindsey (2002) offers a differing perspective, consistent with that of Davidson, arguing that underdeveloped markets and bad government policies, including cronyism, industrial policy, a lack of transparency, bank-dominated finance, pegged exchange rates, and IMF policies are to blame for the East Asian collapse.

The objective of this paper is to examine the effect of economic freedom on short run macroeconomic performance using

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[5] The elements of the Washington Consensus are fiscal discipline; redirection of public spending to health, education, and infrastructure; tax reform; competitive exchange rates; secure property rights; deregulation; trade liberalization; privatization; openness to foreign direct investment; and financial liberalization. See Rodrik (1996) for this list and an assessment of how well South Korea and Taiwan complied with these criteria. DeHaan, Lundstrom, and Strum (2006) show that the link between the Washington Consensus and the Fraser Institute's Economic Freedom of the World index is strong.

a cross section of countries from 1970 to 2000. I find no evidence that economic freedom leads to less stable macroeconomic performance, as measured by the standard deviation of per capita real GDP, and instead find strong support for the hypothesis that economic freedom leads to more stable macroeconomic performance.

Before examining this evidence, I briefly explain economic freedom as a theoretical concept and measured variable. Next, I turn to theoretical arguments to explain the link between economic freedom and short run macroeconomic performance. After explaining the data and methodology, I examine regression results that test the direction and significance of the link between economic freedom and economic stability. I offer some final thoughts in the conclusion.

The Meaning and Measure of Economic Freedom

In simple terms, economic freedom is a conceptual measure of the private ownership and market allocation of resources, in lieu of government ownership and control. Expressing the sentiment of many, including the originators of the economic freedom index, Berggren (2003) defines economic freedom as "the degree to which an economy is a market economy—that is, the degree to which it entails the possibility of entering into voluntary contracts within the framework of a stable and predictable rule of law that upholds contracts and protects private property, with a limited degree of interventionism in the form of government ownership, regulations, and taxes" (194). Similarly, in their definition of economic freedom, De Haan, Lundstrom, and Strum (2006) emphasize personal choice, private property, and freedom of exchange. They add that economic freedom entails well-defined and limited roles of government: to establish and protect property rights and to enforce contracts. By expanding the concept to include open trade and capital flows, economic freedom also serves as a proxy for the extent to which a country embraces globalization.

Attempts to quantify economic freedom are problematic, but economists have constructed useful measures. The measure employed in this study is the Fraser Institute's Economic Freedom of the World index (EFW index). As De Haan, Lundstrom, and Strum (2006) note, the EFW index measures a mixture of institutions and policies. Specifically, it assesses a country's economic freedom by examining five broad criteria: government size, legal structure and property rights security, monetary policy, openness to trade, and the regulatory climate. Each of these broad components is measured by sub-components. In all, 38 sub-components are considered. These components are given a rating from zero (the least economic freedom) to ten (the greatest economic freedom). Each broad component's sub-components are averaged (equal weights), and then the broad components are averaged (equal weights) for a summary rating.[6]

Economic Freedom as a Determinant of Macroeconomic Stability

Although the current state of macroeconomics leaves many questions unanswered, macroeconomists have reached a consensus on some important issues.[7] First, macroeconomists generally agree that fluctuations in aggregate demand rather than in aggregate supply cause most economic instability. Second, monetary policy does affect real variables in the short run, though it is not the source of most economic shocks and does not have an impact on real variables in

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[6]For a complete discussion of the meaning of economic freedom and the components that make up the Fraser Institute's Economic Freedom of the World index, see Gwartney and Lawson (2004), 5-10. De Haan, Lundstrom, and Strum (2006) provide a thorough critique of the index, including discussions of its components and aggregation method. The appendix to this paper provides each of the broad components and their respective sub-components.

[7] This brief list of premises to which most (though not all) macroeconomists prescribe is gleaned from Blanchard (1997), Blinder (1997), Eichenbaum (1997), Solow (1997), Taylor (1997), and Mankiw (2007).

the long run. Third, wages and prices are sticky in the short run, so shifts in aggregate demand, whatever their source, can have significant and prolonged effects on real variables.

These generalizations imply that aggregate demand shocks, the primary source of fluctuations in real output, can result from government policies, particularly monetary policy. In addition, exogenous shocks can cause significant fluctuations in real output apart from policy.

Consider an economy growing at its natural, long run trend rate, y_N. Departures from this rate may come because of destabilizing government policy or because of exogenous shocks, as shown in Equation (1):

$$y = y_N + \varepsilon_P + \varepsilon_X, \tag{1}$$

where y is the actual growth rate of real output, ε_P designates policy shocks, and ε_X designates exogenous shocks.

Policy shocks result primarily from central bank accommodation of inflationary expectations so that the central bank must later constrain money growth and induce recession to eliminate inflation.[8] Exogenous shocks may come from many sources, including fluctuations in exchange rates and commodity prices and technological advances. These shocks may require vast reallocations of resources from one sector to another.

The model to this point is clearly inadequate because it neglects those economic institutions and policies that influence economic outcomes and determine an economy's capacity to adjust to policy and exogenous shocks. If a composite measure adequately

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[8] This problem is referred to as the expectations trap or accommodation dilemma in the literature (Eichenbaum 1997). Stock and Watson (2003) conclude that improved monetary policy has reduced U.S. economic volatility since 1984 by 10 to 25 percent. The efficacy of fiscal policy is so questionable that I ignore it. See Eichenbaum (1997).

captures the relevant economic institutions and policies, Equation (1) may be rewritten as:

$$y = y_N + \delta_1(I)\varepsilon_P(I) + \delta_2(I)\varepsilon_X, \qquad (2)$$

where I represents those economic institutions and policies. An economy's propensity to policy shocks is designated by $\varepsilon_P(I)$; its capacity to adjust to policy shocks is designated by $\delta_1(I)$; and its capacity to adjust to exogenous shocks is designated by $\delta_2(I)$.

The effect of economic institutions and policies on economic stability is then,

$$\partial|\Delta y|/\partial I = \delta_1\varepsilon_P'(I) + \varepsilon_P\delta_1'(I) + \varepsilon_X\delta_2'(I). \qquad (3)$$

Therefore, economic institutions and policies may reduce economic instability through smaller (monetary) policy shocks that result in more stable aggregate demand, $\varepsilon_P'(I) < 0$; improved adjustment to (monetary) policy shocks, $\delta_1'(I) < 0$; and improved adjustment to exogenous shocks, $\delta_2'(I) < 0$.

The question to be posed is this: What institutions and policies reduce the likelihood of policy shocks and enable an economy to adjust to these and exogenous shocks so that fluctuations in real output and, commensurately, unemployment, are minimized? Although the EFW index is a composite of many variables, the factors it contains directly or indirectly determine an economy's propensity to policy shocks and its capacity to adjust to these and other shocks.

Monetary Policy, Economic Instability, and Economic Freedom

Economic theory and empirical evidence demonstrate that monetary policy can have significant short run effects on economic growth. The EFW index captures the effect of monetary policy by including a broad component measuring access to "sound money"

(Gwartney and Lawson, 2004). Three of its subcomponents are the recent inflation rate, inflation variability over the past five years, and the difference between money and real GDP growth over the past five and ten years, respectively.[9]

Adjustments to Monetary Policy, Economic Instability, and Economic Freedom
        When monetary policy generates unstable aggregate demand, the severity and duration of this instability is influenced by the economy's nominal wage and price rigidities. These rigidities, in turn, result from efficiency wages, optimal contract lengths, menu costs, coordination failures, or government policies that fix wages and prices. Although the EFW index does not fully capture factors that determine nominal rigidities, its subcomponents include some pertinent measures. Specifically, the index measures the impact of minimum wages and the share of the labor force with wages set by collective bargaining. In addition, the index includes a measure of price controls imposed on business.

Adjustments to Exogenous Shocks, Economic Instability, and Economic Freedom
        All economies are subject to exogenous shocks, whether from technology, exchange rates, or commodity prices. These shocks may necessitate not only price and wage adjustments, but also reallocation of resources to avoid deep and prolonged drops in output and employment.[10] While adjustments to exogenous shocks may be painful in any economy, policies that deter market forces that

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[9] These outcomes, the direct results of monetary policy, may in turn be determined by the underlying institutions governing monetary policy. Central bank independence and commitment to an inflation target, for example, are important institutional determinants of monetary policy and outcomes.
[10] Stock and Watson (2003) attribute 20 to 30 percent of reduced economic volatility in the U.S. to smaller productivity and commodity price shocks, and 40 to 60 percent to unidentifiable "good luck."

adjust nominal values and reallocate resources from declining to expanding sectors should exacerbate the fluctuations caused by those shocks.

To begin, government-owned or subsidized enterprises impede an economy's adjustment to exogenous shocks. State-owned enterprises and subsidized private ones delay bankruptcy and deflect competition. Vested political interests and rent-seeking make these enterprises especially difficult to privatize or liquidate. Policies that sustain production through state-owned enterprises or subsidies may temporarily contribute to economic stability, but when market forces prevail, as is increasingly likely in a global economy, the resultant dislocations of labor, capital, and natural resources will be severe, and the fluctuations in real output high. To capture the degree of state-ownership and subsidies, the EFW index's broad government size component includes subcomponents of government enterprises and investment, and transfers and subsidies, as a percentage of GDP.

As with state-owned or subsidized enterprises, protectionism shields industries from competition, deters innovation, and results in an economy that produces goods and services without regard to comparative advantage. As a result, these economies may be especially ill-suited to the dynamics of a global economy.[11] The EFW index contains a major component on freedom of exchange with foreigners, with subcomponents measuring tariff rates, regulatory trade barriers, and the size of the trade sector relative to expectations.

Exchange rate policies can also bear directly on economic stability. When a central bank no longer has sufficient reserves to support an overvalued currency, the consequences can be wrenching,

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[11] Wolf (2004) argues that this is the case with Latin America. Latin American countries, which have relatively small trade sectors, require large changes in exchange rates to induce expenditure switching. On the other hand, the East Asian countries, which have relatively large trade sectors, are better able to adjust to external shocks because relatively small changes in exchange rates are sufficient to stimulate exports (203-204).

as seen in Europe in 1992, Mexico in 1994, and Southeast Asia in 1997-98. On the other hand, a policy of floating exchange rates eases adjustments to market-dictated changes in currency values. By including as a subcomponent the difference between a country's official exchange rate and its black market rate, the EFW index captures the impact of exchange rate policy on economic volatility.

One factor pivotal to the adjustment to exogenous shocks is the allocation of capital to its most highly valued uses. Financial intermediaries that are privately owned and not overly regulated have an incentive to allocate capital to new, potentially profitable sectors. When nationalized or heavily regulated, financial intermediaries cannot play this crucial role, one that is especially important in developing countries where asymmetric information limits the potential of direct finance.

Of perhaps greater importance, government-directed lending to unprofitable sectors may lead to financial crises when markets realize these loans cannot be repaid. In the worst cases, debt deflation, banking crises, and severe recession result. The EFW index includes many factors that measure financial market regulation and function: the percent of deposits in private banks, the percent of credit extended to the private sector, domestic access to foreign capital, the foreign competition banks face, and whether interest rates on deposits and loans are market-determined.

In addition, the state may adopt policies that encourage resource reallocation through the promotion of new businesses. The index contains subcomponents that measure the ease of starting a new business, and these should go some distance in capturing the effects of business regulations that encourage or impede resource reallocation and economic recovery.

Finally, a stable business environment in which property rights are secure and judicial rulings independent should encourage and stabilize investment spending, as firms benefit from a long time horizon and the enforcement of contracts. On the other hand, uncertainty over property rights and legal protections discourages and

destabilizes investment spending.[12] The EFW index contains a broad category assessing an economy's legal structure and the security of its property rights. Its subcomponents include judicial independence, legal system integrity, the impartiality of courts, and the protection of intellectual property rights.

Summary

The Economic Freedom of the World index provides a measure of many institutions and policies that influence the likelihood of policy shocks and an economy's response to these and external shocks. Greater economic freedom should lead to fewer destabilizing monetary shocks and smoother adjustment to all shocks, whatever their source.

The belief that economic freedom or market capitalism reduces economic fluctuations is diametrically opposed to standard Keynesian and Marxist traditions. For Keynesians, activist government policy is essential to offset an inherently unstable private economy and stabilize the business cycle. For Marxists, the unplanned economy is incapable of order or stability. Central planning is essential for the full employment of resources and economic stability.

To determine whether economic freedom or government control and management better promote economic stability, I conduct an empirical test of the effects of economic freedom on macroeconomic stability using a cross section of countries. In the next section, I explain the data and methodology used to carry out this test.

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[12] Higgs (1997) provides compelling evidence that the length and severity of the Great Depression was in part the result of businessmen's fears that their rights to property and the income derived thereof might be usurped by the Roosevelt administration. Similarly, Archibald and Feldman (1998) provide evidence that uncertainty over the passage and rates applied by the Smoot-Hawley tariff caused a drop in investment spending by U.S. exporters.

Data and Methodology

Because this study assesses the effects of economic freedom on the variability of economic performance across time, it employs the Fraser Institute's chain-weighted economic freedom index from 1970 to 2000.[13] To measure economic volatility, the study employs data from the Penn World Tables on the growth rate of per capita real GDP in constant prices, also from 1970 to 2000.[14] The test of the effect of economic freedom on the variability of economic performance is a regression in which the standard deviation of the growth rate of per capita real GDP (Sy) is regressed against the average economic freedom rating (Xefw) and other control variables (Z), using OLS for a cross section of countries, as shown in the equation below:

$$Sy_i = \alpha_0 + \alpha_1 Xefw_i + \alpha_2 Z_i + \varepsilon_i. \qquad (4)$$

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[13] The Fraser Institute has calculated its Economic Freedom of the World index at five-year intervals since 1970. Beginning in 2000, it began calculating the index annually. The number of countries for which the index is calculated varies, with more countries included in later editions. The chain-weighted summary index is especially useful for time series studies because it corrects for data that are incomplete or inconsistent across time (Gwartney and Lawson, 2004).

[14] In the Penn World Table data, "real" refers to adjustment for purchasing power parity to ensure that cross-country comparisons are as accurate as possible. See Alan Heston, Robert Summers, and Bettina Aten, Penn World Table Version 6.1, Center for International Comparisons at the University of Pennsylvania (CICUP), October 2002, at www.pwt.econ.upenn.edu.

All variables are expressed in natural log form.[15] For consistency, the standard deviation of the growth rate of per capita real GDP and the average value of the economic freedom index are calculated over common time periods of 1980 to 2000 and 1970 to 2000. Extending the time period reduces the number of observations as the number of countries with missing data on real GDP per capita, economic freedom, or both increases.[16]

Turning to the control variables, a country's population (POP) at the beginning of the relevant time period serves as a proxy for the size and diversity of the domestic economy. Large economies, with large domestic markets, benefit from greater division of labor and possibly greater economies of scale, and so should be more stable than small, poorly diversified economies. Another control variable is population growth (POPGR). High population growth rates are likely to also be variable and so increase the standard deviation of per capita real GDP. Per capita real GDP (INCOME) at the beginning of the relevant time period is included in the model to capture an economy's maturity and development. Mature, developed economies should exhibit slower and more stable growth than developing economies. Once an economy reaches technical efficiency, growth from employing underutilized resources is no longer possible. This reduction in an economy's potential growth increases economic stability. Finally, the average of a country's exports and imports as a percent of real GDP (OPEN), calculated at

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[15] Log-log form is used for two reasons. First, I had no priors as to what the functional form of the regressions should be. Estimating the variables in log-log form gives better fit and higher explanatory power than estimating the variables as levels or in log-linear form. Second, and of greater importance, Breusch-Pagan tests reveal heteroskedasticity when the regressions are run with variables expressed as levels. When the variables are expressed in logarithmic form, the hypothesis of a constant variance for the error terms cannot be rejected.

[16] I also estimated Equation (4) over the 1975 to 2000 time period. The results of these regressions are very close to those for the 1980 to 2000 and 1970 to 2000 samples. To avoid redundancy, I do not report these results.

the beginning and ending of the relevant time periods, is included to assess a country's susceptibility to changing export and import prices. This variable may also proxy for economic diversification, if open economies are also more specialized.[17] Table 1 provides summary statistics for all variables.[18]

Before examining the empirical results, the independent variables warrant a closer look because they suffer from multicollinearity that is at times severe. For example, the simple correlation coefficient between economic freedom and per capita real GDP is approximately 0.7, a result that is not surprising, since many studies provide evidence that economic freedom generates higher incomes. In addition, the correlation coefficients between population and openness are less than -0.6, because populous countries have larger domestic economies. Economists commonly recognize that countries with rapid population growth tend to be poorer, and the data bears this out with correlation coefficients between population growth and per capita real GDP of approximately -0.75. And, given the high correlation between economic freedom and per capita real GDP, it is not surprising that the correlation coefficients between economic freedom and population growth are in the range of -0.65. To make an allowance for these collinear relationships, the reported models contain combinations of the independent variables that minimize the inclusion of collinear variables. As expected, when all independent variables are included in the model, fit is high, but few variables are statistically significant.

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[17] The openness variable is not strictly endogenous because the economic freedom index contains the actual size of the trade sector compared to its expected size rather than simply the actual size of the trade sector.
[18] All control variables are also taken from the Penn World Tables.

Table 1. Descriptive Statistics					
Sample Period: 1980-2000					
Variable	Mean	Std. Dev.	Minimum	Maximum	N
Sy	4.09	2.17	1.45	10.83	87
Xefw	5.69	1.08	3.79	8.66	87
Pop. (000s)	42,391	129,440	228	981,235	87
Pop. Growth	0.35	0.20	-0.07	0.81	87
Income	$7,081	$6,126	$443	$22,322	87
Open (%)	70.5	38.9	14.0	245.6	87
Sample Period: 1970-2000					
Variable	Mean	Std. Dev.	Minimum	Maximum	N
Sy	3.85	2.04	1.69	10.93	49
Xefw	5.92	1.06	3.83	8.56	49
Pop. (000s)	38,692	83,027	204	547,569	49
Pop. Growth	0.46	0.28	0.06	0.96	49
Income	$7,628	$5,287	$565	$20,611	49
Open (%)	64.9	42.8	13.7	237.1	49

Empirical Results

Table 2 presents regression results for both sample periods. For all estimates, goodness of fit is satisfactory and explanatory power is high. Turning to the variable of key interest, economic freedom, the models, regardless of specification or sample period, statistically support the hypothesis that economically free countries exhibit more stable economic performance.[19] Economic freedom evidently reduces policy shocks and improves an economy's capacity to adjust to any shock, whether from policy or external causes.

The control variables also perform according to expectations. As expected, the coefficients on population are negative and statistically significant, providing evidence that countries with large, more diversified economies experience more stable economic performance. In Estimate (3), population growth is positive and statistically significant, indicating that high and variable population growth leads to less stable economic performance. The effect of high income, found in Estimate (4), is also consistent with expectations; richer, more developed economies are also statistically more stable. Finally, openness to trade reduces economic stability at statistically significant levels. A reasonable interpretation of this result is while institutions and policies that allocate resources in accordance with comparative advantage promote stability, greater openness exposes an economy to more external shocks.

Examining the results more closely reveals that the response of the standard deviation of per capita real GDP to economic freedom is elastic. In the 1980-2000 sample, for example, a 10 percent increase in the economic freedom rating reduces the standard deviation of per capita real GDP by 13.3 percent. For a country with the sample average economic freedom rating of 5.69 and the sample

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[19] In unreported regressions, population density is included in the model to account for division and specialization of labor that might reduce the amplitude of the business cycle. The variable is never statistically significant at conventional levels.

Table 2. Regression Results					
Dependent Variable: Standard Deviation of Per Capita Real GDP					
Sample period:1980-2000					
	(1)	(2)	(3)	(4)	(5)
Independent Variable	Coefficient/ (t-statistic)	Coefficient/ (t-statistic)	Coefficient/ (t-statistic)	Coefficient/ (t-statistic)	Coefficient/ (t-statistic)
CONSTANT	3.57/(8.28)	4.62/(9.28)	3.81/(5.51)	4.91/(9.77)	2.90/(5.66)
XEFW	-1.33/(-5.34)	-1.39/(-5.93)	-1.05/(-3.46)	-0.83/(-2.49)	-1.42/(-5.77)
POP		-0.10/(-3.60)	-0.10/(-3.32)	-0.11/(-3.95)	
POPGR			0.48/(1.68)		
INCOME				-0.14/(-2.27)	
OPEN					0.20/(2.31)
Adj R-Square	0.242	0.336	0.350	0.367	0.280
F	28.56	22.77	16.44	17.65	17.68
N	87	87	87	87	87
Sample Period 1970-2000					
	(1)	(2)	(3)	(4)	(5)
CONSTANT	3.90/(7.87)	4.77/(7.13)	3.63/(4.27)	5.32/(7.59)	3.42/(6.73)
XEFW	-1.51/(-5.40)	-1.64/(-5.83)	-1.13/(-3.08)	-1.16/(-3.22)	-1.72/(-6.18)
POP		-0.07/(-1.88)	-0.06/(-1.88)	-0.08/(-2.33)	
POPGR			0.48/(2.07)		
INCOME				-0.14/(-2.03)	
OPEN					0.21/(2.51)
Adj R-Square	0.369	0.401	0.441	0.440	0.434
F	29.11	17.11	13.66	13.56	19.36
N	49	49	49	49	49

average standard deviation of per capita real GDP of 4.09, a 10 percent increase in the economic freedom rating to 6.26 reduces the standard deviation of per capita real GDP to 3.55.

Examining the other coefficients reveals that these variables have less economic significance. A 10 percent increase in population for a country with the sample average population would reduce the standard deviation of per capita real GDP from the sample average to only 4.05. Similarly, a 10 percent increase in per capita income for the sample average country would reduce the standard deviation of per capita real GDP to only 4.03. Ten percent increases in population growth and openness in the sample average country would raise the standard deviation of per capita real GDP to 4.29 and 4.17, respectively.

To reiterate, in estimates from each sample period, the economic significance of economic freedom is greater than the economic significance of the control variables. The implication is clear: institutions and policy can have a powerful effect on a country's economic stability. Contrary to Keynesian and Marxist expectations, free economies grow more smoothly than economies with heavy-handed government management and control.

Conclusion

Prior studies have investigated the effects of economic freedom on many measures of human welfare. These studies show that economic freedom raises per capita income and its growth rate, reduces poverty, raises life expectancies and literacy rates, improves environmental quality, and reduces income inequality. Yet, economists have not analyzed the effects of economic freedom on the vexing problem of economic stability. This paper attempts to fill this gap by showing that economic freedom results in more stable economic performance, a finding at odds with the assessment and predictions of Marx and Engels and Bellamy. Market capitalism, as measured by the Economic Freedom of the World index, encompasses many institutions and policies that bear directly upon

economic stability. The empirical results presented here provide no evidence that economic freedom increases economic instability. In fact, the evidence supports the hypothesis that economic freedom results in not only the aforementioned benefits but also more stable macroeconomic performance.

Finally, opportunities for future research abound. Though beyond the scope of this paper, an analysis of the effects of specific components of the economic freedom index on macroeconomic stability should further economists' understanding of the business cycle.[20] Additional work, probably utilizing time series analysis, might investigate the effect of macroeconomic instability on economic freedom. Economists have clearly learned much in recent years about the effects of economic freedom on economic and social outcomes. This paper has sought to provide new insights on the broad and vital question of economic freedom's impact on short run macroeconomic performance.

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[20] The Fraser Institute's website does not provide values for the components of the chain-weighted summary index employed in this paper.

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Appendix: The Areas and Components of the EFW Index

1. Size of Government: Expenditures, Taxes, and Enterprises
   A. General government consumption spending as a percentage of total consumption.
   B. Transfers and subsidies as a percentage of GDP.
   C. Government enterprises and investment as a percentage of GDP.
   D. Top marginal tax rate (and income threshold to which it applies).
      i. Top marginal income tax rate (and income threshold to which it applies).
      ii. Top marginal income and payroll tax rate (and income threshold to which it applies).

2. Legal Structure and Security of Property Rights
   A. Judicial independence: the judiciary is independent and not subject to interference by the government or parties in disputes.
   B. Impartial courts: A trusted legal framework exists for private business to challenge the legality of government actions or regulation.
   C. Protection of intellectual property.
   D. Military interference in rule of law and the political process.
   E. Integrity of the legal system.

3. Access to Sound Money
   A. Average annual growth of the money supply in the last five years minus average annual growth of real GDP in the last ten years.
   B. Standard inflation variability in the last five years.
   C. Recent inflation rate.
   D. Freedom to own foreign currency bank accounts domestically and abroad.

4. Freedom to Exchange with Foreigners
   A. Taxes on international trade.
      i. Revenue from taxes on international trade as a percentage of exports plus imports.
      ii. Mean tariff rate.
      iii. Standard deviation of tariff rates.
   B. Regulatory trade barriers.
      i. Hidden import barriers: No barriers other than published tariffs and quotes.
      ii. Costs of importing: the combined effect of import tariffs, license fees, bank fees, and the time required for administrative red-tape raises costs of importing equipment by (10=10% or less; 0=more than 50%).
   C. Actual size of trade sector compared to expected size.
   D. Difference between official exchange rate and black market rate.
   E. International capital market controls.
      i. Access of citizens to foreign capital markets and foreign access to domestic capital markets.
      ii. Restrictions on the freedom of citizens to engage in capital market exchange with foreigners—index of capital controls among 13 IMF categories.

5. Regulation of Credit, Labor, and Business
   A. Credit market regulations.
      i. Ownership of banks: percentage of deposits held in privately owned banks.
      ii. Competition: domestic banks face competition from foreign banks.
      iii. Extension of credit: percentage of credit extended to private sector.
      iv. Avoidance of interest rate controls and regulations that lead to negative real interest rates.

      v. Interest rate controls: interest rate controls on bank deposits and/or loans are freely determined by the market.

B. Labor market regulations

      i. Impact of minimum wage: the minimum wage, set by law, has little impact on wages because it is too low or not obeyed.

      ii. Hiring and firing practices: hiring and firing practices of companies are determined by private contract.

      iii. Share of labor force whose wages are set by centralized collective bargaining.

      iv. Unemployment benefits: the unemployment benefits system preserves the incentive to work.

      v. Use of conscripts to obtain military personnel.

C. Business regulations

      i. Price controls: extent to which businesses are free to set their own prices.

      ii. Administrative conditions and new businesses: administrative procedures are an important obstacle to starting a new business.

      iii. Time with government bureaucracy: senior management spends a substantial amount of time dealing with government bureaucracy.

      iv. Starting a new business: starting a new business is generally easy.

      v. Irregular payments: irregular, additional payments connected with import and export permits, business licenses, exchange controls, tax assessments, police protection, or loan applications are vary rare.

Source: Gwartney, James, and Robert Lawson. 2004. *Economic Freedom of the World: 2004 Annual Report*. Vancouver: Fraser Institute.