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April 21st, 2023

ECON 2560

The Impact of Economic Freedom on Economic Growth : New Panel Data Evidence

Introduction

Debates about the merits of the free market and government intervention have raged for decades. Traditional economic theory seems to suggest that removing restrictions on economic freedom will lead to better outcomes overall. On the other hand, government intervention is often necessary to correct market failures such as monopolies, recessions, and externalities. The libertarian and monetarist sides in the debate argue that the average consumer knows what is best for them, and will unfailingly pursue rational utility maximization. Advocates of dirigisme believe that the state must direct and control economic activities in order to correct for imperfect information, productive inefficiencies, and other similar problems with the laissez-faire capitalism. In the years since the collapse of the Soviet Union and widespread push to liberalize, especially in Eastern Europe, the practical implications of this connection between freedom and growth have been the targets of careful observation. As policymakers work to make informed decisions for their communities, it is necessary to have a solid understanding of the strengths of the free market economy.

This paper seeks to analyze the relationship between economic freedom and economic growth, to provide a framework for future research as well as policymaking. Using the Heritage

Foundation's Index of Economic Freedom, the economic freedom of a country will be compared against the GDP growth rate, in order to define the nature of the relationship between the two. Secondarily, the paper will attempt to identify the nature of the relationship between foreign direct investment (FDI) and growth, in both direction and statistical significance.

Controlling various macroeconomic indicators, the findings of this paper indicate that there is a positive, statistically significant relationship between economic freedom and economic growth. The linear panel regression model indicates there is a strong positive relationship between economic freedom as indicated by the Heritage Foundation and economic growth. The relationship between FDI and growth is also found to be statistically significant and positive. It also concludes the statistical significance of a strong negative shock to growth in 2022, likely caused by the supply shocks of the early 2020s. The next section entails a review of the most recent and relevant research on the topic.

Literature Review

Many studies have been published on this topic. At the core, the question asked is this : are economically free nations more likely to experience positive economic growth than unfree ones? Gwartney, Lawson, and Holcombe concluded that economic freedom is a significant determinant of economic growth (Gwartney et al., 1999). Haan and Sturm concluded that higher freedom leads to higher growth, but that the levels are not correlated (de Haan & Sturm, 2000). Bengoa and Sanchez-Robles in 2002 concluded that FDI inflows are positively correlated with growth, especially through the transfer of advanced technology and improvements in infrastructure (Bengoa & Sanchez-Robles, 2003). Haydaraoglu convincingly argued that size of

government is negatively associated with growth, that the relationship between economic freedom and economic growth is positive, and that FDI inflows are a positive and significant determinant of economic growth (Haydaraoğlu, 2016). More recently, Brkić, Gradojević, and Ignjatijević determined that economic freedom was statistically significant on a linear model for growth, while change in economic freedom was significant for growth in a more dynamic model. (Brkić et al., 2020) This paper differs from Brkić, Gradojević, and Ignjatijević due to its use of more recent and geographically diverse data over a much wider range, as well as its intent to prove that foreign direct investment has a positive, statistically significant impact on growth. It is an attempt to update the findings in the face of chronic supply chain problems due to the macroeconomic shocks of the 2020s.

Data Description

This research uses the Heritage Foundation's Index of Economic Freedom, which measures economic freedom in twelve equally-weighted measures. Those measures are property rights, judicial effectiveness, government spending, government integrity, tax burden, fiscal health, business freedom, labor freedom, monetary freedom, trade freedom, investment freedom, and financial freedom. Also included in the Index, though separate from freedom score, are macroeconomic statistics including inflation, public debt, tax burden, GDP per capita, and foreign direct investment inflows.

The data used in this analysis was put together in the following way. From the Heritage Foundation's Index of Economic Freedom database, I used the past six years of economic freedom index scores, along with relevant macroeconomic statistics. The sample ran from 2017

to 2022. These statistics include inflation (INF), public debt as percentage of GDP (DEBT), tax burden as percentage of GDP (TAX), GDP per capita (PER_CAP), and foreign direct investment (FDI). Missing from the Index, however, are high quality, accurate statistics on population growth. Since population growth is a critical component of GDP growth through expansion of the labor force, it would be erroneous to omit them. I used the World Bank's data set on population growth figures and merged the two panel data sets. This merging and cleaning was primarily done in Python, through the Pandas module.

Table 1 : Descriptive Statistics

	mean	median	stdev	min	max
Score	61.529904	61.100000	10.276853	24.7	90.20
GDP Growth Rate (%)	1.621154	2.500000	5.007013	-35.0	43.40
Inflation (%)	921.954904	2.400000	28837.402947	-16.4	929789.50
FDI Inflow (Millions)	9240.940006	1130.400000	29729.491728	0.0	391104.00
Tax Burden % of GDP	21.795096	20.500000	10.210221	0.1	59.60
Pop_growth	1.165352	1.144247	1.265940	-8.8	6.91
GDP per Capita (PPP)	20972.414135	13137.500000	22209.399453	630.0	132099.00
Public Debt (% of GDP)	58.863942	50.800000	37.232686	0.0	304.10

The panel regression is specified as follows :

$Growth\_rate_{t,i} = ß0 + ß1score_{t,i} + ß2INF_{t,i} - ß3DEBT_{t,i} - ß4TAX_{t,i} + ß5POP_{t,i} - ß6PER\_CAP_{t,i} + ß7FDI_{t,i} + u_{t,i}$

Year fixed effects and regional fixed effects are taken into account in order to understand regional differences, as well as the relative stability of the late 2010s compared to the large-scale macroeconomic shocks of the early 2020s.

Empirical Results

Running this regression, we get results consisting of the following table. Holding everything else constant, freedom score has a positive coefficient for growth, indicating that freer countries will experience more growth. Inflation, public debt, tax burden, and GDP per capita have negative coefficients, indicating that higher inflation, public debt, taxes, and existing levels of wealth will slow growth. This is consistent with macroeconomic theory. Inflation tends to stunt growth, as does a large public debt and excessive taxation. Wealthier, developed countries tend to grow less quickly than poorer developing countries. The negative effect on growth of 2022 is notable here for the year fixed effects, though causes of this downturn could include the COVID-19 Pandemic or the Russian invasion of Ukraine and their resulting supply shocks, to name two examples. These results are expected. The model has an R-squared of 0.417, which is an acceptable fit.

Table 2 : Regression Results

	Dependent variable:		
	growth_rate		
	(1)	(2)	(3)
score	0.049***	0.125***	0.113***
	(0.015)	(0.020)	(0.017)
inflation		-0.00001**	-0.00001***
		(0.00001)	(0.00000)
public_debt		-0.029***	-0.016***
		(0.004)	(0.004)

tax_burden	-0.003	-0.034**	
	(0.016)	(0.016)	
pop_growth	0.537***	0.510***	
	(0.128)	(0.128)	
per_capita	-0.0001***	-0.0001***	
	(0.00001)	(0.00001)	
fdi_inflow	0.00001**	0.00001***	
	(0.00001)	(0.00000)	
factor(Year)2018		0.112	
		(0.416)	
factor(Year)2019		1.030**	
		(0.422)	
factor(Year)2020		0.915**	
		(0.420)	
factor(Year)2021		0.304	
		(0.425)	
factor(Year)2022		-6.369***	
		(0.430)	
factor(Region)Asia-Pacific		2.124***	
		(0.392)	
factor(Region)Europe		2.185***	
		(0.438)	
factor(Region)Middle East / North Africa		2.330***	
		(0.850)	
factor(Region)Middle East and North Africa		1.029	
		(0.634)	
factor(Region)Sub-Saharan Africa		1.554***	
		(0.427)	
Constant	-1.395	-3.892***	-4.108***
	(0.939)	(1.243)	(1.137)
Observations	1,040	1,040	1,040
R2	0.010	0.140	0.417
Adjusted R2	0.009	0.134	0.407
Residual Std. Error	4.984 (df = 1038)	4.660 (df = 1032)	3.855 (df = 1022)
F Statistic	10.613*** (df = 1; 1038)	23.931*** (df = 7; 1032)	42.998*** (df = 17; 1022)
Note:			*p<0.1; **p<0.05; ***p<0.01

I estimate three different models. The dependent variable is economic growth, with the independent variable as economic freedom index score. In the first model, I run a linear regression of growth_rate on score with no control variables or fixed effects. The coefficient is positive and statistically significant, indicating a positive relationship between economic freedom and economic growth. The coefficient indicates that a 1 point increase in economic freedom score will increase the GDP growth rate percentage by 0.049. This model is not very useful, as it suffers from heavy omitted variable bias, leaving out important determinants of growth such as population growth. A second model is necessary, one with added control variables.

In the second model, I introduce traditional macroeconomic indicators as control variables. Inflation, public debt, tax burden, population growth, income per capita, and foreign direct investment inflow in order to control for factors that otherwise might slow or accelerate the growth of an economy and are well documented. In the second model, once accounting for these indicators, the coefficient of freedom score increases further. The new coefficient, both positive and statistically significant, indicates that a 1 point increase in economic freedom score will result in an increase of 0.125 in the GDP growth rate percentage. However, the R-squared of 0.14 indicates that the model is not particularly well fit. With such a diverse range of countries being surveyed over a volatile macroeconomic time period, fixed time and fixed region effects should be recognized in order to account for supply shocks and various regional differences

In the third model, I introduce fixed region and year effects in order to control for structural differences across regions and the rapidly changing macroeconomic conditions of the early 2020s. The fit on this model is much better, with an R-squared of nearly 0.42. The coefficient of score is now 0.113, indicating a 1 point increase in economic freedom will increase GDP growth rate percentage by 0.113. The model also shows a statistically significant downturn in the year 2022, possibly from chronic supply chain issues, though further research would have to be conducted to ascertain the full extent of the causes and consequences.

In this model, I also observe a statistically significant positive relationship between FDI inflows and economic growth. These results are consistent with Haydaraoğlu, who finds a positive and statistically significant relationship between FDI and growth. (Haydaraoğlu, 2016) These results disagree with Brkić et. al, who estimated a positive coefficient but not a statistically significant one. (Brkić et al., 2020)

Interpretation and Conclusion

The results of this analysis confirm that there is a statistically significant, positive relationship between economic freedom and economic growth. The effect remains significant even when controlling for traditional macroeconomic indicators such as inflation, public debt, and population growth. This paper confirms that economically free countries tend to be more prosperous. Similarly to Haydaraoğlu, but unlike Brkić et al., I have also found that FDI has a statistically significant and positive effect on economic growth. These results tend to agree with the current literature. The fact that economic freedom leads to more economic growth implies that policymakers should strive to implement policies that develop and expand economic

freedom. However, due to the number of institutional, cultural, and social barriers to such liberalization, it is anything but a simple task.

The channels through which economic freedom affects economic growth are very well explored in traditional theory. Emphasis has been on the superior abilities of the individual consumer, as well as the efficient nature of the market mechanism in regards to distribution. The move away from command economies following the disintegration of the Soviet sphere has been instructive for liberalizing countries around the globe. In recent years, scholars have begun to emphasize the potential of information and technology transfers that are facilitated by, among other things, globalization and the resulting inflow of foreign expertise, technology, and skills.

These results also show the impact of the macroeconomic shocks of the early 2020s, which has yet to be researched extensively in regards to the effect of economic freedom on economic growth. Future research could focus on the supply shocks of the 2020s, looking specifically at how they affected economic freedom and economic growth.

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