

Title: Evaluating the effect of Economic Freedom and other Factors
on the Economic Prosperity of Nations

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Abstract:

In this paper, we aim to discuss the effects of variety of different economic freedom factors on real GDP (Gross Domestic Product) per capita of a country based on our initial hypothesis - higher the degree of economic freedom, higher the level of economic activity and hence the higher the per capita real GDP level. We will also evaluate the extent by which various economic freedom indexes affect a country's economic well-being to determine which freedom indexes have stronger effect on the GDP per capita of a country compared to the others. Having identified the stronger and more impacting economic freedom indexes, we will try to improve the econometric model by using variable selection methods and possibly non-linear regression methods to further understand the relationship between per capita GDP and the economic freedom factors that affect it.

I. Introduction

For a long time, great intellectual debate on the effect of economic freedom has ensued in the economic world. On one side of this debate have been those philosophers and economists who advocate an economic system based on private property and free markets (in other words economic freedom). On the other side of this debate are people hostile to economic freedom who instead argue for an economic system characterized by centralized economic planning and state control of the means of production. Adam Smith was one of the first economists to argue for a version of economic freedom. Smith had a radical, fresh understanding of how human societies actually work. He realised that social harmony would emerge naturally as human beings struggled to find ways to live and work with each other. Freedom and self-interest need not produce chaos, but – as if guided by an ‘invisible hand’ – order and concord. On the other hand, Karl Marx and other such opponents of economic freedom argue that free markets lead to monopolies, chronic economic crises, income inequality, and increasing degradation of the poor, and that centralized political control of people's economic lives avoids these problems of the marketplace. They deem economic life simply too important to be left up to the decentralized decisions of individuals.

Hence, the debate regarding economic freedom is certainly an important one. Indeed, the stark differences in the standards of living of people in economically freer systems compared with those in less-free systems have become more and more obvious: North versus South Korea, East versus West Germany, Estonia versus Finland, and Cubans living in Miami versus Cubans living in Cuba are

examples. In each case, people in the freer economy have better lives, in virtually every way, than their counterparts in the less-free economies. Our paper aims to quantify this relationship between economic freedom and prosperity over a wider range of nations.

II. Literature Review

For the research paper, we used the following economics journal papers as our preliminary basis:

- A. *The concept and measurement of economic freedom - By James Gwartneya, Robert Lawson published in the the European Journal of Political Economy.*

This paper aims to determine the components or metrics for measurement of economic freedom. The key ingredients of economic freedom are personal choice, voluntary exchange, freedom to compete, and protection of person and property. Earlier versions of the Economic Freedom of the World index had been based almost exclusively on objective quantifiable data. However, some important elements of economic freedom, particularly those dealing with property rights and regulatory restraints, are difficult to capture with objective measures. This paper aims to evaluate the significance of these qualitative factors as indexes of economic freedom and therefore presents a revised and extended index that incorporates survey data on property rights/legal structure and on government regulation, areas of economic freedom that are particularly difficult to measure. The degree of economic freedom is therefore influenced by numerous factors. No single statistic can wholistically capture all of the factors. Hence, due to lack of absolute precision of economic freedom measures, we must ignore minor differences between states or nations.

This research paper forms the basis of our project since we will use these quantitative measures of economic freedom - i.e. economic freedom indexes to formulate an econometric regression model evaluating the effect of these economic freedom indexes on real GDP per capita of nations.

- B. *Carlsson, Fredrik, and Susanna Lundström. "Economic Freedom and Growth: Decomposing the Effects." Public Choice 112.3-4 (2002): 335-44*

In their paper "Economic freedom and growth: Decomposing the effects", Carlsson and Lundström concluded that it is not only important to analyze an overall index of economic freedom, but it is also important to "investigate which components of the economic freedom indices that are important for growth and the direction of these effects." Their decomposition of economic freedom found that government size negatively impacted GDP whereas legal structure,

private ownership, and freedom to use alternative forms of currency had positive and robust relations to fiscal performance.

In our paper, we aim to explore the effects of each economic freedom indicator individually to determine which indices are significant and which aren't. We also want to evaluate the effect of individual indices on a country's GDP to verify Carlson and Lundstrom's findings.

- C. *Do Changes in Economic Freedom affect Well-Being? By Ariel R. Belasen and R.W. Hafer (Southern Illinois University Edwardsville – USA) published in the Journal of Regional Analysis & Policy.*

This paper tests the relationship between changes in economic freedom and well-being of populations in different states across the United States, concluding that improvements in economic freedom lead to increases in well-being for US states on an average. This served to validate our initial hypothesis - increase in freedom is generally positively and significantly correlated with measures of well-being. In addition, further analysis in the paper shows that presence of regional variations across the states, incorporated into the model by adding economic control variables and regional dummy variables, suggests that there are important aspects about the clustering of well-being and economic freedom that deserve further analysis.

What we want to do in our research paper is modify the model and scale it up from being representative of just the US states to being representative of the world. We understand that our variables might vary a bit to incorporate the significant differences between US and other economies of the world. Besides, economic freedom within the states has a very small range compared to economic freedom index values ranging across the different nations in the world. To explain the large range of variation in prosperity between countries, we will also add additional variables in the model such as gross investment, savings, consumption expenditures, imports and exports.

III. Data

In this paper, we are first going to discuss the effects of several different economic factors (independent variable) over the GDP (Gross Domestic Product) of a country (dependent variable). We will also discuss by what extent can a factor affects a country's economic well-being by cross-comparing which of the economic factors have a stronger effect on the real GDP per capita of a country. Having identified the strongest economic freedom indicators (variables that have the highest impact), we will add other independent variables such as gross investment, savings, consumption expenditures, imports and

exports in order to explain the variation in GDP across countries. We will further improve the models by identifying outliers and using variable selection methods to strengthen our model explaining the relationship between the GDP of countries and several factors affecting it.

Dependent Variable:

The dependent variable in our models is the GDP of a country. In all subsequent models, when we mention GDP, we are referring to the real GDP per capita at prices in year 2012. Since different countries have different populations, it's meaningless to talk about a country's economic well-being by simply looking at the total GDP. Therefore we use the GDP per capita, which is the GDP divided by the population of each country. Furthermore, because the exchange rate and economic conditions in different countries can be very different, the purchase power of 1 US Dollar can be very different in different countries. Hence the GDP of different countries must be adjusted on the basis of different price levels. Since understanding GDP is not the main focus of this project, we will not list detailed equations and process for calculating the real GDP per capita. Instead, we will use the real GDP data adjusted for price levels in the year 2012 directly extracted from the International Monetary Fund database to provide accuracy and avoid unnecessary calculations.

Independent Variables:

In order to quantify the economic freedom of a country, we will use the Indexes of Economic Freedom measured by The Heritage Foundation for the year 2012. There are ten categories of economic freedom measures, with each measuring one aspect of the economy and the scores range from 0-100 with 0 representing the least free and 100 representing the freest. While f4 is the only exception: f4=100 means the government spends the most and f4=0 means the government spends the least. We also have data for the Overall Economic Freedom Index (ef) for the year 2012, ranging from 0 – 100 with 0 representing the least free and 100 representing the freest.

Table 1 – Descriptive Statistics of Economic Freedom Indicators

Variable	Variable Description	Mean	Standard Deviation	Min	Max
f1	Property Rights	43.37	23.98	5	95
f2	Freedom from Corruption	40.33	20.99	0	95
f3	Fiscal Freedom	77.75	12.23	39.6	99.9
f4	Gov't Spending	61.85	23.11	0	96.8
f5	Business Freedom	65.09	17.01	17.3	99.9

f6	Labor Freedom	60.89	16.18	20	95.5
f7	Monetary Freedom	74.02	9.04	0	90.6
f8	Trade Freedom	74.91	11.16	33.4	90
f9	Investment Freedom	52.43	23.26	0	95
f10	Financial Freedom	49.29	18.66	10	90
ef	Economic Freedom Index	62.14	9.65	36.3	88

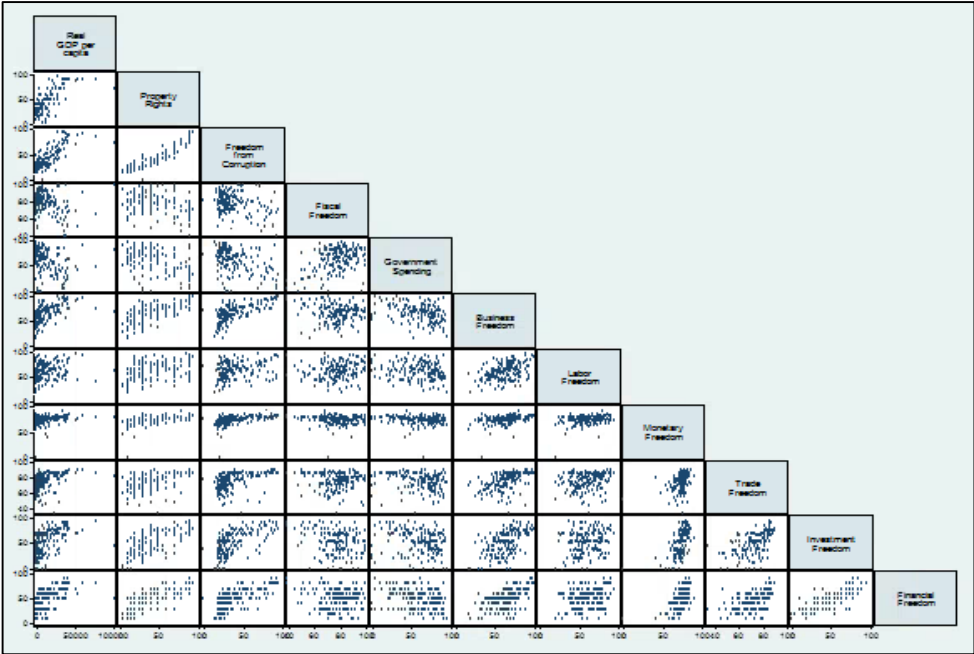


Figure 1 – Scatterplot Matrix of all 10 Economic Freedom indicators and real GDP per capita.

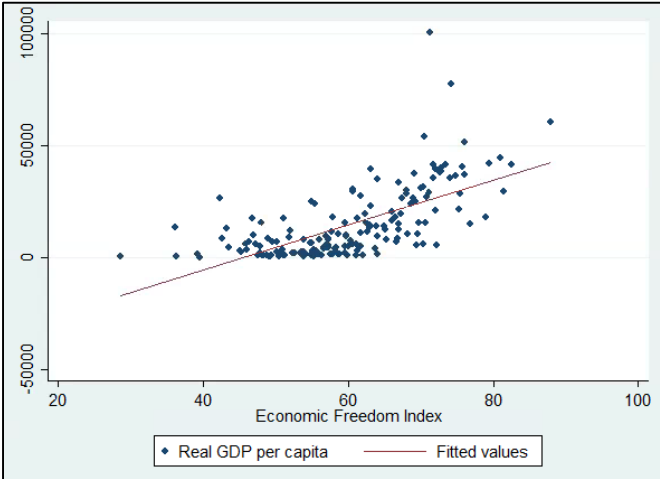


Figure 2: Scatterplot of GDP vs Economic Freedom Index (with fitted line)

Having collected all the necessary data, we will now proceed to evaluating the Gauss-Markov assumptions before we formulate the linear regression models.

Gauss-Markov Assumptions (for Models 1 and 2):

- From figure 2 above, a linear trend between economic freedom index and real GDP per capita is evident. Hence, Assumption 1 is satisfied that dependent variable is linearly related to the independent variable(s).
- The sample of countries considered in the models is random, thereby satisfying Assumption 2.
- From the descriptive statistics of independent variables and the scatterplot matrix given above (fig 1), it is evident that the sample outcomes on the independent variables are not all the same value – leading to sample variation in the explanatory variable. Hence Gauss-Markov Assumption 3 is satisfied.
- Assumptions 4 and 5 will be dealt with after the linear regression model has been formulated.

In the subsequent models, we will incorporate additional variables that explain the variation in GDP across countries that are as follows:

Table 2 – Descriptive Statistics of additional factors affecting GDP

Variable	Variable Description	Mean	Standard Deviation	Min	Max
Net Exports	Total exports – Total imports	3.09e+09	3.45e+10	-1.45e+11	2.03e+11
Gross Savings	Savings as a % of GDP	20.70	10.91	-5.6	54.8
Unemployment Rate	% of unemployed population	8.85	5.54	0.6	26.5
Interest Rate	Annualized interest rate	5.70	4.89	0.05	30

All the above data for the year 2012 is expressed in terms of US dollars and obtained from The World Factbook – Central intelligence Agency.

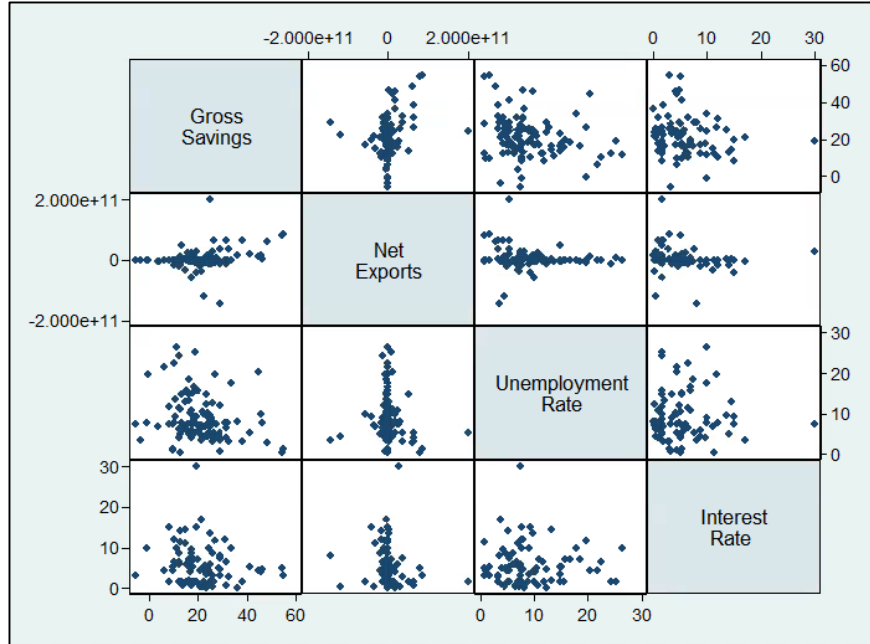


Figure 3: Scatterplot matrix of independent variables and $\log(\text{GDP})$

Gauss-Markov Assumptions (for Models 3):

- From our understanding of macroeconomics, we know that GDP of a country is (positively) linearly related with net exports. Hence, we will use a linear regression model regressing GDP on the above mentioned explanatory variables, thereby satisfying Assumption 1.
- The sample of countries considered in the models is random, thereby satisfying Assumption 2.
- From the descriptive statistics of independent variables (Table 2) and the scatterplot matrix given above (fig 3), it is evident that the sample outcomes on the independent variables are not all the same value – leading to sample variation in the explanatory variable. We can also infer from the scatterplot matrix that there is not exact relation amongst the independent variables. Hence, there is no perfect collinearity among variables - Gauss-Markov Assumption 3 is satisfied.
- Assumptions 4 and 5 will be dealt with after the linear regression model has been formulated.

IV. Results

Having verified Gauss-Markov assumptions, we proceed with formulating the linear regression models. First, we analyzed the relationship between the GDP and the economic freedom of a country. On regressing real GDP per capita over the Economic Freedom Index, we get the following simple linear regression model:

MODEL 1: $gdp = \beta_0 + \beta_1 ef + u$

Predictors	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
<i>ef</i>	1000.17	90.06	11.11	0.000	822.37	1177.97
<i>cons</i>	-45283.89	5481.35	-8.26	0.000	-56105.56	-34462.22

No. of observations	169
R-square	0.4248
Adjusted R-square	0.4214

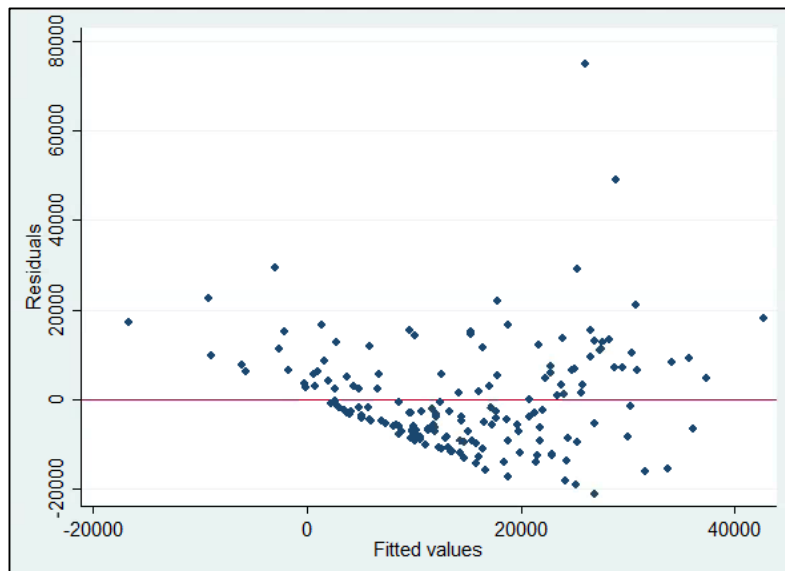


Figure 4 – Residuals vs Fitted Values for Model 1

- From the residuals vs fitted values plot above, it is evident that most of the residuals lie around the line $y=0$. Hence, it is safe to conclude that the conditional mean of the residuals is zero – Gauss-Markov Assumption 4 is satisfied.
- However, it is evident that the variance of the residuals is non-constant, it appears to be increasing. Thus, Assumption 5 (homoscedasticity) is violated.

Statistical Inference:

- Based on p-values shown for Model 1, we can safely conclude that both the constant (B_0) and coefficient of 'ef' (B_1) are significant.
- The B_1 coefficient represents the increase in real GDP per capita for every unit increase in ef value – that is, when ef increases by 1, real GDP per capita of the country increases by 1000.17.

- However, since the Model violates assumption 5 and the Rsquare value is fairly low (0.4248), we know that is model is not sufficient to explain the relation between economic freedom and GDP of countries.

On regressing real GDP per capita over the 10 economic freedom indices, we get the following multiple linear regression model:

$$\text{MODEL 2: } gdp = \beta_0 + \beta_1 f_1 + \beta_2 f_2 + \beta_3 f_3 + \beta_4 f_4 + \beta_5 f_5 + \beta_6 f_6 + \beta_7 f_7 + \beta_8 f_8 + \beta_9 f_9 + \beta_{10} f_{10} + u$$

<i>Predictors</i>	<i>Coef.</i>	<i>Std. Err.</i>	<i>t</i>	<i>P> t </i>	<i>[95% Conf. Interval]</i>	
<i>f1</i>	82.09	97.02	0.85	0.399	-109.53	273.71
<i>f2</i>	534.74	97.86	5.46	0.000	341.45	728.03
<i>f3</i>	124.41	72.46	1.72	0.088	-18.71	267.52
<i>f4</i>	-27.86	37.91	-0.73	0.464	-102.73	47.02
<i>f5</i>	37.50	64.70	0.58	0.563	-90.28	165.28
<i>f6</i>	-81.06	50.95	-1.59	0.114	-181.69	19.57
<i>f7</i>	-26.49	98.13	-0.27	0.788	-220.30	167.32
<i>f8</i>	177.16	85.00	2.08	0.039	9.26	345.06
<i>f9</i>	-99.89	59.77	-1.67	0.097	-217.93	18.16
<i>f10</i>	41.51	75.85	0.55	0.585	-108.29	191.32
<i>cons</i>	-23986.01	9256.83	-2.59	0.010	-42269.11	-5702.91

No. of observations	168
R-square	0.6736
Adjusted R-square	0.6530

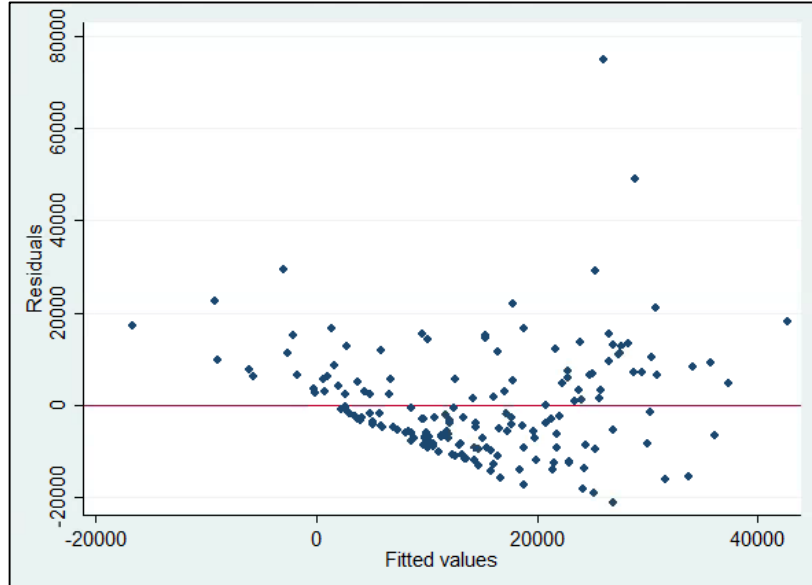


Figure 5 – Residuals vs Fitted Values for Model 2

- From the residuals vs fitted values plot above, we can see that most of the residuals lie around the line $y=0$. Hence, it is safe to conclude that the conditional mean of the residuals is zero – Gauss-Markov Assumption 4 is satisfied.
- However, it is evident that the variance of residuals is non-constant; it appears to be increasing. Thus, Assumption 5 (homoscedasticity) is violated.

Since all the 10 variables are indicators of freedom, correlation between the variables is highly likely. The table below lists the values for correlation among the 10 economic freedom predictor variables.

Table 3 – Correlation among the 10 economic freedom predictor variables

	f1	f2	f3	f4	f5	f6	f7	f8	f9	f10
f1	1.000									
f2	-0.817	1.000								
f3	0.025	0.154	1.000							
f4	0.064	0.013	-0.387	1.000						
f5	-0.118	-0.123	-0.195	0.197	1.000					
f6	0.085	0.038	-0.230	0.078	-0.190	1.000				
f7	0.148	0.101	0.017	-0.070	0.026	-0.104	1.000			
f8	0.107	-0.090	-0.113	0.135	-0.129	0.022	-0.044	1.000		
f9	-0.166	0.114	0.183	-0.105	-0.109	0.097	-0.189	-0.246	1.000	
f10	-0.212	0.018	-0.129	-0.034	-0.019	-0.047	-0.078	-0.156	-0.515	1.000

From the table above, we can see that the correlation between variables is not significantly large. Hence, we can't conclude anything. We now conduct a test for multicollinearity by determining the Variance Inflation Factor for all explanatory variables. As a rule of thumb, a variable whose VIF values are greater than 10 needs further investigation.

Table 4 – Variance Inflation Factor values for all predictor variables

Variable	Variance Inflation Factor
f1	10.47
f2	8.17
f10	3.88
f9	3.74
f5	2.34
f8	1.74
f7	1.52
f3	1.52
f4	1.49
f6	1.31

Statistical Inference:

- The coefficient estimates for each economic freedom indicator represent the increase in the real GDP per capita of a country if the relevant economic freedom indicator increases by 1 unit, holding all other factors constant. For example, if all freedom indicators except f1 were held constant, for every 1 unit increase in the value of f1 for a country, that country's real GDP per capita would increase by \$82.10 (according to price levels in 2012).
- The Rsquare value indicates 67.36% of the data can be jointly explained by explanatory variables included in the model, which is an improvement from our previous simple linear regression model. However, we need to further improve our model.
- Based on Table 4 values, f1 – Property Rights is the only variable that has a VIF value greater than 10. Hence, we will consider a model excluding f1.
- In addition, based on p-values and the 95% confidence levels shown for Model 2 it appears that only 2 economic freedom indicators (f2 – Freedom from Corruption and f8- Trade Freedom) are significant. Both these explanatory variables have a positive effect on the real GDP value, which means more freedom from corruption and trade freedom can lead to more economic prosperity. Fiscal freedom (f3) and Investment Freedom (f9) are also significant, but only at significant levels greater than, equal to 10%. For the subsequent models, we will only carry forward the 2 variables that are significant at 5% level, namely f2 and f8.

Having found the 2 most significant freedom indicators (f2 and f8), we will now include the following additional variables - Net Exports, Gross Savings, Unemployment Rate, Interest Rate - in order to further explain the variation in GDP across nations.

On regressing real GDP per capita against the above stated variables in addition to the 2 statistically significant economic freedom indicators (from Model 2), we get the following model:

MODEL 3: $gdp = \beta_0 + \beta_1(f2) + \beta_2(f8) + \beta_3(X) + \beta_4(S) + \beta_5(UR) + \beta_6(IR) + u$

<i>Predictors</i>	<i>Coef.</i>	<i>Std. Err.</i>	<i>t</i>	<i>P> t </i>	<i>[95% Conf. Interval]</i>	
f2	466.77	66.37	7.03	0.000	334.60	598.94
f8	367.31	162.16	2.27	0.026	44.42	690.21
Net Exports (X)	5.30e-08	3.03e-08	1.75	0.084	-7.30e-09	1.13e-07
Gross Savings(S)	395.64	110.07	3.59	0.001	176.46	614.81
Unemployment Rate (UR)	-126.68	195.32	-0.65	0.519	-515.60	262.25
Interest Rate (IR)	-197.57	255.75	-0.77	0.442	-706.83	311.69
_cons	-38138.17	12369.40	-3.08	0.003	-62768.79	13507.54

No. of observations	84	F(6, 77) statistic	33.12
R-square	0.7207	Prob > F	0.0000
Adjusted R-square	0.6990	Squared Sum of Residuals	7.4284e+09

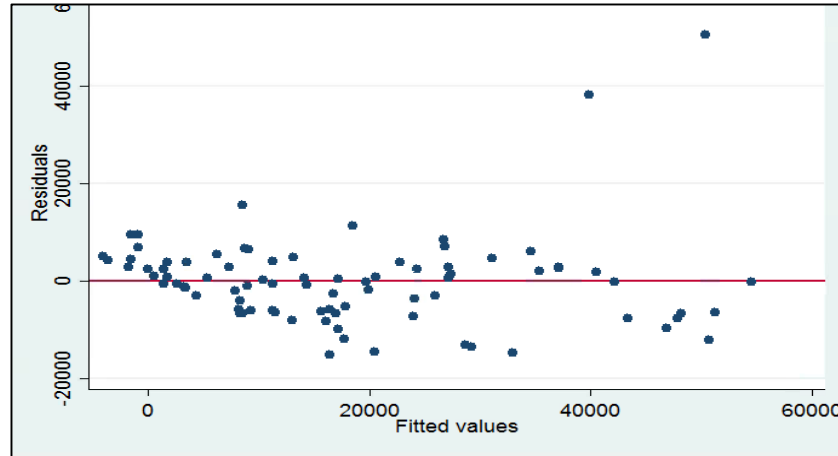


Figure 6 – Residuals vs Fitted Values for Model 3

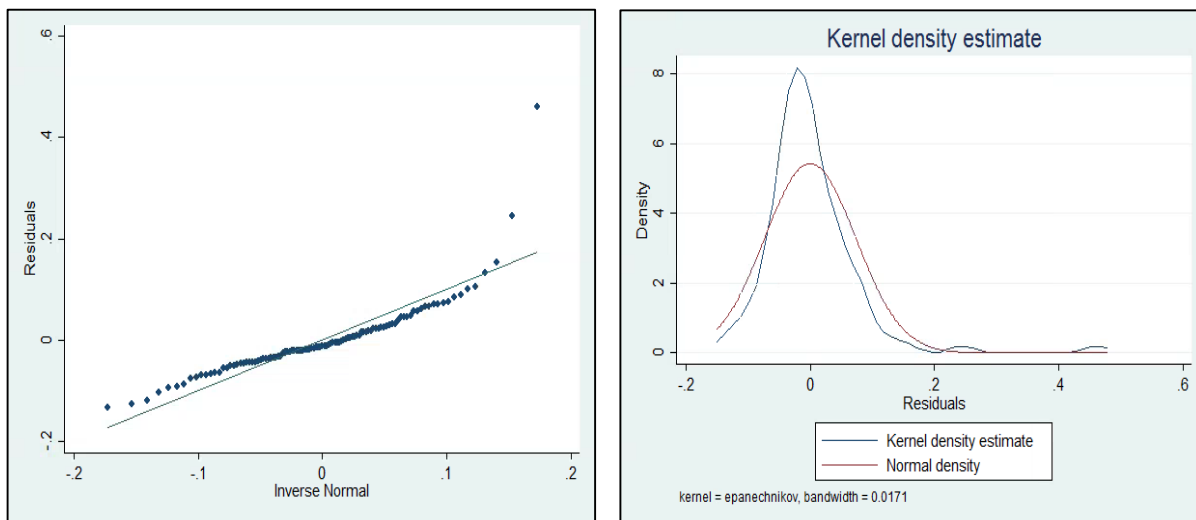


Figure 7 – Quantile-quantile and Kernel Density plot of residuals from Model 3

- Most of the residuals on the residual vs fitted plot above lie around the line $y=0$. Hence, we can conclude that conditional mean of residuals is zero – Gauss-Markov Assumption 4 is satisfied.
- The variance of residuals also appears to be constant; there is no evident pattern. Hence, Assumption 5 (homoscedasticity) is also satisfied.
- Having satisfied all Gauss-Markov assumptions, we now proceed to check for the CLM Assumption 6 – normality of the residuals. The graphs above (fig 7) show that assumption 6 is also satisfied. Since all the residuals lie close to the straight line in the Normal Quantile-Quantile plot, we can conclude that the residuals follow a Normal distribution. This is also verified by the Kernel density plot also verifies this where the residuals clearly follow a bell-shaped curve pattern, like the normal distribution. Hence, the residuals are normal distributed with zero mean and constant distribution.

Statistical Inference:

- The coefficient estimates for each explanatory variable represent the increase in the real GDP per capita of a country if the value of that explanatory variable increases by 1 unit, holding all other factors constant. The coefficient estimates of the 2 freedom indicators are positive which supports our hypothesis that as economic freedom in a country increases, the real GDP per capita of the country increases. For example, if all explanatory variables and other factors affecting real GDP per capita except f2 were held constant, for every 1 unit increase in the value of f2 for a country, that country's real GDP per capita would increase by \$466.77 (according to price levels in 2012).
- Savings and Net Exports also have a positive effect on a country's GDP which is supported by the model since the coefficient estimates of these 2 variables are also positive.
- As expected, unemployment rate has negative effect on the GDP of a country. Hence, as unemployment rate in a country increases by 1%, its real GDP per capita decreases by \$126.68.
- Interest rate also has a negative correlation with GDP, as evident in the model output. As interest rates decline, spending increases, thereby leading to higher GDP.
- The Rsquare value has improved from our previous multiple linear regression model (=72.07%) due to the inclusion of addition variables that explain the variation in GDP across countries.
- However, based on p-values and the 95% confidence levels obtained from the results for Model 3, it appears that Net Exports (X), Unemployment Rate (UR) and Interest Rate (IR) are the only variables not statistically significant at 5% level. Net Exports, however, is significant at the 10% level since its p-value (=0.084) is lower than the significance level (=0.10).

We will now proceed to check for joint significance of these 2 variables – Unemployment Rate (UR) and Interest Rate (IR). To do that, we eliminate these 2 variables to formulate the restricted model as follows:

MODEL 4: $gdp = \beta_0 + \beta_1(f2) + \beta_2(f8) + \beta_3(X) + \beta_4(S) + u$

<i>Predictors</i>	<i>Coef.</i>	<i>Std. Err.</i>	<i>t</i>	<i>P> t </i>	<i>[95% Conf. Interval]</i>	
f2	492.84	59.29	8.31	0.000	374.85	610.82
f8	352.36	157.40	2.24	0.028	39.13	665.60
Net Exports (X)	5.34e-08	2.99e-08	1.79	0.078	-6.04e-09	1.13e-07
Gross Savings(S)	413.59	106.06	3.90	0.000	202.53	624.65
_cons	-400762.19	11708.82	-3.48	0.001	-64063.48	-17460.90

No. of observations	84	F(4, 79) statistic	51.04
R-square	0.7185	Prob > F	0.0000
Adjusted R-square	0.7044	Squared Sum of Residuals	7.5271e+09

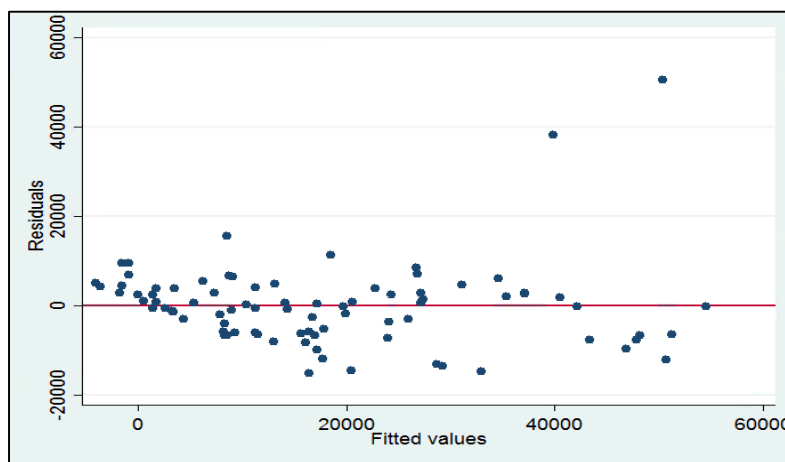


Figure 8 – Residuals vs Fitted Values for Model 4

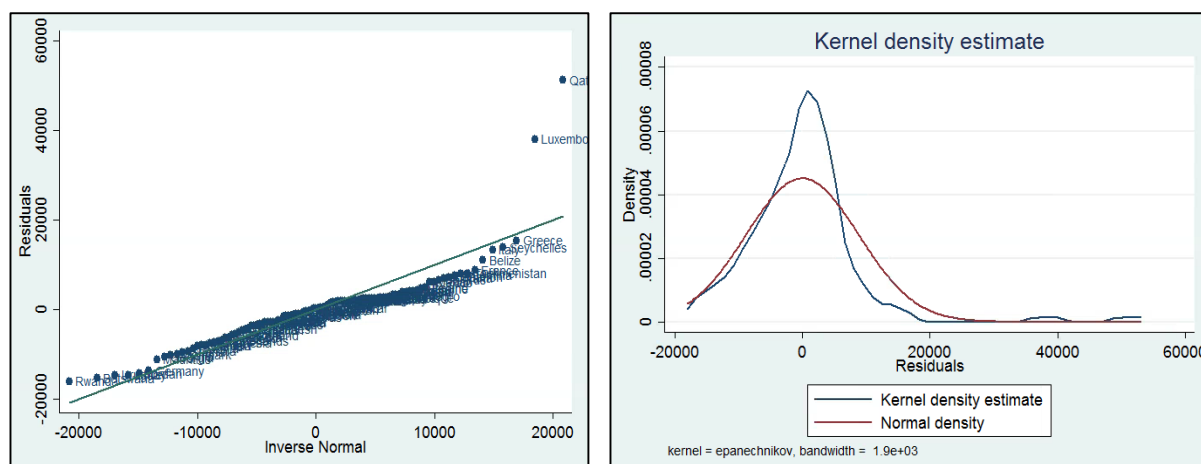


Figure 9 – Quantile-quantile and Kernel Density plot of residuals from Model 3

- On the residuals vs fitted values plot above, most of the residuals lie around the line $y=0$. Hence, we can conclude conditional mean of residuals to be 0 – Gauss-Markov Assumption 4 is satisfied.
- The variance of residuals also appears to be constant; there is no evident pattern. Hence, Assumption 5 (homoscedasticity) is also satisfied.
- Having satisfied all Gauss-Markov assumptions, we now proceed to check for the CLM Assumption 6 – normality of the residuals. The graphs above (fig 9) show that assumption 6 is

also satisfied. Since all the residuals lie close to the straight line in the Normal Quantile-Quantile plot, we can conclude that the residuals follow a Normal distribution. This is also verified by the Kernel density plot also verifies this where the residuals clearly follow a bell-shaped curve pattern, like the normal distribution. Hence, the residuals are normal distributed with zero mean and constant distribution.

Robustness Test:

Our null hypothesis is $H_0: \beta_5 = 0, \beta_6 = 0$ and

the alternate hypothesis is $H_1: \text{Any one of these 2 coefficient estimates} \neq 0$

$$F\text{-stat} = \frac{(R^2_{ur} - R^2_r) / q}{(1 - R^2_{ur}) / df_{ur}} = \frac{(0.7202 - 0.71850) / 2}{(1 - 0.7202) / 77} = \frac{0.00085}{0.0036337} = 0.234$$

Critical value = $F(2, 77) = 3.10$ at 5% significance level

Since $F\text{-stat} < \text{critical value}$, we fail to reject the null hypothesis. Hence, we can conclude that Unemployment Rate (UR) and Interest rate (IR) are jointly statistically insignificant at 5% level.

Another interesting observation that the restricted model shows us is that we can spot 2 outliers on the quantile-quantile plot – fig9 (and also on the residual vs fitted values plot – fig 8), which are identified as the data points for Qatar and Luxembourg. This is not surprising because Qatar and Luxembourg have the world’s highest GDP per capita respectively – Qatar has an abnormally high GDP despite modest economic freedom ratings since the country is endowed with vast oil reserves. Luxembourg on the other hand is an extremely small country (relatively less population) with a fertile economy largely dependent on financial and industrial sectors, resulting in high GDP per capita. These 2 countries can therefore be reasonably considered outliers that do not entirely follow our model.

V. Conclusion

Thus, the results of our analysis in this project paper show that economic freedom does impact levels of per capita GDP - all linear regression models are summarized in the table below (Table 5). However, the interpretation of these results is more complicated. Because some indices of economic freedom have negative effects on per capita GDP or are statistically insignificant, it is important to note that simply generally increasing a country’s overall level of economic freedom will not necessarily spur economic growth or increase fiscal performance. Rather, each independent economic freedom variable’s impact on per capita GDP differs in magnitude, importance, and direction. Out of all 10 economic freedom indicators, we found that Freedom from Corruption and Trade Freedom were the most significant economic freedom indicators, followed by Investment Freedom and Fiscal Freedom. This makes sense

because greater trade freedom would likely increase the potential for higher net exports and higher levels of investment freedom would likely increase the overall level of investment, both leading to higher GDP of the nation. Similarly, freedom from corruption also has a positive effect on a country's GDP since corruption lowers private investment, thereby lowering economic growth - countries with lower levels of corruption tend to have increased stability and create an environment where high levels of fiscal performance are sustained. Thus, our project paper findings reinforce Adam Smith's hypothesis that economic freedom has a strong positive effect over the economic prosperity of a country.

Table 5 – Summary of Linear Regression Models 1-4 discussed earlier

Independent Variables		Model (1)	Model (2)	Model (3)	Model (4)
ef	Economic Freedom Index	1000.17 *** (11.11)			
f1	Property Rights		82.09 (0.85)		
f2	Freedom from Corruption		534.74 *** (5.46)	466.77 *** (7.03)	492.84 *** (8.31)
f3	Fiscal Freedom		124.40 * (1.72)		
f4	Gov't Spending		-27.86 (-0.73)		
f5	Business Freedom		37.50 (0.58)		
f6	Labor Freedom		-81.06 (-1.59)		
f7	Monetary Freedom		-26.49 (-0.27)		
f8	Trade Freedom		177.15 ** (2.08)	367.31 ** (2.27)	352.36 ** (2.24)
f9	Investment Freedom		-99.89 * (-1.67)		
f10	Financial Freedom		41.51 (0.55)		
X	Net Exports			5.30e-08 * (1.75)	5.34e-08 * (1.79)
S	Gross Savings			395.64 *** (3.59)	413.59 *** (3.90)
UR	Unemployment Rate			-126.68 (-0.65)	
IR	Interest Rate			-197.57 (-0.77)	

		Model (1)	Model (2)	Model (3)	Model (4)
	Intercept	-45283.89 *** (8.26)	-23986.01 *** (-2.59)	-38138.17 ** (-3.08)	-400762.19 *** (-3.48)
	No. of observations	169	168	84	84
	R-square	0.4248	0.6736	0.7207	0.7185

Note: t-statistics are given in parentheses; *Significant at 10%, **Significant at 5%, ***Significant at 1%

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