Age of Milton Freidman: Do Free Markets Make Countries Wealthier?

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Abstract

The past few decades have sparked much debate between two competing schools of economic thought. Keynesians or demand-side economists generally oppose the views of supply-side economists. Milton Friedman and other supply-side economists argue that the best way to foster economic growth is through lowering taxes, decreasing regulation, and allowing free trade. Using data from the World Bank, we performed our own analysis to obtain a robust model that predicts GDPPC and compared "free market" factors with more holistic alternatives.

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Demand-side economists argue that aggregate demand has a large influence on economic growth. Periods of recession are marked by decreased spending power while periods of inflation are marked by increased demand. They also argue that governments should coordinate with central banks to stabilize between periods of recession and inflation. For example, during periods of recession where demand is low, the government becomes the spender of last resort. A government is justified in spending money even if it must go into debt to stimulate the economy.

Supply-side economists such as Milton Freidman stand in direct opposition to this theory. They believe that lowering taxes, decreasing regulation, and allowing free trade are the best ways to foster economic growth. Additionally, Friedman and others claim that central banks themselves are responsible for creating inflation and recessions. (1992) They also argue against regulatory agencies, progressive income taxes, and minimum wage laws. (Friedman, 1992)

Report

Most research generally supports the argument for widespread poverty reduction and wealth generation globally, between 1980 and the early 2000s. Following this were improvements in educational attainment, life expectancy, and levels of democracy. (Shleifer, 2008) While market liberalization in former Soviet Bloc countries and East Asian countries has led to unprecedented growth, this model alone does not describe the whole picture. We sought to analyze data to develop a more holistic model. We used data from the World Bank which contained data from 195 countries up to 2019. It contained over 1000 variables including traditional metrics like GDP as well as more holistic variables such as access to clean cooking methods. For a more robust analysis, we chose only 2015 data, as it had the least missing data

and was recent. The data contained both individual rows for each country as well as rows that represented aggregate data by region. We used both sets to perform different analyses.

We wanted to find out whether "free market" indicators like regulatory environment, time to start a business, corporate tax rates, and import duties are indeed good predictors of GDP. Additionally, we wanted to see if a more accurate and robust model could be created using other factors that measure general population health, access to technology, and the health of and access to financial infrastructure.

Variables Used.

From the thousands of variables included in the World Bank dataset, we focused on the few we thought would be most relevant. Pertaining to "free markets" we used the CPIA business regulatory environment rating, the time required to start a business, effective corporate tax rate, and the cost of border compliance to import goods. The CPIA rating ranks a country from 1 to 6 based on its business regulations. A low rating indicates high business friendliness, whereas a high rating indicates the opposite. For our alternative model, we used government health expenditure per capita, the number of broadband subscriptions per capita, and the percent of people with a bank account. In our alternative model, we also used broad money (the amount of currency actually circulating in an economy) as a percent of GDP to control for countries with inflated or deflated currencies that may skew results. For our regional analysis, we used the World Bank's economic regions. The World Bank groups countries into Sub-Saharan Africa, East Asia & Pacific, Europe & Central Asia, Latin America & The Caribbean, Middle East & North Africa, and South Asia.

Multivariate Models.

In our analysis, we created two multivariate models which both predict GDP Per Capita. The first model predicts GDPPC based on the regulatory environment, the time required to start a business, corporate tax rate, and import costs. These factors are represented as $X_1, \ X_2, X_3, \ and \ X_4$ respectively.

$$\hat{Y} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon_{i,j}$$

Using the World Bank data, we created another multivariate model using government health expenditure per capita, broadband subscriptions per 100 people, bank account ownership, and broad money (percent of currency that is circulating in the economy). The model is as follows:

$$\hat{Y} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon_{i,j}$$

For both models, we assume that there exists a linear relationship between the factors and the respective response variable and that errors are normally distributed with equal variance.

Categorical Methods.

To better gauge the effect of free-market policies in aggregate, we compared average GDPCC the six different World Bank regions which include Africa, East Asia, and Pacific, Europe and Central Asia, Latin America and the Caribbean, Middle East and North Africa, and South Asia. We also compared the World Bank's Regulatory Environment ratings by region.

Conclusion

We found that the "freeness of markets" is overall a poor predictor of GDPPC. In our model, we used regulatory environment rating, the time required to start a business, the tax rate on corporate profits, and import costs as predictors. Overall, our model resulted in a very poor

fit, with an R-squared of only 0.08. Moreover, none of our model parameters were statistically significant at a 5% significance level except for the regulatory environment. A graph of our predicted response, vs actual response, can be seen in Fig. 1. Of note is that among countries with a low predicted GDPPC, there was a significantly higher variance in observed GDPPC. This indicates that even in countries with restricted markets, and unfriendly regulatory environments, GDPPC can vary significantly. We checked each factor individually, by doing multiple univariate regression analyses with GDPPC. The results of these analyses are given in Table 1.

We hypothesized that other more tangible and substantive factors may have a greater impact on a country's economic health. For our model, we used Government health expenditure per capita, fixed broadband subscriptions per capita, bank account ownership, and broad money (the amount of currency actually circulating in the economy) as a percentage of GDP. These factors serve to assess the robustness of a nation's infrastructure and the propensity to invest in human capital. Broad money is generally regarded as the best way to measure a country's true money supply. In this respect, this variable serves as a control variable for countries with inflated or deflated money supplies. Of importance is that these factors don't necessarily have anything to do with free markets and can be improved through the private sector, or government policy. Using this model, we achieved an R-squared of 0.875 and had statistically significant parameters for bank account ownership, broadband subscription, and government health expenditure factors. A scatter plot of predicted GDPPC vs observed GDPPC can be seen in Fig 2. For both of our models, variance increased along with increased predicted GDPPC. For our alternative model, the Q-Q Plot shows that the residuals do deviate from a normal distribution. The Q-Q plot is included in Fig 3.

To further demonstrate the lack of relation between free markets and GDPPC we analyzed the average GDPPC as well as the average regulatory rating by World Bank regions. These can be seen in Fig 3. and Fig 4. respectively. We found that Europe and Central Asia had both the least favorable regulatory environments and the highest average GDPPC. Additionally, the Middle East and North Africa had the most favorable regulatory environment while having the third-lowest average GDPPC. This is particularly relevant as we would expect higher GDPPC in this region as a result of petroleum and natural resources regardless of the regulatory environment.

A most conservative takeaway would be that free markets themselves do not guarantee economic growth and productivity. Further, factors that measure the extent of government welfare, and quality of infrastructure are particularly good at predicting the economic output. Practically speaking, populations are most economically productive when they have access to the internet and technology, have quality healthcare, and have access to good financial infrastructure. This appears to hold true in the data as well.

References

Friedman, M. (1992, April 24). *A Conversation with Milton Friedman.*

Shleifer, A. (2009). The Age of Milton Friedman. *Journal of Economic Literature, 47*(1), 123–135. 10.1257/jel.47.1.123

World Bank. (2021). *World Bank Open Data.* https://datacatalog.worldbank.org

Tables

Factor	R²	Direction (Neg. or Pos. correlation)
Time required to start a business	.038	Negative
Inflation	.019	Negative
CPIA business regulatory environment rating	.076	Positive
Profit tax (% of commercial profits)	.014	Negative
Cost to import, border compliance (US$)"	.095	Negative

Table 1. This table shows various factors, and their R-squared value when used to predict

GDPPC. Additionally, it shows the direction of the relationship, whether negative or positive.

Figures
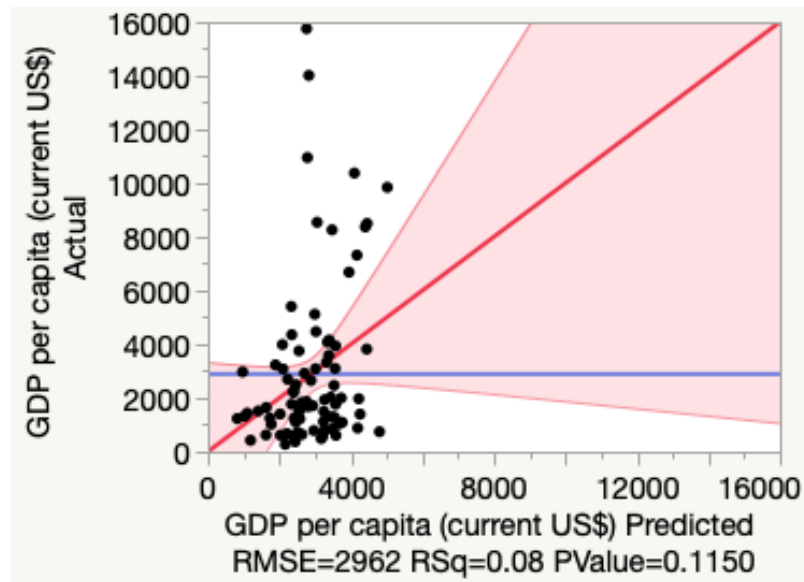
Figure 1. This model attempts to predict GDPPC by using the regulatory environment, corporate

tax rate, import costs, and the time required to start a business as predictors. The plot above

shows the predicted vs observed values of GDPPC. Overall it exhibits a poor fit and offers little
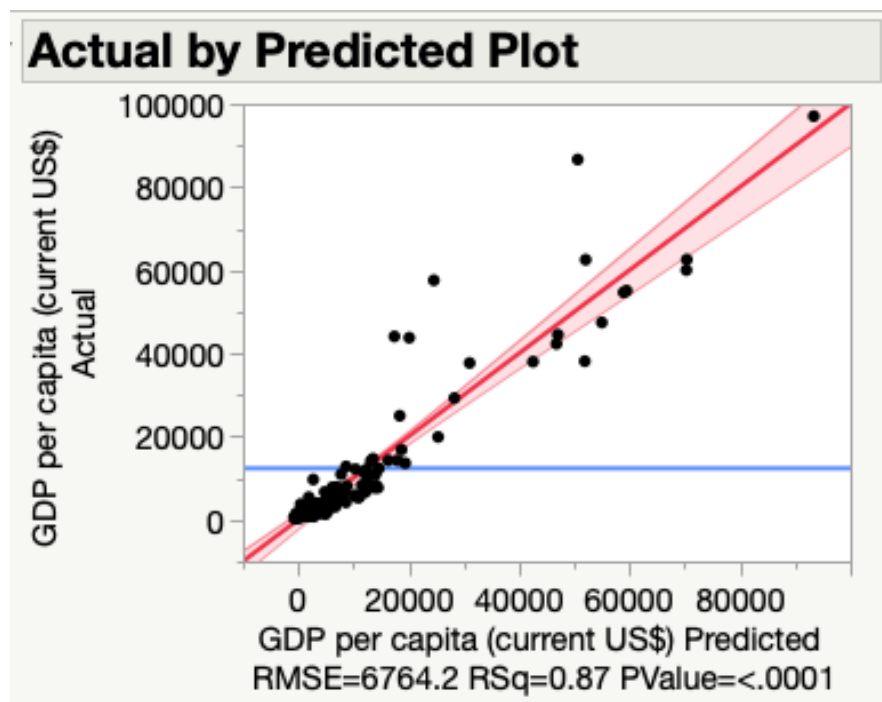
explanatory value.

Figure 2. [Include all figures in their own section, following references (and footnotes and tables, if applicable). Include a numbered caption for each figure. Use the Table/Figure style for easy spacing between figure and caption.]

For more information about all elements of APA formatting, please consult the *APA Style Manual, 6th Edition*.
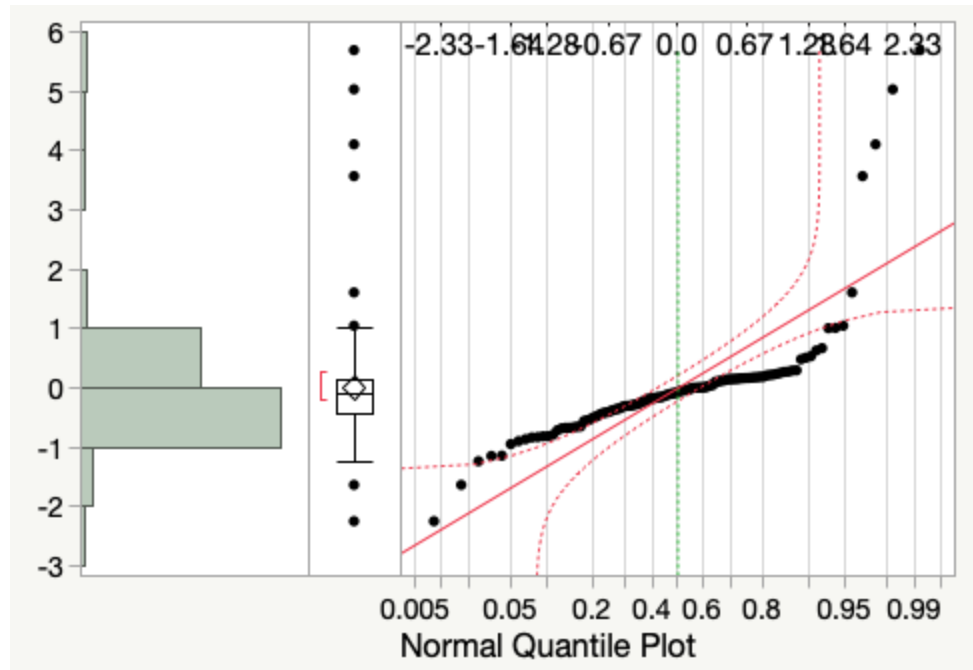

Figure 3. This displays a Q-Q Plot of residuals, from our alternative model. This model predicts GDPPC from broadband access, healthcare expenditure, broad money, and bank account ownership.
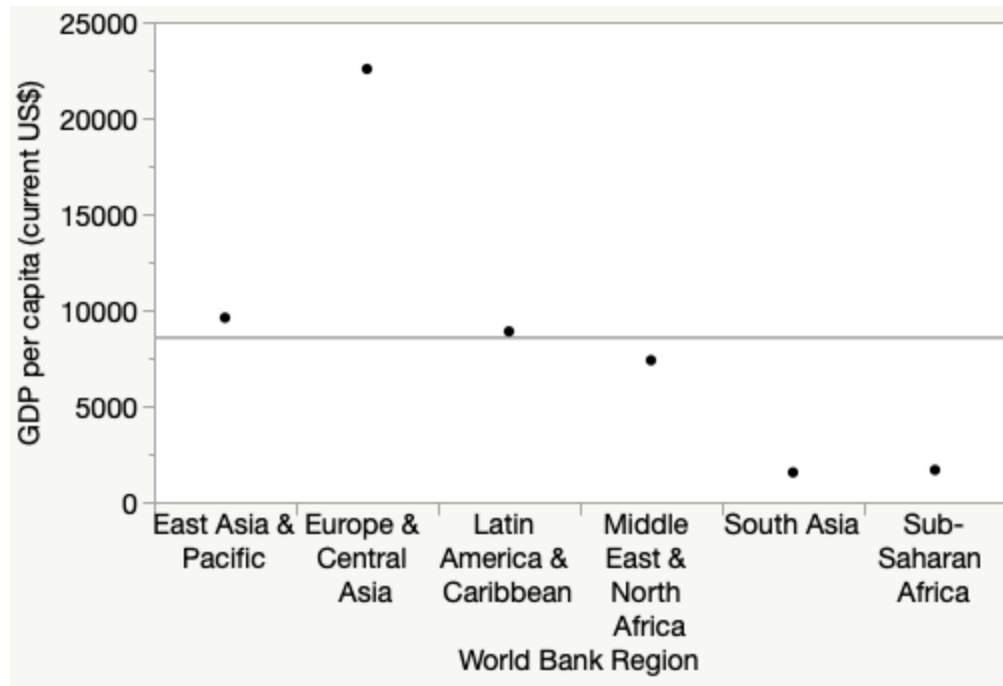
Figure 3. This chart plots the average GDPPC by the World Bank region. Note that Europe & Central Asia, along with South Asia and Sub-Saharan Africa deviate most significantly from the mean.
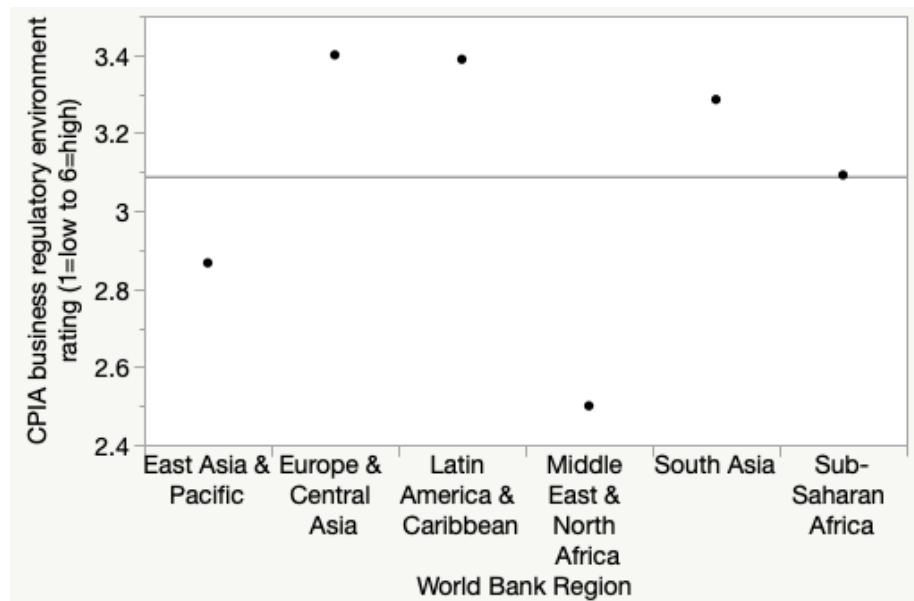
Figure 4. This chart plots the average regulatory environment score by the World Bank region. Low scores indicate regulations favorable to business while high scores indicate the opposite. Note that the Middle East & North Africa have the most business-friendly regulatory environments.