Does economic freedom promote standard of living across countries with different income levels?

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Abstract:

This paper investigates the possibility of a relationship between economic freedom and standard of living across countries with different income classifications. The study incorporates population with access to improved water supply sources, sanitation facilities, electricity and the internet, as well as foreign aid into the Kosack model of aid effectiveness. This is done in order to examine their effects on HDI.

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1.0 INTRODUCTION

World development and humanitarian organizations have a vested interest in improving the lives of ordinary people and promoting equality, liberty and freedom around the world. A look at programs such as the Millennium Development Goals, UNICEF's Child Protection & Inclusion Program, the World Food Program and the work of private organizations such as the Bill & Melinda Gates Foundation undeniably supports this world view.

While their goals are indeed noble, Nobel economist Milton Friedman (1980) argued that in the absence of freedom, the goal of equality and prosperity is a mere mockery. In looking at the variables and areas on which nations are ranked according to their economic freedom it was surprising to see how many low income countries (as classified by the World Bank) received low scores on the Economic Freedom of the World Index (EFWI). This surprise arises because these low income countries are some of the highest beneficiaries of foreign aid and humanitarian support. Could it be that their lower level of economic freedom correlates with standard of living as measured by the Human Development Index (HDI) and that without economic freedom no amount of aid or foreign assistance would serve them well?

The goal of this study is to find whether there is a direct significant relationship between economic freedom and standard of living and whether or not the global economic crisis had any effect on this relationship. Simultaneously, it also aims to also enhance the understanding on whether or not increasing economic freedom in a country leads to a higher living standards. The years 2005 and 2014 were selected arbitrarily in order to study the before and after effects of the global economic recession that began in late 2007 and ended in 2008.

The findings will contribute uniquely to the body of data available by providing future researchers with data about the relationship between economic freedom and the human development index. Current measures of the HDI do not account for rule of law, ease of starting a business, control of corruption, protection of property rights, trade barriers, labor market regulations and many of the other important variables used in the computation of a country's economic freedom score. Results from this study may help lawmakers in crafting policy about issues concerning the aforementioned variables and how they impact their various economies. It may perhaps also serve as reference to future researchers who might be looking at a similar topic.

Guided by two research objectives that differ from other studies, this paper first investigates the possibility of interdependence between economic freedom and human development, specifically between the EFWI and HDI which no study to the best of our knowledge has yet looked at. Second, it incorporates water supply improvements for rural residents, access to electricity, internet and sanitation improvements into the Kosack model to examine the influence of these variables on the standard of living across different income classification of countries.

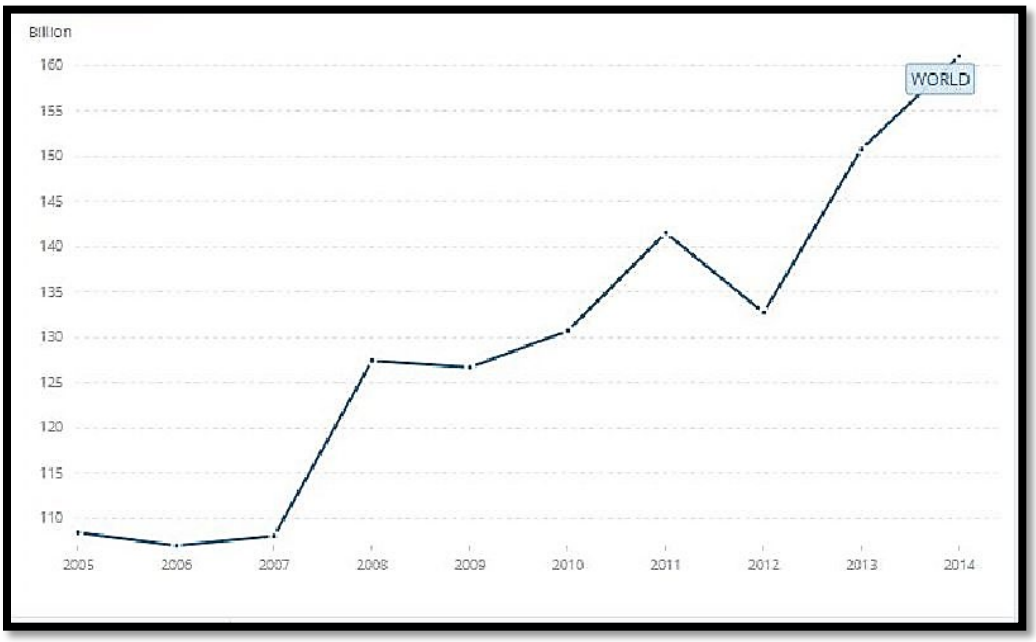
2.0 Trends

As shown in Figure 1, the net official development assistance and foreign aid received across different countries grew from $108 billion in 2005 to $161 billion in 2014. Figure 2 shows the percent changes in net official development assistance and official aid received between 2005 and 2014. Using figures from the World Bank, the data shows that aid to High Income countries saw a 24% drop while those to Low Income countries saw

an 80% increase. Improvements in water supply across four WHO classified regions likewise realized increases as shown in Figure 3 as well. The biggest gains went to Sub-Saharan African countries which saw a 13% increase.

Figure 4 indicates that improvements in sanitation across four WHO classified regions increased across the board. The biggest gains went to Southern Asian countries which collectively saw a 26% increase between 2005 and 2014. In addition, Figure 5 showed that High Income countries were much ahead of both middle and low income countries in terms of Gross National Income per Capita. Middle Income countries did in fact realize some gains in GNI per capita but that of Low Income countries stayed roughly flat throughout that period. Figure 6 shows a decline in corruption control across all countries except those classified as Lower-Middle Income between 2005 and 2014. Upper Middle Income countries saw the greatest percent decline in corruption control in 2014, indicating that corruption may be much more prevalent there. Finally, as Figure 7 shows, Low Income countries saw percent gains ahead of both Middle and High income countries in terms of access to electricity. Percent changes in High Income countries however basically stayed flat throughout the period.

Figure 1: Net official development assistance and official aid received (current US$)



Source: World Bank Open Database

Figure 2: Percent Changes in Net official development assistance and official aid received (current US$)

Country Classifications	2005	2014	% Change
Low income	$ 19,247,870,000	$ 34,647,990,000	80%
Lower middle income	$ 34,979,700,000	$ 51,092,300,000	46%
High income	$ 566,440,000	$ 431,440,000	-24%
Upper middle income	$ 32,335,970,000	$ 16,722,450,000	-48%

Source: Author

Figure 3: Improvements in Water Supply

		Water	
region WHO	**Year**	**National**	% change
Developed countries	2005 2014	98.7 99.2	1%
Latin America and the Caribbean	2005 2014	91.5 94.6	3%
Southern Asia	2005 2014	85.0 92.4	9%
Sub-Saharan Africa	2005 2014	58.9 66.6	13%

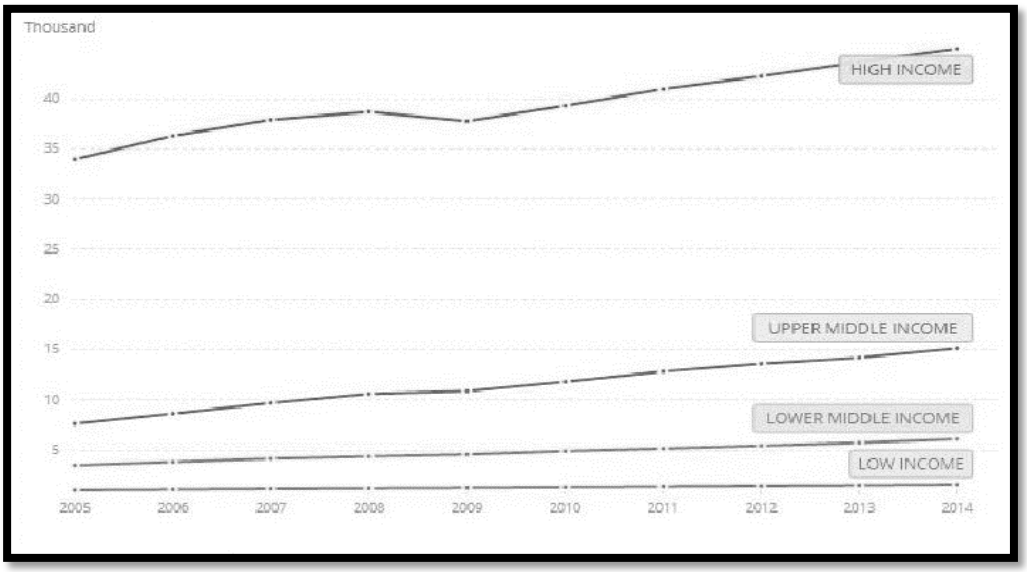
Source: World Health Organization/UNICEF JMP

Figure 4: Improvements in Sanitation

		Sanitation	
region WHO	**Year**	**National**	% change
Developed countries	2005 2014	95.0 95.6	1%
Latin America and the Caribbean	2005 2014	77.8 83.0	7%
Southern Asia	2005 2014	37.0 46.5	26%
Sub-Saharan Africa	2005 2014	26.9 29.3	9%

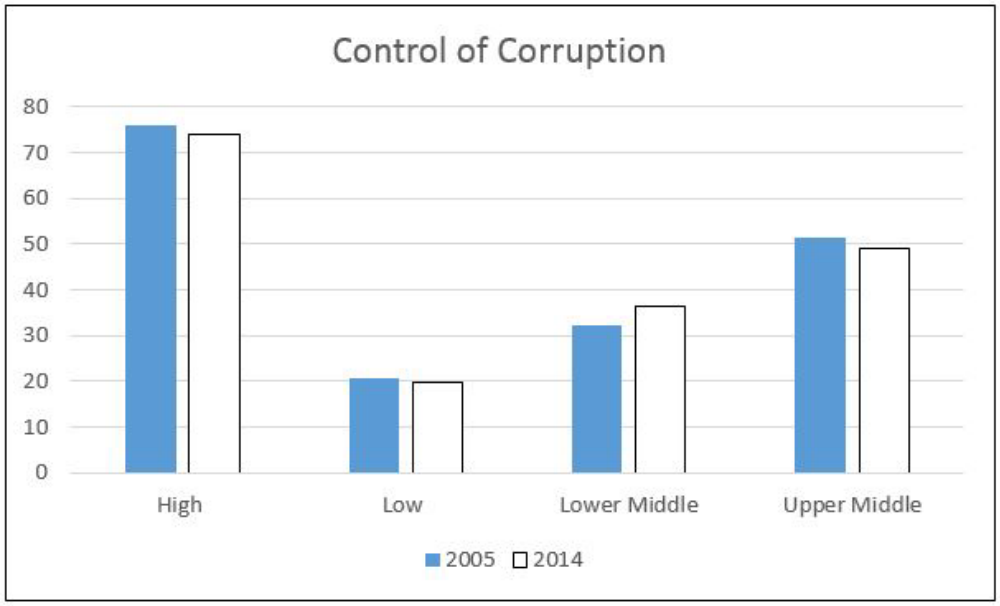
Source: World Health Organization/UNICEF

Figure 5: GNI per capita, PPP (current international $)



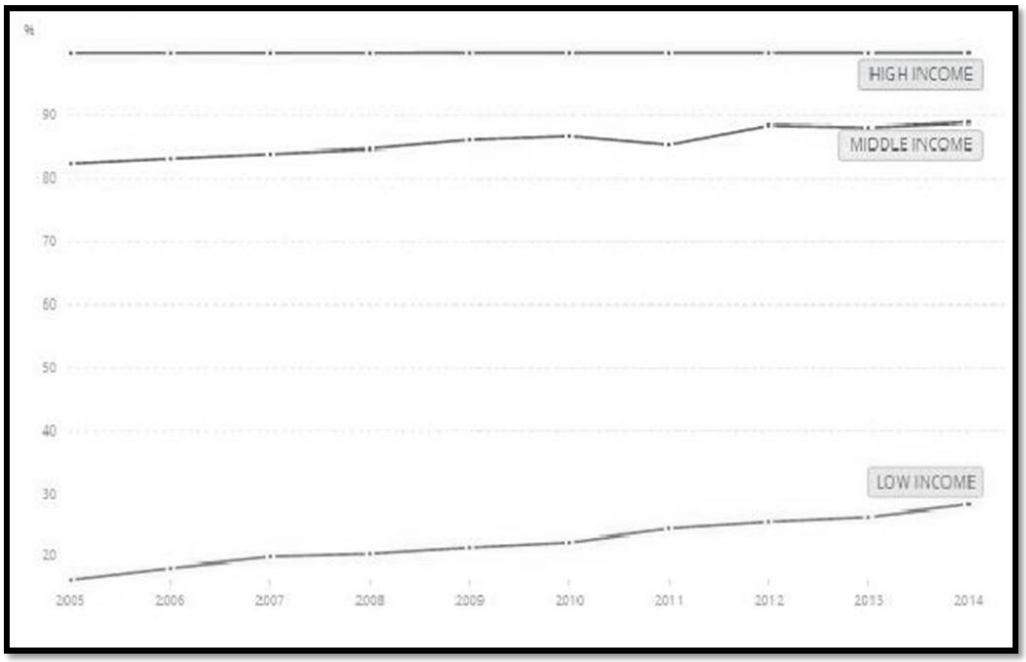
Source: World Bank Open Database

Figure 6: Control of Corruption



Source: World Bank World Governance Indicators Database

Figure 7: Access to electricity (% of population)



Source: World Bank Open Database

3.0 LITERATURE REVIEW

Economist Milton Friedman (1980) argued that the world runs on individuals pursuing their self-interests and that the great achievements of civilization did not come from government bureaus. He further stated that freer countries provided innumerous opportunities for prosperity for its inhabitants. The Economic Freedom of the World Index (EFWI) which ranks nations based on factors such as rule of law, freedom to trade internationally, burden of tax regulations, ease of starting a business and size of government lends further empirical evidence to the arguments that the freer nations turn

out more prosperous citizens (Gwartney et al., 2014). This has also been buttressed by over 402 academic publications and articles that cite the EFWI. Of this number, 198 used the index as an independent variable in an empirical study and over two-thirds of them found economic freedom to correspond to outcomes such as faster growth, better living standards and more happiness (Hall and Lawson, 2013).

In the area of years of foreign aid as well, we would expect increases in such aid to correspondingly improve standards of living. Results on this however is complicated. Moyo (2010) argues that foreign aid is the "silent killer of growth" across African economies. She argues that as aid - be it humanitarian disaster relief, systematic aid or charity inflows - increases, economic growth is seriously hampered due to the inefficiency and corruption plaguing the countries who receive it. Interestingly, Jeffrey Sachs (2006) takes an opposite view and argues that well targeted aid can achieve higher standards of living and lift millions in poor countries out of poverty. Bentzen (2012) argues however that corruption does have a causal relationship with a country's GDP and that as corruption goes up, economic growth falters.

The effects of water and sanitation improvements and access to electricity on living standards have also been well documented. Reddy et al. (2000) for instance argue that the energy aspects of poverty are radically different for industrialized and developing countries. They assert that a direct improvement in energy services, primarily in electricity access would allow the poor to enjoy both short-term and long-term advances in living standards. Montgomery and Elimelech (2007) also argue that in the U.S. and Central Europe where water and sanitation services are nearly universal, water, sanitation, and hygiene-related diseases have been significantly reduced since the start of

the 20th century. In developing countries however, they found that water and sanitation services are still severely lacking and a result millions suffer from preventable illnesses and die every year. They demonstrate that number of deaths per 1000 children younger than 1 year of age that are attributable to diarrheal diseases and that nearly 60% of infant mortality is linked to infectious diseases, most of them water, sanitation, and hygiene-related.

4.0 DATA AND EMPIRICAL METHODOLOGY

4.1 Data

The study uses cross sectional annual data of 2005 and 2014. Data were obtained from the World Bank, United Nations Children's Fund (UNICEF), United Nations Development Fund (UNDP), Word Health Organization (WHO), and Frasier Institute websites. The selection of the 113 countries and the 2005 and 2014 periods is as a result of lack of data for many countries we had hoped to study. Summary statistics for the data of both years are provided in Table 1 and Table 2.

Table 1 Summary Statistics (2005)

Variables	Mean	Standard Deviation	Minimum	Maximum	Obs
HDI	0.67	0.17	0.29	0.931	113
EFWI	6.75	0.98	2.93	8.86	113
Pop. with Improved Sanitation Facilities	70.95	30.46	7.90	100	113
Pop. with electricity access	76.97	33.47	4.62	100	113
Rural Pop. with Improved Water source	79.50	20.59	27.80	100	113
Control of Corruption	0.06	1.05	-1.60	2.3	113
Net ODA	29.75	50.87	-7.66	406.941	113
% of Pop. Internet users	22.44	25.12	0.07	87	113

Table 2 Summary Statistics (2014)

Variables	Mean	Standard Deviation	Minimum	Maximum	Obs
HDI	0.71	0.16	0.35	0.94	113
EFWI	6.84	0.88	3.29	8.71	113
Pop. with Improved Sanitation Facilities	74.26	29.42	10.80	100.00	113
Pop. with electricity access	81.49	30.73	7.00	100.00	113
Rural Pop. with Improved Water source	84.40	18.69	30.90	100.00	113
Control of Corruption	0.03	1.03	-1.40	2.30	113
Net ODA	35.36	51.80	-49.97	363.69	113
% of Pop. Internet users	46.88	29.49	1.38	98.16	113

4.2 Empirical Model

This study adapted and modified the Kosack (2003) model. The original model captures the effect of budget surplus, inflation, international trade, institutional quality and efficiency and terms of trade. It also uses dummy variables for Africa and East Asia to capture the influence of geography and natural endowments on quality of life and aid usage for which HDI is used as a proxy for.

We have added economic freedom of the world index score, percent of the population with access improved sanitation facilities, percent of population with access to electricity, percent of rural population with access to improved water source, net official development assistance and percent of individuals in population using the internet.

The new model is as follows:

$$HDI_{it} = \alpha + \beta_1 (EFWI_{it}) + \beta_2 (Sanitation_{it}) + \beta_3 (Electricity_{it}) + \beta_4 (Water\ Source_{it}) + \beta_5 (Low\ Income_{it}) + \beta_6 (Net\ ODA_{it}) + \beta_7 (Internet_{it}) + \varepsilon$$

HDI_{it} is the dependent variable. It is the score of country i at year t. The Human Development Index (HDI) is a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and have a decent standard of living. The HDI is the geometric mean of normalized indices for each of the three dimensions. The health dimension is assessed by life expectancy at birth, the education dimension is measured by mean of years of schooling for adults aged 25 years and more, and expected years of schooling for children of school entering age. The standard of living dimension is measured by gross national income per capita.

Independent variables consist of seven variables obtained from various sources. Appendix A provides data source, acronyms, descriptions, expected signs and justifications for using the variables. First, $EFWI_{it}$ (EFWI score of country i t

at year t . Fourth, $Water\ Source_{it}$ is a measure of improved water source for country i's rural inhabitants at year t. Fifth, $LowIncome_{it}$ represents low income countries. Sixth, $Net\ ODA_{it}$ *measures* the amount of foreign aid inflows to country i at year t. Finally $Internet_{it}$ is the percent of the population with access to the internet in country i at year t .

5.0 EMPIRICAL RESULTS

Table 2: Regression results

	HDI	
	2005	**2014**
EFWI	0.024779*** (0.0006)	0.013184** (0.0059)
Internet Users	0.0021*** (0.000259)	0.002656*** (0.000288)
Low Income Dummy	-0.042861** (0.019074)	-0.051232*** (0.018104)
NET ODA	0.0046 (0.000099)	-0.000231*** (0.0139)
Pop Electricity Access	0.001407*** (0.000323)	0.000693** (0.000335)
Pop Improved Sanitation	0.001939*** (0.000362)	0.001272*** (0.000369)
Rural Pop Imp Water	-0.000159 (0.000472)	-0.000108 (0.000454)
R^2	0.94	0.93
Number of obs.	113	113

Note: *** , **, and * denotes significance at the 1%, 5%, and 10% respectively.

The empirical results of the OLS regression presented in Table 2 indicates that before the global economic crisis, economic freedom, percent of the population using the

internet, percent of the population with access to improved sanitation facilities, percent of the population with access to electricity and low income countries had statistically significant relationships with the HDI. It shows that as economic freedom went up the standard of living went up as well. This relationship is consistent with the finding of Gwartney et al. (2014) and the arguments by Friedman (1980). This positive relationship was also true for percent of the population using the internet, percent of the population with access to improved sanitation facilities and percent of the population with access to electricity. It means as the percent of people with access to these amenities went up in any country, HDI correspondingly went up. These confirm the findings of Reddy et al. (2000) and Montgomery and Elimelech (2007).

However, Low Income countries and Percent of rural population with access to improved water sources saw a negative relationship with HDI though that of the latter was not statistically significant. The negative sign of the Low Income Dummy coefficient seems to confirm the reality that low income countries have lower standards of living. Net Official Development Assistance had a positive relationship with HDI. That is, as foreign aid and humanitarian efforts increased to a country its standard of living rose. This was a contradiction to the findings of Moyo (2010) but it was not statistically significant.

In 2014 after the global financial crisis, the results were strikingly similar. All the variables except Percent of rural population with access to improved water, Net ODA and Low Income sources saw a statistically significant - positively correlated relationship with HDI. Again, it confirms the arguments of Gwartney et al. (2014), Friedman (1980),

and the reality that the poorer a country is, the lower its standard of living. It likewise confirms the findings of Reddy et al. (2000) and Montgomery and Elimelech (2007) about electricity access and improved sanitation facilities.

Here too, there was a negative relationship Percent of rural population with access to improved water sources with HDI but it was not significant. What was interesting however was that NET ODA had a negative relationship with HDI. This indicates that as humanitarian support and foreign aid increased, standard of living decreased. This confirms the findings of Moyo (2010) who argued that foreign aid kills growth and economic development.

Limitation

The key limitation encountered as mentioned earlier is the overall lack of data for low income countries. Data was lacking for a lot of African, Asian, Latin and South American countries which we hoped to have used.

5.0 Conclusion

In summary, as a country's economic freedom rises, indeed we see that its standard of living goes up as well regardless of its income classification. The argument that foreign aid to poor countries does more harm than good by leading to dependency and stalling growth is also validated here. We find evidence that as after the global economic recession as foreign aid increases standard of living decreases.

The policy implications of the findings are straight forward; governments and policy makers should approach policy making with the promotion of economic freedom as their main goal. This means keeping the size of government at a minimum, strict control of corruption, reduction of regulations, instituting sound money policies and promoting free liberal trade. In addition, governments should focus more on improving the sanitation, water supply, and electricity access to its citizens. It should also invest heavily into technology - specifically into internet access for its citizens since this would raise their standards of living as well.

Appendix A: Variable Description and Data Source

Acronym	Description	Data source
HDI	Human Development Index Score	UNDP
EFWI	Economic Freedom of the World Index Score	Fraser Institute
Internet Users	% of population using the internet	World Bank
Low Income Dummy	Dummy variable for low income countries	
NET ODA	Net Official development assistance and official aid ($)	World Bank Database DAC of OECD
Pop Electricity Access	% of population with access to electricity	World Bank SE4ALL Database
Pop Improved Sanitation	% of population with access to improved sanitation facilities	World Health Organization/UNICEF (JMP)
Rural Pop Imp Water	% of rural population with access to improved water source	World Health Organization/UNICEF (JMP)

Appendix B- Variables and Expected Signs

Acronym	Variable Description	What it captures	Expected sign
EFWI	Economic Freedom of the World Index	How free a country is with regards to regulations, tax policy, size of government, rule of law and trade policies	+
Internet Users	People using the internet		+
Low Income Dummy		Relationship between the Low income classification and standard of living. Low income countries get "1" and all other countries get "0"	-
NET ODA	foreign aid received by any given country	Foreign aid in U.S. dollar denomination	-
Pop Electricity Access	Population who have access to electricity	Number of people in a country who have electricity	+
Pop Improved Sanitation	Population with access to improved sanitation	Number of people who have a toilet	–
Rural Pop Imp Water	Rural Population with Access to improved water source	Number of people living in rural areas who have access to a water supply (tap water, treated water) other than from the rivers or rain.	+

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