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Does an increase in income, democracy and political stability also cause a decrease of political corruption in developing countries?

Abstract

Political corruption is an endemic problem in all developing countries. Corruption stymies economic growth and the livelihoods of peoples by depriving them of access to services such as healthcare and education; wasting tax income; reducing incentives for the public sector to act in the public interest; or by artificially creating barriers to economic well being[1]. These factors, thus, stymy the people's capacity to ensure for themselves a better standard of living for their children and themselves. But what can serve to reduce the effects of corruption and why? This investigation studies three factors: Income, Democracy and Political Stability; and tests whether or not they can act as a meaningful variable in reducing corruption in developing nations. In other words: Does an increase in income, democracy and political stability reduce corruption in developing countries? The result is that while the model supports the hypothesis, the situation is more complex. Income and democracy can have a greater impact per unit of change in income/democracy in reducing corruption compared to political stability, an increase in democracy is the most effective overall in reducing corruption as the correlation between a change in income and a change in corruption is not statistically significant.

Theories of corruption, democracy, income and political stability

Increasing income should lead to a reduction in corruption in developing nations due to a number of factors. For one, an increase in come could lead to a situation whereby the populace would have reached a standard of living where they are no longer constrained into thinking of physiological and survival needs (such as shelter, employment and hunger) but can focus more on self-actualisation, morality and themes of society in line with Maslow's Hierarchy of Needs[2]. Highlighting how, through an increase in income, the populace of a developing nation would no

longer tolerate corrupt activities and corrupt politicians as their needs have shifted from thinking in terms of material needs such as jobs, food or shelter, but instead on more philosophical topics on public good, morality and civic duty. This is also helped by the fact that a greater standard of living would also reduce the tunnel vision effect of the populace being solely fixated on solving their physiological needs whilst ignoring everything else as inconsequential and instead rebalancing their attention on the other less materialistic thoughts.

Increasing democracy should also lead to a decrease in corruption as democracy provides an outlet for concerned and frustrated citizens to voice their concerns as well as a means for replacing corrupt and nepotistic politicians[3]. Democracy also serves as a deterrent for corrupt activities as it means that the actor partaking in corruption can face serious punishment if he is discovered to have been doing so in the first place. The punishment need not be merely legal, but political (removal from office) and moral (a reduction in gravitas and social standing) as well. Likewise in non-democratic societies, the populace would have little to no means of replacing their leaders if they engage in corruption as either the ruling elite will use force and repression to crush dissent or use corruption to ensure the loyalty of their subjects[4]. Without any punishment or mechanism to depose corrupt leaders, it perpetuates corruption as there is nothing preventing the corrupt from engaging in corruption and others from turning corrupt themselves.

An increase in political stability can also help to reduce corruption. As states become more violent and chaotic, politicians and bureaucrats will have more opportunities to engage in kleptocratic practices owing to the decay of political institutions due to infighting and sectarianism as well as favouritism of certain groups over others in nations with histories of ethnic tension, violence and inequality[5]. Less politically stable states also ensure that civil servants and politicians will routinely engage in corrupt practices as declining standard of living

due to civil war and internal conflict will force public servants to find alternative sources of income to ensure their standard of living. This is often in rent seeking activities like illegal rents, demanding bribes and embezzlement of funds[6].

It is not too surprising then, that all of the three variables above have some interaction with one another. An increase in income should also lead to an increase in democracy as the population will start to demand better rights and living standards from their rulers. This is even more evident in authoritarian states. An increase in democracy should also lead to an increase in political stability as more democratic nations provide alternative routes for the citizens of a country to protest their predicament without resorting to violent means to do so either through elections or plebiscite. An increase in political stability should lead to an increase in income as it reduces the chances for state collapse and civil wars destroying infrastructure, gross domestic product and human capital.

Methodology

The values for income, democracy, political stability and corruption are drawn from the World Bank[7], Economist Intelligence Unit[8], the Global Economy[9] and Transparency International[10]. The reason I chose these indicators is that they are created by impartial, third party non-governmental organizations or institutions without any bias for specific nations or actors. In addition, these indicators are widely used by renown and legitimate groups, such as the United Nations, in their statistical work.

A list of developing countries is drawn up. For this investigation, a developing country must be defined by the United Nations as being neither developed or as being a member of the developing and least developed country category[11]. A list of all the countries that fit the category

is drawn up and is alphabetically ordered. Afterwards, a systematic random sampling occurs after a random starting point is drawn up from the shuffled list. A country is selected every 4th position in the list. The list of countries that this investigation will use are: Afghanistan, Argentina, Belarus, Bosnia, Bulgaria, Cameroon, Chile, Congo (Democratic Republic), Cuba, Ecuador, Ethiopia, Georgia, Guinea, Honduras, Iraq, Kenya, Kyrgyz Republic, Lesotho, Macedonia FYR, Mauritius, Moldova, Mozambique, Nicaragua, Peru, Rwanda, Serbia, Swaziland, Thailand, Tunisia, Uganda, Yemen. The nations of: Maldives, Palau, Somalia, St Lucia and Vanuatu were selected but omitted from the final tally of nations owing to incomplete data on their GDP-per-capita income, democracy index, political stability and corruption perceptions index.

Afterwards, the years 2008 and 2018 are selected as the beginning and end year respectively and each nation's GDP-per-capita, democracy, political stability and corruption perceptions index is tabulated for each year and for each nation. Afterwards, the values for 2018 are minused from the 2008 value and divided by the 2008 value then multiplied by a hundred to get the final percentage change in all of the four categories above. The reason I chose to do this method to calculate change in corruption and change in income, democracy and political stability as each of the variables above do not have the same numeric values to calculate income, democracy, political stability and corruption. Income is calculated from GDP values divided by total population while corruption, democracy and political stability were ordinal values on a 0-100 scale (as in the case of corruption and political stability) or 0-10 (as in the case of democracy). Measuring a difference through a change in percentage for all the values above allowed for easier comparative analysis between the variables. Note: a positive percentage change of corruption index values means that a nation has become less corrupt.

Data

Country	Change in Democracy (%)	Change in Income (%)	Change in Political Stability (%)	Change in Corruption (%)
Afghanistan	-1.655629139	46.59090909	-2.230483271	6.666666667
Argentina	5.882352941	0.1943844492	122.2222222	37.93103448
Belarus	-6.28742515	15.42776134	-30.76923077	120
Bolivia	-7.317073171	35.98700244	60	-3.333333333
Bulgaria	0.1424501425	24.94241973	24.32432432	16.66666667
Cameroon	-5.202312139	22.73693158	-152.7272727	8.695652174
Chile	1.013941698	1.244395282	2.325581395	-2.898550725
Congo, Dem. Rep	-34.64912281	48.35924007	-4.975124378	17.64705882
Cuba	-14.77272727	38.65112406	26.92307692	9.302325581
Ecuador	11.17021277	16.86072056	89.04109589	70
Ethiopia	-25.88495575	85.65656566	26.58959538	30.76923077
Georgia	19.04761905	41.63318364	53.26086957	48.71794872
Guinea	50.23923445	24.49612403	58.57142857	75
Honduras	-8.899676375	15.66873136	1.886792453	11.53846154
Iraq	1.5	49.48177478	-2.024291498	38.46153846
Kenya	6.680584551	43.27535002	15.82733813	28.57142857
Kyrgyz Republic	26.17283951	27.92191747	-1.754385965	61.11111111
Lesotho	5.564387917	25.3902663	19.04761905	28.125
Macedonia, FYR	-5.475040258	22.48454188	33.33333333	2.777777778
Mauritius	2.23880597	26.20002507	-1.123595506	-7.272727273
Moldova	-10	45.03439381	248.1481481	13.79310345
Mozambique	-29.87249545	9.893307468	-313.1578947	-11.53846154
Nicaragua	-40.19769357	28.38994037	-327.2727273	0
Peru	4.595879556	39.68001815	70.78651685	-2.777777778
Rwanda	-9.703504043	41.31868132	137.5	86.66666667

Serbia	-1.232665639	21.2360515	103.7037037	14.70588235
Swaziland[12]	-0.3289473684	30.88938476	-350	5.555555556
Thailand	-32.01174743	30.39630326	37.79527559	2.857142857
Tunisia	138.2899628	10.28654687	-960	-2.272727273
Uganda	3.37972167	21.7986897	21.59090909	0
Yemen, Rep.	-33.89830508	-49.76918004	-48.75621891	-39.13043478

Analysis

The null hypothesis of this investigation is that a change in income, democracy and political stability will not lead to a change in corruption. The alternative hypothesis is that a positive change in income, democracy and political stability will lead to a positive change in the corruption index (a higher index value indicated less corruption).

Using Stata, a multivariate OLS (Ordinary Least Squares) regression was used to analyse the data above to return an equation as an output. The null hypothesis must be rejected owing to the low P-value of 0.0440, lower than the cutoff value of 0.05.

```
. mvreg ChangeinCorruptionPerception = ChangeinIncome20082018 ChangeinDemocracy2
> 0082018 ChangeinPoliticalStability20

Equation          Obs   Parms        RMSE    "R-sq"          F        P
----------------------------------------------------------------------
ChangeinCo~n       31       4    30.09007    0.2553    3.084859   0.0440

------------------------------------------------------------------------------
ChangeinCor~n |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
--------------+---------------------------------------------------------------
ChangeinInc~8 |   .2916669   .2555048     1.14   0.264    -.2325857    .8159195
ChangeinDem~8 |    .454281   .2041315     2.23   0.035     .0354376    .8731243
ChangeinPo~20 |    .072734   .0307974     2.36   0.026     .0095429    .1359251
        _cons |   15.88892   9.009451     1.76   0.089    -2.596946    34.37479
------------------------------------------------------------------------------
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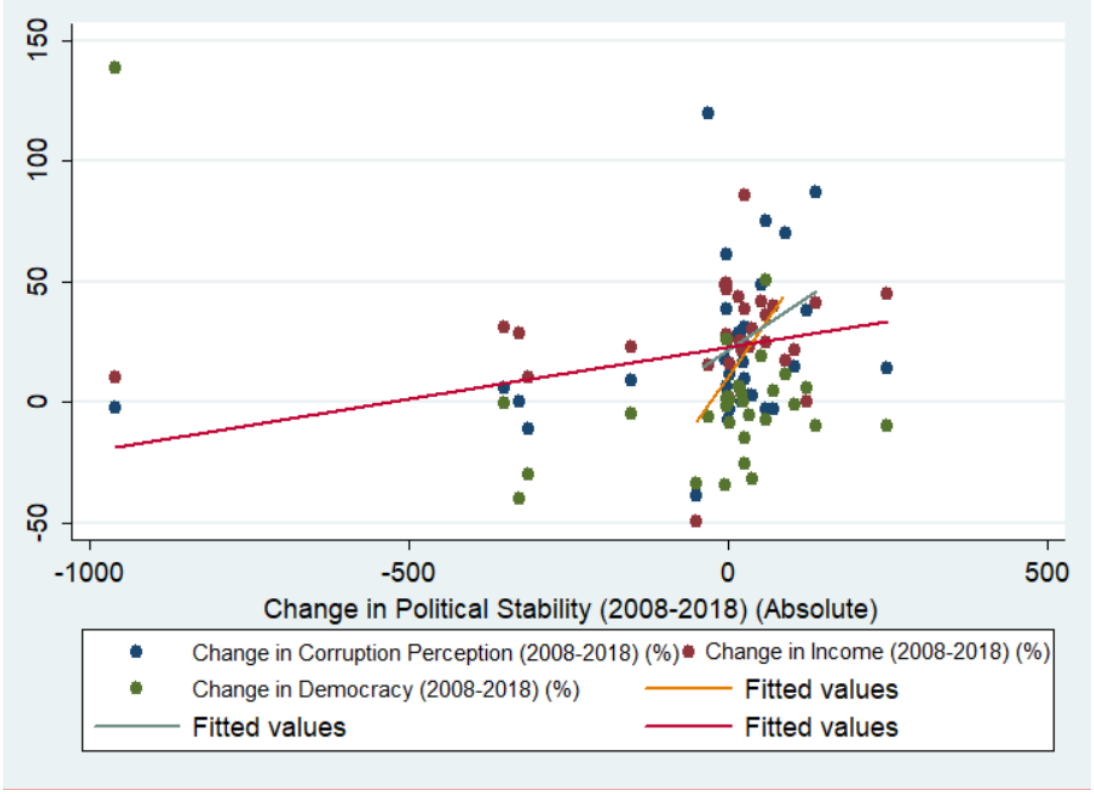
The following equation is the multivariate regression equation for a political corruption, income, democracy and political stability:

$$y = \alpha + \gamma + \delta + \zeta$$

With: y as Political Corruption, αas the intercept, γas Income, δas Democracy, ζas Political Stability. The output shows that all of the variables; income, democracy and political stability have a positive relationship with corruption (meaning that corruption decreases), albeit some variables do so more than others.



The scatterplot above shows the variation in all of the variables above. Some, like income, have considerably greater spread and others like democracy are far closer to together. Some outliers include the green (democracy) point on the farthest top left of the graph and the

highest blue point on the centre (corruption). This shows that while the model above can act as a predictor for corruption, it is still far from perfect as the positive correlation for all the lines above are fairly weak -- a fact seen on the R-square value on the dataset output above.

Conclusions

Overall, there is a weak positive correlation between a change in corruption and a change in income, democracy and political stability. This weak positive correlation stems from the relatively low R-square value of 0.2553 and the spread as seen on the graphical output. While a change in income and a change in democracy have a greater effect on a change in corruption due to the larger coefficient values on the dataset output, the income coefficient has a very large P-value of 0.264, way outside of the standard 0.05 limit to reject the null hypothesis. As such, the income coefficient is not statistically significant and may very well be 0. This means that democracy and political stability are the key drivers of decreasing political corruption albeit democracy is far better compared to political stability owing to democracy's relatively high coefficient value compared to the other variables. Despite income not being statistically significant, the overall equation is; with a P-value just shy of 0.05 at 0.044. Meaning that the model can be used to support the hypothesis that an increase in income, democracy and political stability can lead to a decrease in corruption albeit a change in democracy can lead to a greater change in corruption compared to the other variables.

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