

The Cross-Country Effects of Education Level on Savings Rate

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Econ 3161 Econometrics

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Abstract:

This analysis attempts to find the relationship between the education level of the people of a country and the savings rate of the people in a country at the global scale. Previous research has found there to be a positive relationship between education levels and savings rates both across the US and across countries. This study uses both simple and multiple linear regression models to analyze and find the relationship between the two variables to see if those past studies hold up with modern data. Results were mixed as in the simple regression model education was very significant and positive, but in the multiple regression models education became negative when income was considered. There was special consideration as to whether a country was considered developed or developing.

I. Introduction

The number one way to be financially stable is to save and invest your money. It seems that as people gain an education they should be more inclined to save their money and plan for the future. Wealthier countries tend to have superior education systems so it would make sense that richer countries have higher savings rates. This assumption would cause an everlasting cycle of richer countries getting richer (from saving), and poorer countries not accumulating more wealth.

This paper is meant to understand the relationship between the quality of education and how it relates to savings rates within a country. We want to measure the correlation between education levels and savings rates. To measure a country's education, we will be using the percentage of the population that has completed school at the primary education level (through grade 8, or completion of middle school).

Education is key to the development of countries. Not only does it teach foundational skills like reading, writing, and basic arithmetic, education spurs innovation, business, and the economy. Globally, every extra year of education results in a 10% increase in future hourly wage. It is incredibly important. Fortunately, developing countries have made tremendous strides in improving education systems. Making beneficial investments in this area is crucial in ending wide-spreading poverty.

In the United States, the COVID-19 pandemic drastically changed individual savings rates and education levels. The pandemic could lose this generation of children \$17 trillion in earnings. Savings rates surged during early 2020 and into 2021. Although savings rates have come down in recent months, the national rate is still above what it was pre-pandemic.

To expand on the dependent variable, a savings rate is a measurement of the amount of money one sets aside outside of their disposable income to save or put towards retirement. We will calculate this rate as a percentage of GDP.

The hypothesized relationship between the independent variable, education level, and the dependent variable, the savings rate is a positive relationship. The reasoning behind this thesis has already been touched upon. The higher the quality of education citizens receive should result in more savings. This idea comes from the fact that more quality education will lead to more earnings, therefore, the savings will be higher. If disposable income is higher, then you will have

more savings. Furthermore, more educated people should know more about the benefits of putting aside and investing money, leading to more savings for the educated.

II. Journal Article

In Bernheim, Garret, and Maki's journal article (2001), the economists sought to find whether high schools that taught household financial decision-making, as part of their school curriculum, had any effects on subsequent decisions when said students reached adulthood. Results were recorded from high schools – from different states – that adopted such curriculum, over the course of +40 years. Between 1957 and 1985, out of the 29 states that adopted some type of consumer education in secondary school legislation, 14 required topics relating to household financial decision-making. Such topics included budgeting, credit management, balancing checkbooks, and other investment principles. Bernheim and co. found that consumer education only had short-run effects on students, such as knowledge and attitudes to the subject. Conversely high schools that mandated specific topics relating to household financial decision-making had long-term behavioral effects on students. The economists who conducted this study provided the first systematic evidence of the long-term behavioral effects of secondary school financial curriculum mandates. Such results were found to be consistent with the view that mandates are uncorrelated with the tendency to offer/ require subjects that teach financial topics. Furthermore, its results showed that mandated legislation greatly increased the exposure to financial education, which in turn, raised the probability of students saving and accumulating wealth in their adulthood. In essence, education is a catalyst for stimulating personal savings.

The research paper by Areendam Chanda (February 2008) examines how savings actually is in favor of further investment in education, as personal education increases. As people increase their human capital, they actually tend to increase their spending levels by more than they save. Chanda argues that people will make more money due to higher education, in turn leading to a reduction in savings. An interesting finding from the paper is that educated parents see great benefits in reinvesting in their children's education, resulting in an increase in spending once children get to that age. Enrollment rates are increasing; more people, now more than ever, are going to university. The paper lays out all of the OECD countries and their personal savings rates to private education spending rates. With the exception of South Korea (an outlier), countries including the US, Australia, and Canada have the lowest savings rates but the highest

education spending rates. On the other hand, the countries with the highest savings rates including Belgium, France, and Spain have relatively low education spending rates. However, this could be the result of private education culture in the US and Canada and a reflection on the quality of public education in the batch of countries. Although wages and in turn education have been increasing in the developed world, household savings and private savings in the United States and other highly developed countries have been decreasing since the 1980s.

In the research done by Cesar Revoredo and Jacques Morisset (November 1999), they dive into the long-term effect of education on household savings rates across a large group of countries over a thirty-year span. They had the hypothesis that higher education would lead to a higher income and then to a higher savings rate, but they also gave arguments on why there might be a negative relationship between education and the saving rate. Some reasons are that there is a delay between spending on education and the return from education. As well as people with higher education have a lower precautionary savings rate as they may feel that with their education they have stable employment and income meaning the less they feel the need to save. Revoredo and Morisset's findings were that education does in fact lead to a positive relationship to savings, but that there were times when the relationship was negative or was marginally decreasing in benefit. Revoredo and Morisset found that although education leads to a positive increase in a country's household savings rate, they found that "it takes more than five years for the initial negative effect to be compensated by the positive effect of an increase in the stock of education on savings through economic growth (Morisset 13, 2008)." They found that the effect of education on savings was higher in industrial countries compared to developing countries. Finally, Revoredo and Morisset determined, "The effects associated with primary and secondary education are positive and significant in all regions, while the effect of university education is only positive in developed countries (Morisset 25, 2008)." Finding that primary education had the greatest impact with secondary having a large but not as great impact on the savings rate, with tertiary education only having an effect in developed countries.

The aforementioned three-journal articles, discussed above, describe how education helps lay the building blocks for students to save more in the future (i.e. in their adulthood). The discerning feature of this report is that multiple variables were used to reach such a conclusion (if education has a positive impact on savings rates). Government expenditure; net national income;

and primary school completion were factored into our report to find if education level affects gross domestic savings. Moreover, this report uses a country's level of development as a dummy variable.

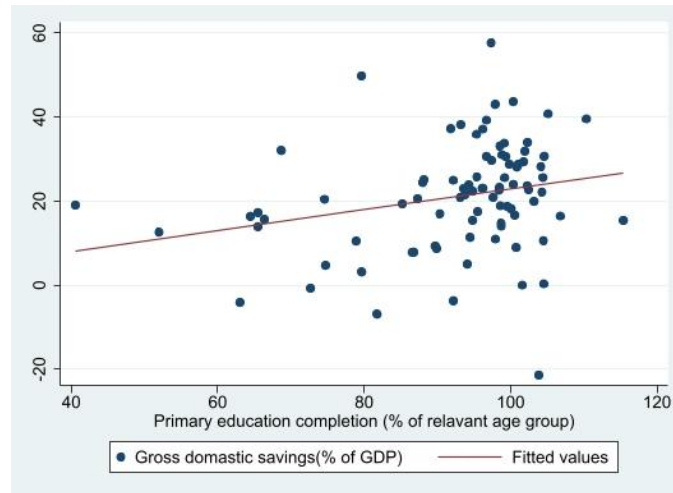
III. Data

The independent variable is the education level. The dependent variable is the savings rate. The savings rate is going to depend upon the education level of the country.

Some control variables that need to be noted include GDP, income level (as a log function), and developmental status (Developing = 1, Developed = 0). GDP needs to be controlled because countries with varying GDPs probably have different savings rates. GDP will be controlled against by taking variables affected by GDP as a percentage of GDP. Income level needs to be controlled because income is highly correlated to education and savings rates. This factor cannot have an impact on our data. Savings rates could be dramatically impacted by these two statistics.

The source of our educational data is the World Bank (October 2022). The dependent variable data comes from the World Bank website. The data from both of these files was very dense and complex. In order to simplify this data, we randomly narrowed down the countries in the sample to 86 countries. The data we are using comes from 2018. Instead of using a plethora of random variables in the data, we took out the irrelevant variables and are focusing on the percent of the population that has completed a primary level of education, as it was found from research to have the greatest impact and to be the most available across countries.

Scatter-Plot 1: Correlation between *grsdomsav* & *primcomp*



A correlation between gross domestic savings (*grsdomsav*) and primary school completion (*primcomp*) was found (scatter-plot 1). Most of the observed nations are on the right end of the scatter plot, with a primary school completion rate of at least 85%. For the most part, countries that have a primary school completion rate of at least the average (92.72%) would save at a higher rate. Conversely, nations that are below rank below the average are relatively even, either above or below the line of best fit. It can be inferred from such observations that nations with a high primary school completion rate are more likely to have higher savings rates; but if below, it is more of a “toss-up”. It is worth mentioning that there are some outliers with such an assumption. For instance, East Timor’s *primcomp* variable is above the average but with a negative gross domestic savings rate (-21%). Other countries fall under this caveat but are predominantly below the *primcomp*’s average.

Table 1: Variable Description

Variable Name	Variable Description	Sample Size	Year	Units	Source
<i>grsdomsav</i>	Gross Domestic Savings	86	2018	% of GDP	World Bank
<i>primcomp</i>	Primary School completion rate	86	2018	% of relevant age group	World Bank
<i>govexpedu</i>	Government expenditure on education	86	2018	% of GDP	World Bank
<i>netnatinc</i>	Adjusted net national income per capita	86	2018	Constant 2015 US\$	World Bank
<i>lnnetnatinc</i>	Log adjusted net national income	86	2018	Constant 2015 US\$	World Bank
<i>Dev</i> (dummy variable)	Development status of countries	86	2018	Dummy: Developed = 0 Developing = 1	Human Development Reports

Note: The values for the Development status of countries was determined by the Human Development Index (HDI) with Developed being determined to have an HDI of 0.8 or greater (scale of 0 to 1)

Table 2: Variable Summary Statistics

Variable	Observations	Mean	Standard Deviations	Minimum	Maximum
<i>grsdomsav</i>	86	21.07044	13.0692	-21.3724	57.62767
<i>primcomp</i>	86	92.72142	13.12213	40.56022	115.4369
<i>govexpedu</i>	86	4.803634	1.650599	2.15748	10.81
<i>netnatinc</i>	86	13042.49	15855.03	201.4466	63532.88
<i>lnnetnatinc</i>	86	8.685477	1.396053	5.305524	11.05931
<i>dev</i>	86	0.5	0.5029326	0	1

Outliers: The minimum values of *grsdomsav* had multiple countries with small negative values which are possible, but there was one country with a large negative value but the removal of that country did not make any significant change to the mean or standard deviation.

Note: The dummy variable mean is 0.5 which concludes that there are equal numbers of developing and developed countries.

Before conducting any regression analysis the Classical Linear Model assumptions were checked to determine any bias, variance, and normal distribution. The assumptions were checked as follows.

1. The model is linear:

The model passed the assumption of being linear and with an error term with the formula

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 \dots + \beta_k X_k + u$$

2. Random Sampling:

All the data gathered from the World Bank is done through random samples from populations around the world. So the model passes this assumption.

3. No perfect collinearity:

To test for perfect collinearity in the variables listed in table 1 a correlation test was run in STATA on the data. No variables came up with perfect correlation, therefore the model passes this assumption. The STATA output for this test can be found in the appendix.

4. Zero Conditional Mean:

In the single regression analysis, it cannot fully contain and explain the model as there are other factors that impact saving and education in a country. Multiple regression models were run with a more inclusive scope to solve this. Although it cannot be certain this assumption is passed, the results of the analyses will be considered with this in mind.

5. Homoscedasticity:

This assumption determines that the error term “u” variance is equal to zero. This is a difficult assumption to make as any unobserved variables included in the error term could have a correlation with the control variables. The results will be considered with this in mind.

IV. Results

To start, the simple regression analysis is tested to identify a relationship between savings and education without any other explanatory variables to determine the direct impact education has on the savings rate.

Model 1: $grsdomsav = \beta_0 + \beta_1(primcomp) + u$

Regressing savings on primary education completion gives us:

$$grsdomsav = -1.83 + 0.25 (primcomp)$$

$$N = 86 \quad R^2 = 0.062$$

This model has a positive coefficient for primary education completion meaning that an increase in the education completion rate leads to an increase in the percent savings rate. This aligns with our predictions above and the data above. Although the R Squared value is quite small, meaning the data is not well fitting, it does not necessarily mean the model is not useful or significant.

Multiple regression models include other explanatory variables to add a more accurate report of the effect on savings.

Model 2: $grsdomsav = \beta_0 + \beta_1 (primcomp) + \beta_2 (govexpeduc) + \beta_3 (lnnetnatinc)$

Regressing savings on primary education completion, government expenditure on education, and net national income (as a log function) yields:

$$grsdomsav = -17.21 - 0.08 (primcomp) - 1.66 (govexpeduc) + 6.16 (lnnetnatinc)$$

$$N = 86 \quad R^2 = 0.38$$

This model has a very small negative coefficient for primary education completion paired with the negative coefficient for government expenditure on education. Meaning that an increase in either will lead to a decrease of 0.08 and 1.66 percentage points respectively in the savings rate. Whereas the log of income has a large positive coefficient meaning that an increase in income will lead to an increase of 6.16 percentage points in savings. The R Squared value is 0.38 which is a better fit than the simple regression model.

Model 3: $grsdomsav = \beta_0 + \beta_1 (primcomp) + \beta_2 (govexpeduc)$

Regressing savings on primary education competition and government expenditure on education yields:

$$grsdomsav = 1.06 + 0.29 (primcomp) - 1.35 (govexpeduc)$$

$$N = 86 \quad R^2 = 0.089$$

This model has a positive coefficient for primary education completion again has a positive coefficient meaning that an increase will lead to a 0.29 percentage point increase in savings. Government expenditure on education is still a negative coefficient meaning a 1 percent increase in expenditure creates a 1.35 percentage point decrease in savings. The R squared for this model shows a greater fit compared to the simple regression model.

This model is another simple regression model to look at savings and national income per capita (as a log function) as a control to see income's direct effect on savings.

Model 4: $grsdomsav = \beta_0 + \beta_1 (lnnetnatinc)$

Regressing savings on net national income (as a log function) yields:

$$grsdomsav = -25.63 + 5.38 (lnnetnatinc)$$

$$N = 86 \quad R^2 = 0.33$$

This model has a positive coefficient for income meaning that a 1 percentage point increase in income will lead to a 5.38 percentage point increase in savings. The R Squared value is 0.33 which is larger than the R Squared of Model one, the simple regression of savings and primary education completion. This model shows income has a large impact on savings rates.

This final model includes a dummy variable of the developmental status of countries where 1 is attributed to the developing countries and 0 is attributed to the developed countries.

$$\text{Model 5: } grsdomsav = \beta_0 + \beta_1 (\text{primcomp}) + \beta_2 (\text{govexpeduc}) + \beta_3 (\text{lnnetnatinc}) + \beta_4 (\text{dev})$$

Regressing savings on primary education completion, government expenditure on education, net national income (as a log function), and the dummy variable dev yields:

$$grsdomsav = -15.55 - 0.08 (\text{primcomp}) - 1.64 (\text{govexpeduc}) + 5.99 (\text{lnnetnatinc}) - 0.58 (\text{dev})$$

$$N = 86 \quad R^2 = 0.38$$

This model is an addition to the unrestricted model 2. The variable coefficients are very similar to Model 2. The dummy variable coefficient is negative meaning that the less developed a country is the less savings in percent of GDP a country has. The R Squared value of 0.38 is the same as Model 2's R Squared.

Table 3: Model results

Dependent Variable log(salary)					
Independent Variables	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)
primcomp	0.25** (0.11)	-0.08 (0.11)	0.29*** (0.11)		-0.08 (0.11)
govexpedu		-1.66**	-1.35*		-1.64**

		(0.71)	(0.85)		(0.72)
ln (netnatinc)		6.16*** (0.99)		5.38*** (0.84)	5.99*** (1.55)
dev					-0.58 (3.91)
Intercept	-1.83 (9.86)	-17.21** (8.75)	1.06 (9.94)	-25.63*** (7.35)	-15.55 (14.29)
No. of obs.	86	86	86	86	86
R-square	0.062	0.38	0.089	0.22	0.38

Significance levels: 10%*, 5%** , 1%***

Statistical Inferences

The statistical significance of such variables is proven through the use of the t-test, p-values, and confidence intervals. The outputs for the t-values, p-values, and 95% confidence intervals were recorded for model 5.

Table: Model 5

Independent Variables	Coefficient	t-value	p-value	95% Confidence Intervals
primcomp	-0.078	-0.72	0.47	(-0.291, 0.135)
govexpedu	-1.64	-2.28**	0.025	(-3.080, -0.207)
ln (netnatinc)	5.99	3.86**	0.00	(2.90, 9.071)
dev	-0.58	-0.15	0.88	(-8.347, 7.195)

The hypothesis below is used for this study to test each variable in model 5.

Let β_k be any of the independent variables $\beta_1 - \beta_4$

$$H_0: \beta_k = 0$$

$$H_1: \beta_k \neq 0$$

Using the two-tailed test, the critical value for 86 degrees of freedom at the 5% level of significance is 1.987. Out of the four independent variables, the t-values for **govexpedu** and **lnnetnatinc** were greater than such level. Thus the two variables are statistically significant, and the null hypothesis is rejected. The remaining variables (*primcomp* and *dev*) are not significant at any level. The p-value for **govexpedu** (0.025) confirms the result drawn from the t-test, as the p-value lies between the 1% level and the 5% level. Therefore, the coefficient for government expenditure is statistically significant at the 5% level, but not at the 1% level. Moreover, the p-value for **lnnetnatinc** was exactly 0.00, meaning that the observed difference is unlikely to be due to chance; thus, the coefficient is not likely to equal zero.

V. Robustness

To find the joint significance, the F-test was conducted using the respective outputs from the t-test. For such a test, **Model 2** was the restricted model – without *primcomp* – (see A.10 in Appendix), and since **Model 5** uses all the variables, **Model 5** is the unrestricted model. The F-test was run using the dummy variable for developing countries to show the relationship that the level of development for a country and its primary school completion rate have on the savings rate.

F-Test:

With the use of models 1 & 2, the following F-test tests the significance of *primcomp* and *dev*.

$$H_0: \beta_1 = 0, \beta_2 = 0$$

$$H_1: H_0 \text{ is false}$$

$$\text{In this test } q = 2, R^2_{UR} = 0.38, R^2_R = 0.062$$

$$n = 86, k = 3$$

$$F = \frac{\left(\frac{0.3765 - 0.3808}{2}\right)}{\frac{(1 - 0.3808)}{(86 - 3 - 1)}} = 0.28$$

At 5% level of significance, critical value = 3.10

$$F < \text{critical value}_{5\%}$$

Therefore, do **NOT reject** the Null Hypothesis, H_0

Since the null hypothesis is not rejected, there is not enough evidence to conclude that *primcomp* and *dev* are jointly significant.

VI. Conclusion

In summary, the simple regression model found that an increase in education level leads to an increase in savings rates. This follows what was found in the research articles discussed at the beginning. However, in the multiple regression models, educational levels become no longer significant when taking into account income, even when combined with the developmental level of the country the education level is not significant. When the dummy variable (developing) was introduced to create an additional model (model 5), government expenditure and net income were statistically significant at the 5% level of significance. Variables *primcomp* and *dev* were both not significant under any level. Moreover, when *primcomp* and *dev* were joined for the F-test, it was concluded that the two variables in question were not significant at the 5% level, as well. This implies that the level of development of a country does not impact the savings rate with respect to primary school completion.

This research is not all-inclusive as there is a possibility of variables that got included in the error term that are significant, and if included in the models, could change the multiple regression models outcome. The focus on education in the simple regression model leads to a positive relationship; and with further research, there could be more done to see if there is further significance from other factors that were not included in this research paper.

References

- Bernheim, B. Douglas., Garrett, D. M., & Maki, D. M. (2001). Education and saving: *Journal of Public Economics*, 80(3), 435–465. [https://doi.org/10.1016/s0047-2727\(00\)00120-1](https://doi.org/10.1016/s0047-2727(00)00120-1)
- Chanda, A. (2008). The rise in returns to education and the decline in household savings. *Journal of Economic Dynamics and Control*, 32(2), 436–469.
<https://doi.org/10.1016/j.jedc.2006.09.014>
- Nations, U. (2021, December 31). *Documentation and downloads*. Hdr.undp.org.
<https://hdr.undp.org/data-center/documentation-and-downloads>
- Revoredo, C. L., & Morisset, J. P. (1999, November 30). *Savings and Education: A Life-Cycle Model Applied to a Panel of 74 Countries*. Papers.ssrn.com.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=620680
- The World Bank. (2022, October 13). *World Development Indicators | DataBank*. Worldbank.
<https://databank.worldbank.org/source/world-development-indicators>

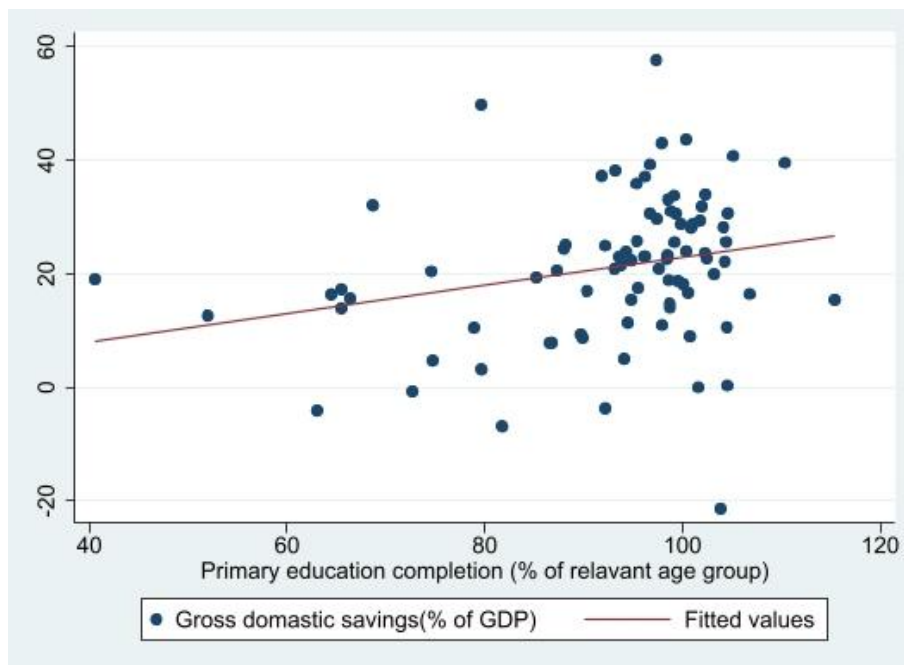
Appendix

A.1

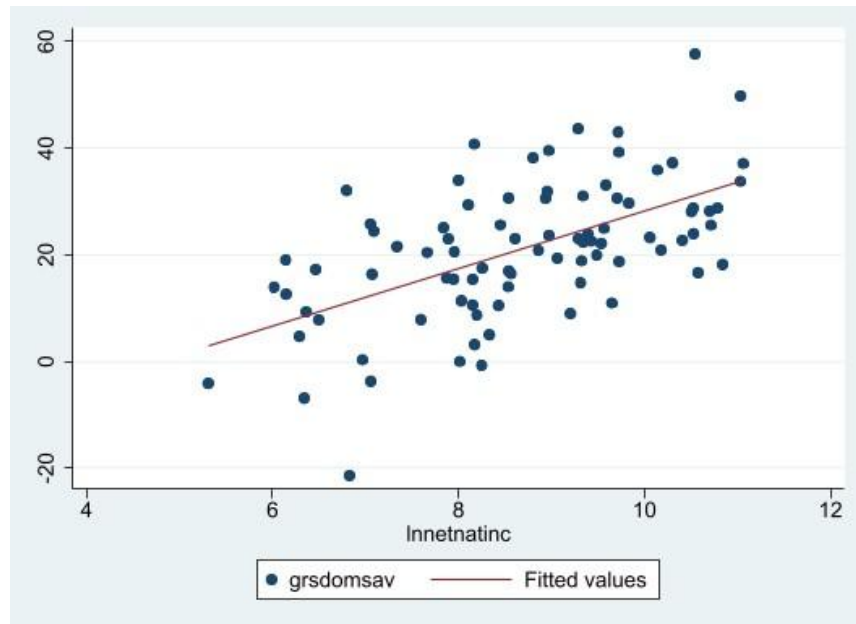
. summ

Variable	Obs	Mean	Std. dev.	Min	Max
name	0				
govexpeduc	86	4.803634	1.650599	2.15748	10.81
primcomp	86	92.72142	13.12213	40.56022	115.4369
grsdomsav	86	21.07044	13.0692	-21.3724	57.62767
netnatinc	86	13042.49	15855.03	201.4466	63532.88
dev	86	.5	.5029326	0	1
lnnetnatinc	86	8.685477	1.396053	5.305524	11.05931

A.2



A.3



A.4

```
. corr govexpeduc primcomp grsdomsav net lnnetnatic
(obs=86)
```

	govexp~c	primcomp	grsdom~v	netnat~c	lnnetn~c
govexpeduc	1.0000				
primcomp	0.2286	1.0000			
grsdomsav	-0.1052	0.2480	1.0000		
netnatic	0.2137	0.2849	0.4726	1.0000	
lnnetnatic	0.1860	0.5691	0.5744	0.8286	1.0000

A.5

```
. regress grsdomsav primcomp
```

Source	SS	df	MS	Number of obs	=	86
Model	892.916972	1	892.916972	F(1, 84)	=	5.50
Residual	13625.4231	84	162.207418	Prob > F	=	0.0213
				R-squared	=	0.0615
				Adj R-squared	=	0.0503
Total	14518.3401	85	170.804001	Root MSE	=	12.736

grsdomsav	Coefficient	Std. err.	t	P> t	[95% conf. interval]	
primcomp	.2469971	.1052741	2.35	0.021	.0376479	.4563463
_cons	-1.831479	9.857308	-0.19	0.853	-21.43382	17.77086

A.6

```
. regress grsdomsav primcomp govexpeduc lnnetnatinc
```

Source	SS	df	MS	Number of obs	=	86
Model	5525.45037	3	1841.81679	F(3, 82)	=	16.79
Residual	8992.88973	82	109.669387	Prob > F	=	0.0000
				R-squared	=	0.3806
				Adj R-squared	=	0.3579
Total	14518.3401	85	170.804001	Root MSE	=	10.472

grsdomsav	Coefficient	Std. err.	t	P> t	[95% conf. interval]	
primcomp	-.0783145	.106512	-0.74	0.464	-.2902008	.1335718
govexpeduc	-1.659888	.7086177	-2.34	0.022	-3.069554	-.2502218
lnnetnatinc	6.161185	.9919437	6.21	0.000	4.187893	8.134477
_cons	-17.20746	8.753595	-1.97	0.053	-34.62115	.2062261

A.7

```
. regress grsdomsav primcomp govexpeduc
```

Source	SS	df	MS	Number of obs	=	86
Model	1294.48199	2	647.240997	F(2, 83)	=	4.06
Residual	13223.8581	83	159.323592	Prob > F	=	0.0207
				R-squared	=	0.0892
				Adj R-squared	=	0.0672
Total	14518.3401	85	170.804001	Root MSE	=	12.622

grsdomsav	Coefficient	Std. err.	t	P> t	[95% conf. interval]	
primcomp	.2859003	.1071731	2.67	0.009	.0727372	.4990634
govexpeduc	-1.352653	.8520178	-1.59	0.116	-3.047283	.3419756
_cons	1.059014	9.9375	0.11	0.915	-18.70627	20.8243

A.8

```
. generate lnnetnatinc=ln(netnatinc)
```

```
. regress grsdomsav lnnetnatinc
```

Source	SS	df	MS	Number of obs	=	86
Model	4790.00634	1	4790.00634	F(1, 84)	=	41.36
Residual	9728.33376	84	115.813497	Prob > F	=	0.0000
				R-squared	=	0.3299
				Adj R-squared	=	0.3220
Total	14518.3401	85	170.804001	Root MSE	=	10.762

grsdomsav	Coefficient	Std. err.	t	P> t	[95% conf. interval]	
lnnetnatinc	5.377207	.8361194	6.43	0.000	3.714492	7.039922
_cons	-25.63317	7.35423	-3.49	0.001	-40.25786	-11.00847

A.9

. regress grsdomsav primcomp govexpeduc lnnetnatinc dev

Source	SS	df	MS	Number of obs	=	86
				F(4, 81)	=	12.45
Model	5527.86531	4	1381.96633	Prob > F	=	0.0000
Residual	8990.47479	81	110.993516	R-squared	=	0.3808
				Adj R-squared	=	0.3502
Total	14518.3401	85	170.804001	Root MSE	=	10.535

grsdomsav	Coefficient	Std. err.	t	P> t	[95% conf. interval]	
primcomp	-.0775844	.1072673	-0.72	0.472	-.2910127	.135844
govexpeduc	-1.643059	.721955	-2.28	0.025	-3.079523	-.2065948
lnnetnatinc	5.986098	1.550741	3.86	0.000	2.90061	9.071585
dev	-.5761067	3.905704	-0.15	0.883	-8.347233	7.19502
_cons	-15.54723	14.29113	-1.09	0.280	-43.9821	12.88763

A.10

. regress grsdomsav govexpeduc lnnetnatinc

Source	SS	df	MS	Number of obs	=	86
				F(2, 83)	=	25.06
Model	5466.16161	2	2733.0808	Prob > F	=	0.0000
Residual	9052.17849	83	109.062391	R-squared	=	0.3765
				Adj R-squared	=	0.3615
Total	14518.3401	85	170.804001	Root MSE	=	10.443

grsdomsav	Coefficient	Std. err.	t	P> t	[95% conf. interval]	
govexpeduc	-1.739073	.698445	-2.49	0.015	-3.128253	-.3498944
lnnetnatinc	5.75966	.8257944	6.97	0.000	4.117188	7.402132
_cons	-20.60108	7.417298	-2.78	0.007	-35.35379	-5.848371

Countries used in research (86):

Algeria, Argentina, Armenia, Austria, Bahrain, Belarus, Belize, Bhutan, Bolivia, Burkina Faso, Burundi, Cabo Verde, Cambodia, Cameroon, Chad, Chile, Colombia, Costa Rica, Cote d'Ivoire, Croatia, Czechia, Denmark, Djibouti, Dominican Republic, Ecuador, Estonia, Eswatini, Finland, Gambia, Georgia, Germany, Ghana, Greece, Guatemala, Hungary, Iceland, Indonesia, Ireland, Israel, Italy, Jamaica, Jordan, Kazakhstan, Korea, Rep., Kuwait, Kyrgyz Republic, Latvia, Lithuania, Luxembourg, Madagascar, Malaysia, Maldives, Mauritius, Mexico, Moldova, Mongolia, Morocco, Mozambique, Myanmar, Namibia, Norway, Oman, Peru, Philippines, Poland, Portugal, Romania, Russian Federation, Rwanda, Saudi Arabia, Serbia, Sierra Leone, Slovak Republic, Slovenia, Solomon Islands, South Africa, Spain, Sweden, Switzerland, Tanzania, Timor-Leste, Togo, United Kingdom, United States, Uruguay, Zimbabwe