

PCR and Measurement Error

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Application: Government Share of Healthcare Spending and Life Expectancy

In the left column in the table below I first regress the life expectancy at birth for all individuals in a given country and year on a measure of government spending as a share of total health expenditure. In the middle column I include the economic controls/covariates of GDP per capita (PPP), GNI per capita (PPP), Survey Mean Income/Consumption Per Capita, ILO GDP per person employed, and Net Foreign Assets Per Capita, all from the World Bank. In the rightmost column I instead use the first principal component combining these covariates.

I standardize all variables by subtracting the mean and dividing by the standard deviation, linearly interpolate data between known observations, and remove country-years with missing values for any of the economic indicators.

	<i>Life Expectancy at Birth (Years)</i>				
	(1)	(2)	(3)	(4)	(5)
Govt. Share of Health Exp.	0.564*** (0.018)	0.256*** (0.018)	0.024*** (0.008)	0.298*** (0.018)	0.026*** (0.007)
Covariates	None	Econ Indicators	Econ Indicators	PCs	PCs
Fixed Effects	No	No	Yes	No	Yes
Observations	1,995	1,995	1,995	1,995	1,995
R^2	0.319	0.573	0.987	0.518	0.987
Adjusted R^2	0.318	0.569	0.985	0.517	0.985
Residual Std. Error	0.826	0.656	0.121	0.695	0.121
F Statistic	931.676***	176.737***	2458.091***	1069.682***	413673698880527.3

Note:

*p<0.1; **p<0.05; ***p<0.01
All variables are standardized

	<i>Life Expectancy at Birth (Years)</i>				
	(1)	(2)	(3)	(4)	(5)
Govt. Share of Health Exp.	0.703*** (0.034)	0.658*** (0.040)	0.028 (0.025)	0.698*** (0.037)	0.026 (0.023)
Covariates	None	Ginis	Ginis	PCs	PCs
Fixed Effects	No	No	Yes	No	Yes
Observations	322	322	322	322	322
R^2	0.566	0.596	0.999	0.566	0.999
Adjusted R^2	0.565	0.583	0.998	0.564	0.998
Residual Std. Error	0.599	0.586	0.041	0.599	0.040
F Statistic	417.382***	45.905***	1421.089***	208.238***	5197.660***

Note:

*p<0.1; **p<0.05; ***p<0.01
All variables are standardized.

Appendix

Figure 1: Correlations Between Covariates and Life Expectancy

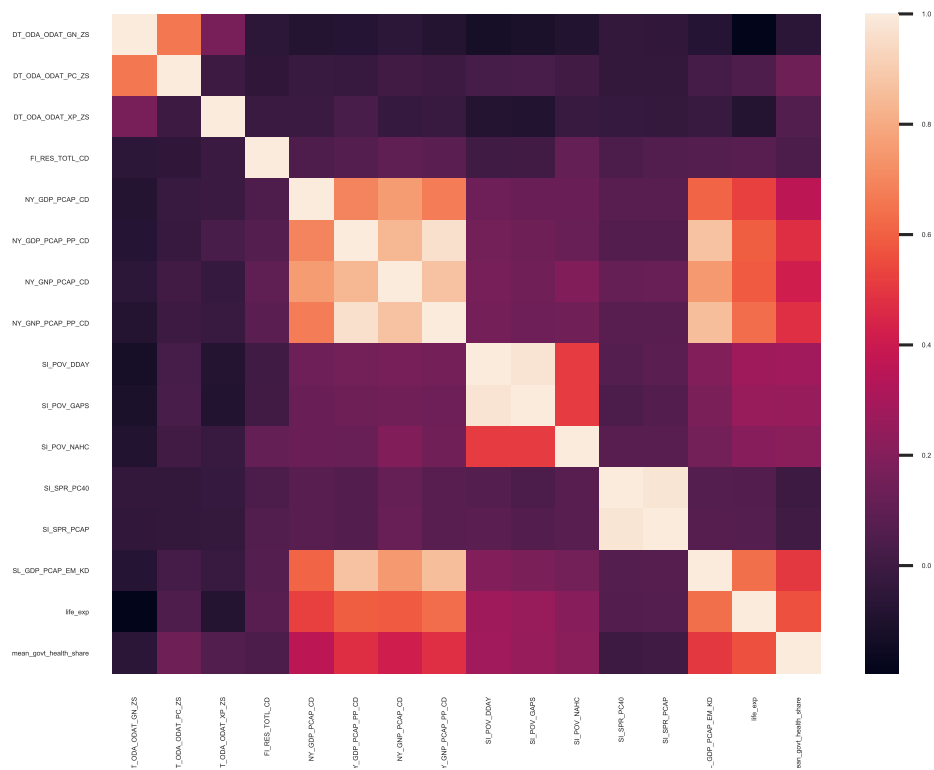


Figure 2: Economic Measures PCA Loadings

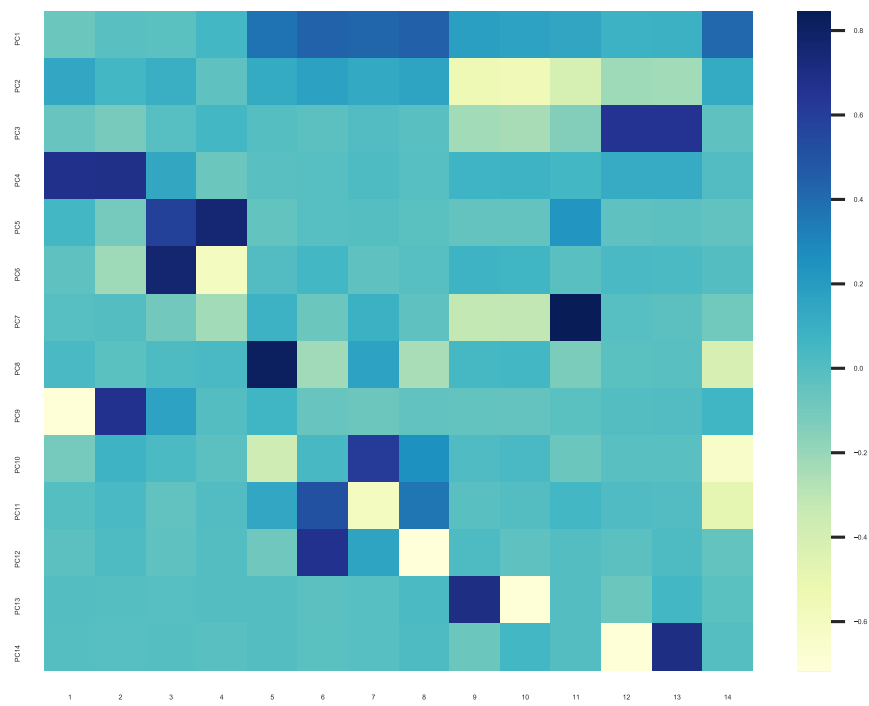


Figure 3: Economic Measures PCA Share of Variance Explained

