

PCR and Measurement Error

Isaac Liu

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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) |
| Government Share of Health Expenditure | 0.552*** (0.019) | 0.304*** (0.018) | 0.022*** (0.007) | 0.315*** (0.018) | 0.022*** (0.007) |
| GDP Per Capita PPP | | -0.511*** (0.064) | -0.038 (0.034) | | |
| GNP Per Capita PPP | | 0.700*** (0.061) | 0.006 (0.013) | | |
| Survey Income/Consumption Per Capita | | 0.012 (0.016) | -0.003 (0.002) | | |
| GDP Per Employed Person | | 0.332*** (0.033) | -0.040 (0.045) | | |
| PC1 | | | | 0.293*** (0.011) | -0.033* (0.018) |
| Fixed Effects | No | No | Yes | No | Yes |
| Observations | 1,965 | 1,965 | 1,965 | 1,965 | 1,965 |
| R^2 | 0.305 | 0.519 | 0.987 | 0.489 | 0.987 |
| Adjusted R^2 | 0.304 | 0.518 | 0.985 | 0.489 | 0.985 |
| Residual Std. Error | 0.834 | 0.695 | 0.121 | 0.715 | 0.121 |
| F Statistic | 860.658*** | 422.624*** | 922.311*** | 940.509*** | 955.323*** |

Note:

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

Appendix

Figure 1: Correlations Between Covariates and Life Expectancy

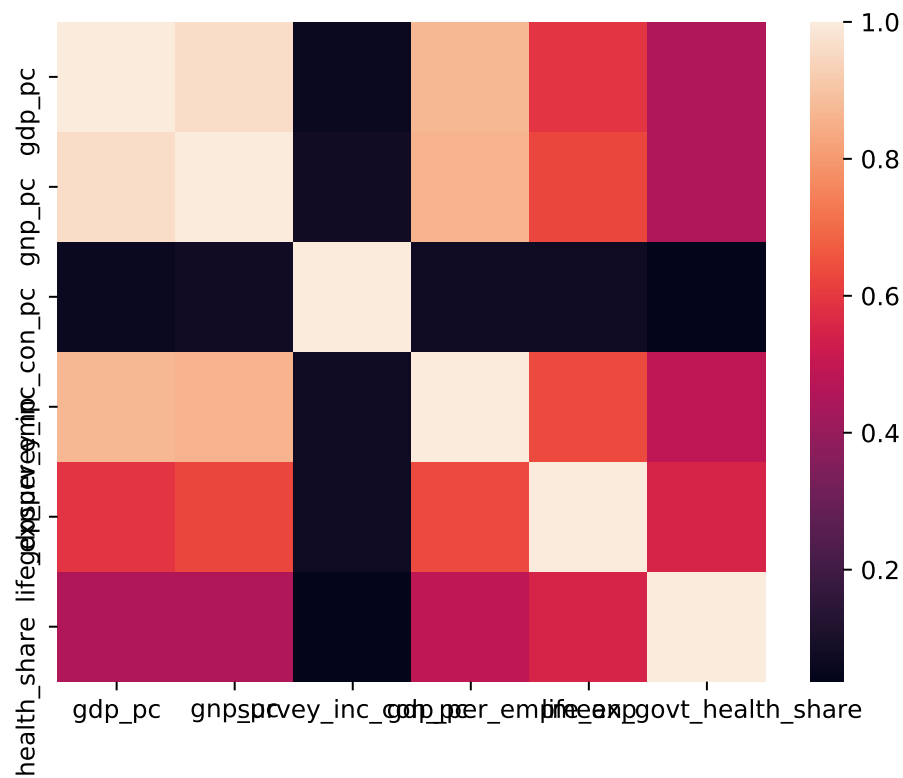


Figure 2: Economic Measures PCA Loadings

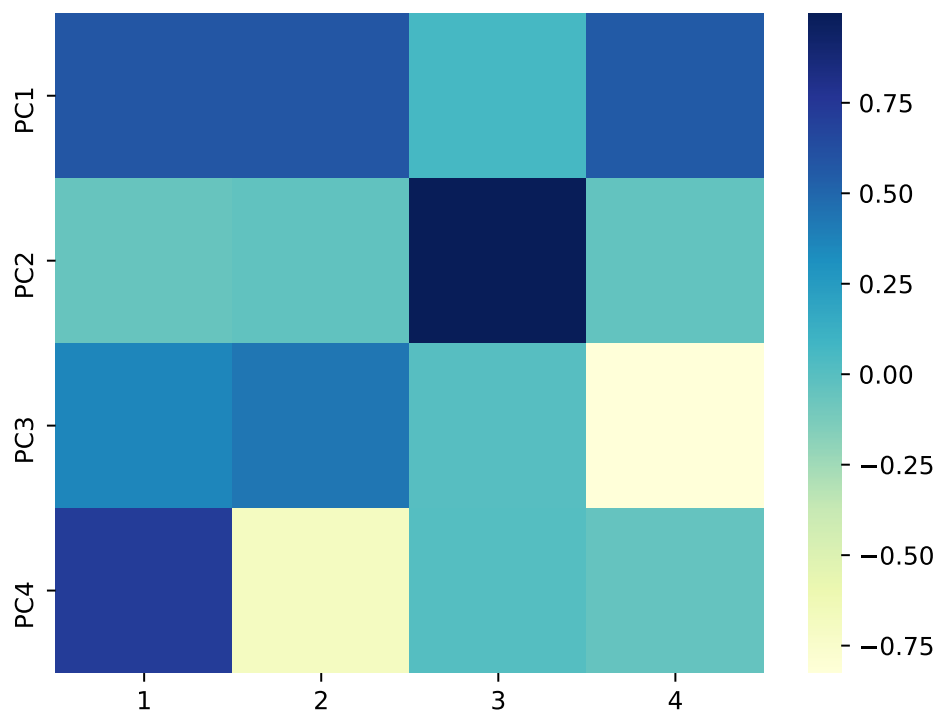


Figure 3: Economic Measures PCA Share of Variance Explained

