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# Evidence on the Relation Between Public Capital and Government Efficiency

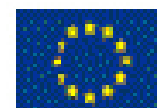
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# Purpose

Long time preoccupation with the causes and consequences of government size

With little room to increase public spending, efficiency has to be a priority

Efficiency and “good” spending are determinant to a healthy economy

**Purpose: first steps in understanding what good spending might be. Is there an actual relation between efficiency and investment in public capital?**



# Motivation

reasons to conduct such an exercise:

1. There is some theoretical work linking public capital to government efficiency but very little on the empirical relation that might support the theoretical findings.
2. There is some empirical work about the exogenous determinants of government efficiency but very little as to the endogenous determinants of such efficiency.
3. The present context we're living makes it determinant for the survival of governments (and probably countries) that choices about spending induce efficiency.



# The paper

- Measures of Efficiency
- Theoretical support for the relation we want to test.
- Regression Results
- Main conclusions



# Government Quality

- What is a good Government?
  - Literature (La Porta et al.):  
Good government is a government that is good for capitalistic development, namely.
    - Protects property rights
    - Intervenues little
    - Taxes lightly
    - Small dimension
    - Well functionig-bureaucracy
    - Free of corruption
    - Politically free and sustained by a democary
    - Provides public goods of high quality
    - It is efficient



# Government Quality

- The previous list is not consensual through the literature. Some have ideological content and others are difficult to measure.
- We decided to focus on efficiency once it is consensual and easy to measure.
- In our analysis: Good Government = Efficient Government



# Government Quality

- Good Government is a government that provides services in essential sectors like health and education, in a efficient way, i.e., the relation between output indicators and the amount of resources necessary to achieve them is high.



# How do we measure efficiency

- We will use 3 indicators:

$$\frac{100 - \text{drop-out rate}}{\text{public spending on education as a \% of GDP}}$$

$$\frac{100 - \text{illiteracy rate}}{\text{public spending on education as a \% of GDP}}$$

$$\frac{100 - \text{infant mortality rate}}{\text{public spending on education as a \% of GDP}}$$





# Measures of Efficiency

- Two notes:
  1. This are the two sectors that have the highest weight in terms of public budget throught OECD countires
  2. We usee 100-”...” to make sure that na higher indicator means higher efficiency



# The model

- In a previous paper we introduce an endogenous growth model with government quality as an input to production
- In that model Government has to decide whether it is going to spend its resources:
  1. in investment in a public capital
  2. in a consumption good

The first option allows governments to “produce” quality. Quality depends on an input that has to be accumulated.



# The model

- Framework of an exogenous growth model
- Government

(a)  $H_t = \theta \tau Y_t$   $\longrightarrow$   $H_t$  stands for government spending

(b)  $\dot{K}_{gt} + \delta_g K_{gt} = (1 - \theta) \tau Y_t$   $\longrightarrow$   $K_{gt}$  is public capital

(c)  $q_t = (K_{gt})^\psi$   $\longrightarrow$   $q_t$  stands for government quality

- Production

(d)  $Y_t = (K_{pt}^\alpha L_t^{1-\alpha})^\beta (H_t q_t)^{1-\beta}$



# Regression Results

- The relation we are going to test is the one between quality and public capital.
- We will estimate the following:

$$\ln q_t = \psi \ln \left( \frac{K_{gt}}{L_t} \right) + \mu_t$$



# Regression Results

	<i>logirpse</i>	<i>logdorpse</i>	<i>logmrihepu</i>
<i>n</i> – <i>R</i> <sup>2</sup>	24 – 0.064	59 – 0.044	44 – 0.151
<i>logKgpc</i>	-0.2224 (-1.53)	0.09949 (1.85) <sup>b</sup>	0.03552 (3.36) <sup>a</sup>
<i>n</i> – <i>R</i> <sup>2</sup>	23 – 0.9017	59 – 0.1703	43 – 0.3744
<i>logKgpc</i>	1.3601 (8.43) <sup>a</sup>	0.4679 (2.63) <sup>b</sup>	0.1197 (3.77) <sup>a</sup>
<i>loggdppc</i>	0.7467 (9.10) <sup>a</sup>	0.2559 (2.18) <sup>b</sup>	0.0376 (1.86) <sup>c</sup>
<i>ge</i>	0.0025 (0.45)	-0.0046 (-0.31)	0.0039 (1.16)



# Regression Results

- Exception made to infant mortality we have a positive significant relation between public capital and our measures of efficiency
- We introduce two controls: one to account for a country wealth and other to account for a government wealth
- The introduction of the controls not only didn't undermine the statistical relevance of public capital but also allowed public capital to be relevant in the case of the health sector.



# Regression Results

- To further test robustness we also tried some measures of quality used in the related literature.



# Regression Results

	<i>loglo</i>	<i>logCorrup</i>	<i>logBureau</i>	<i>logPR</i>
<i>n - R<sup>2</sup></i>	88 - 0.7695	88 - 0.7682	88 - 0.7710	126 - 0.1553
<i>logKgpc</i>	0.4371 (12.34) <sup>a</sup>	0.4191 (11.98) <sup>a</sup>	0.4115 (12.53) <sup>a</sup>	0.0443 (8.32) <sup>a</sup>
<i>n - R<sup>2</sup></i>	86 - 0.9957	86 - 0.9914	86 - 0.9850	106 - 0.4032
<i>logKgpc</i>	0.0051 (0.61)	0.0244 (2.86) <sup>a</sup>	0.0236 (2.0) <sup>b</sup>	-0.0483 (-2.38) <sup>b</sup>
<i>loggdppe</i>	0.1739 (34.99) <sup>a</sup>	0.1554 (27.50) <sup>a</sup>	0.1623 (23.99) <sup>a</sup>	0.0236 (2.43) <sup>b</sup>
<i>ge</i>	0.00004 (0.04)	0.0057 (3.52) <sup>a</sup>	0.0024 (1.32)	-0.0068 (-2.72) <sup>a</sup>





# Regression Results

As we can see results are basically the same.



# Conclusion

We did find no interesting and significant relation between the stock of public capital and government efficiency.

This relation survived the introduction of control variables and was valid whether we consider our measures of efficiency whether we use more qualitative measures of performance.

