Can a Government Enhance Long-Run Growth by Changing the Composition of Public Expenditure?

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Roadmap of Presentation

Motivation

Understanding link between gov't spending reallocations and growth is key due to:

- Ongoing fiscal austerity measures:
  - Limited scope to increase gov't spending in the years ahead.
- Population aging:
  - Expected increase in social spending over time (Clements et al., 2012a,b).
  - Other spending components may need to be adjusted.

Studies on gov't spending reallocations and growth are scarce, with some exceptions:

- HICs: Kneller et al. (1999), Gemmell et al. (2011).
- LICs/MICs: Devarajan et al. (1996), Gupta et al. (2005), Bose et al. (2007).
- All country groups: Easterly and Rebelo (1993).

Motivation Con't

Yet there are limitations in these studies:

- Limited cross-country coverage / limited sample periods.
- Compensating factor (to keep gov't spending unchanged) often not specified.
- Generally correlations rather than causality—mostly in earlier works.

This paper attempts to overcome some of these limitations by:

- Assembling a new and large dataset (56 countries) during 40 years (1970-2010).
- Specifying explicitly which is the compensating component in reallocations.
- Addressing causal effects using dynamic panel GMM estimators.

Summary of Results

From descriptive analysis:

- As income rises in developing countries in the years ahead:
  - Current expenditure to GDP ratio will likely increase.
  - Health and Social Protection spending will tend to rise—population aging.

From regression analysis:

- No strong associations of gov't spending reallocations and long-run growth.
- However, a set of clear findings arises:
  - Education spending is robustly associated with higher growth.
  - Capital spending appears to be positively associated with higher growth.
    - ★ Yet results are relatively less robust in this latter case.

The Dataset: Summary Statistics

- GFSM1986 and GFSM2001 bridged to construct a new and consistent dataset.
  - Not straightforward due to methodological changes.
- Large variety of economies: 56 countries—26 HICs; 16 MICs and 14 LICs.

Table 1 : Summary Statistics (5-year averages, in percent)

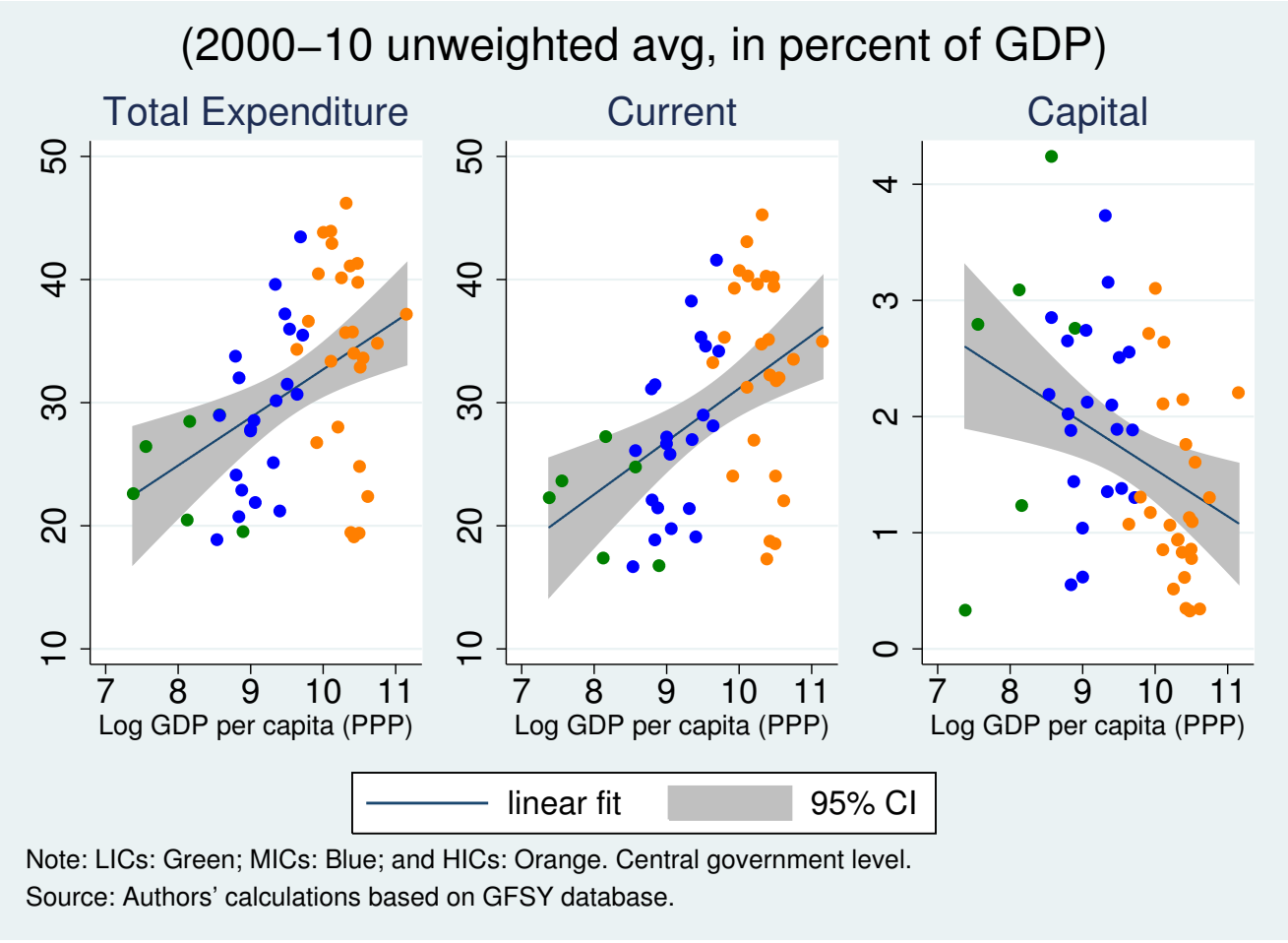
Variable	Mean LICs + MICs	Mean HICs
Economic classification		
Total Exp/GDP	27.02	35.20
Wages/Total Spend.	23.71	18.84
Current-no-Wages/Total Spend.	64.12	75.90
Capital/Total Spend.	11.66	4.84
Functional classification		
Defense/Total Spend.	10.52	8.71
Tracom/Total Spend.	6.20	5.28
Education/Total Spend.	13.24	9.82
Health/Total Spend.	6.84	9.58
Social Prot./Total Spend.	18.98	32.86

GOV'T SPENDING AND DEVELOPMENT

Current (and total) spending increases with income—i.e., Wagner's law.

- Conversely: capital spending decreases with income.

FIGURE 1 : Economic Composition of Spending and Development



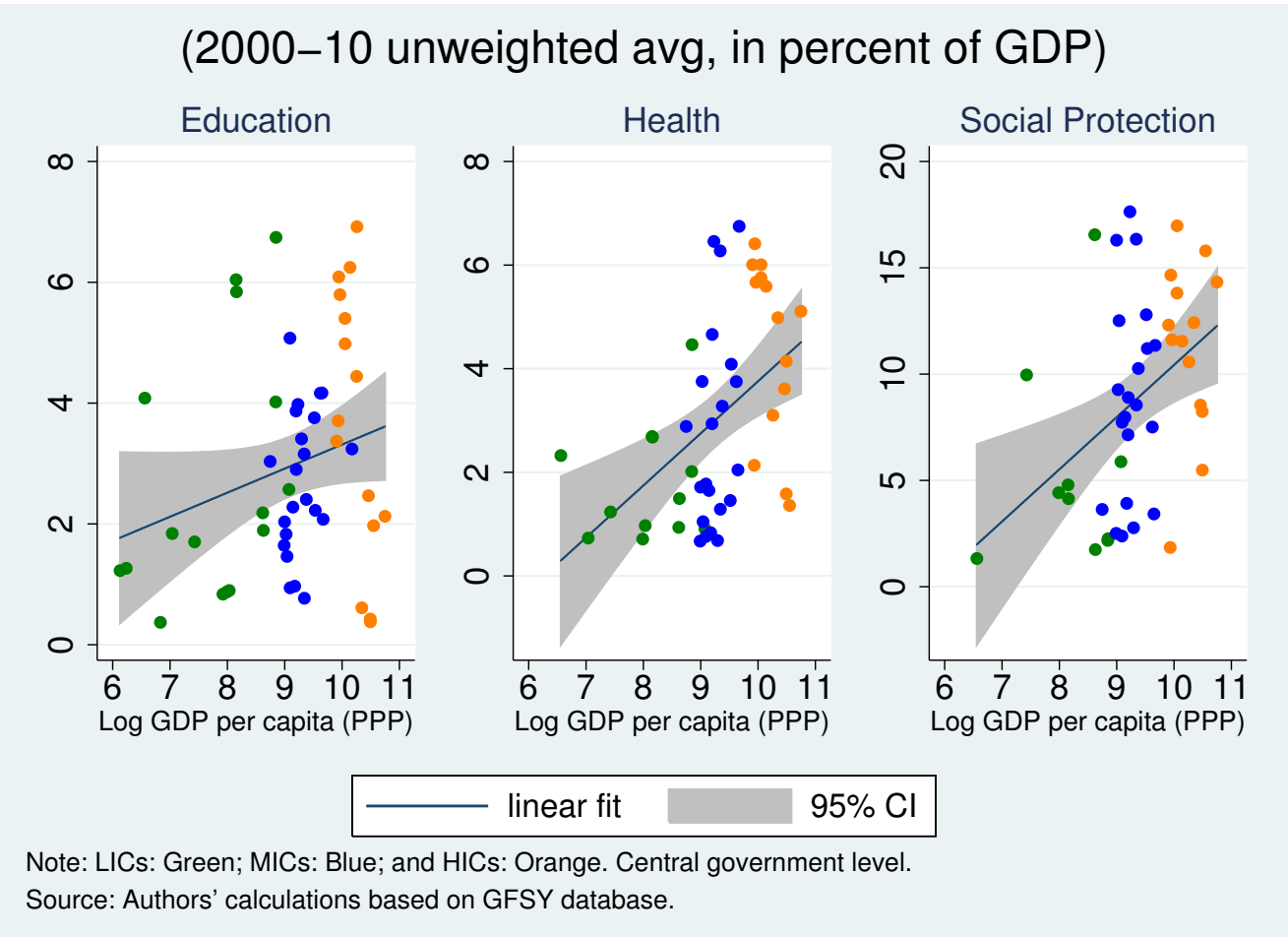
Note: LICs: Green; MICs: Blue; and HICs: Orange. Central government level.
Source: Authors' calculations based on GFSY database.

GOV'T SPENDING AND DEVELOPMENT CON'T

Social Protection and Health strongly rise as countries become richer.

- Less pronounced relation in the case of Public Education.

FIGURE 2 : Functional Composition of Spending and Development

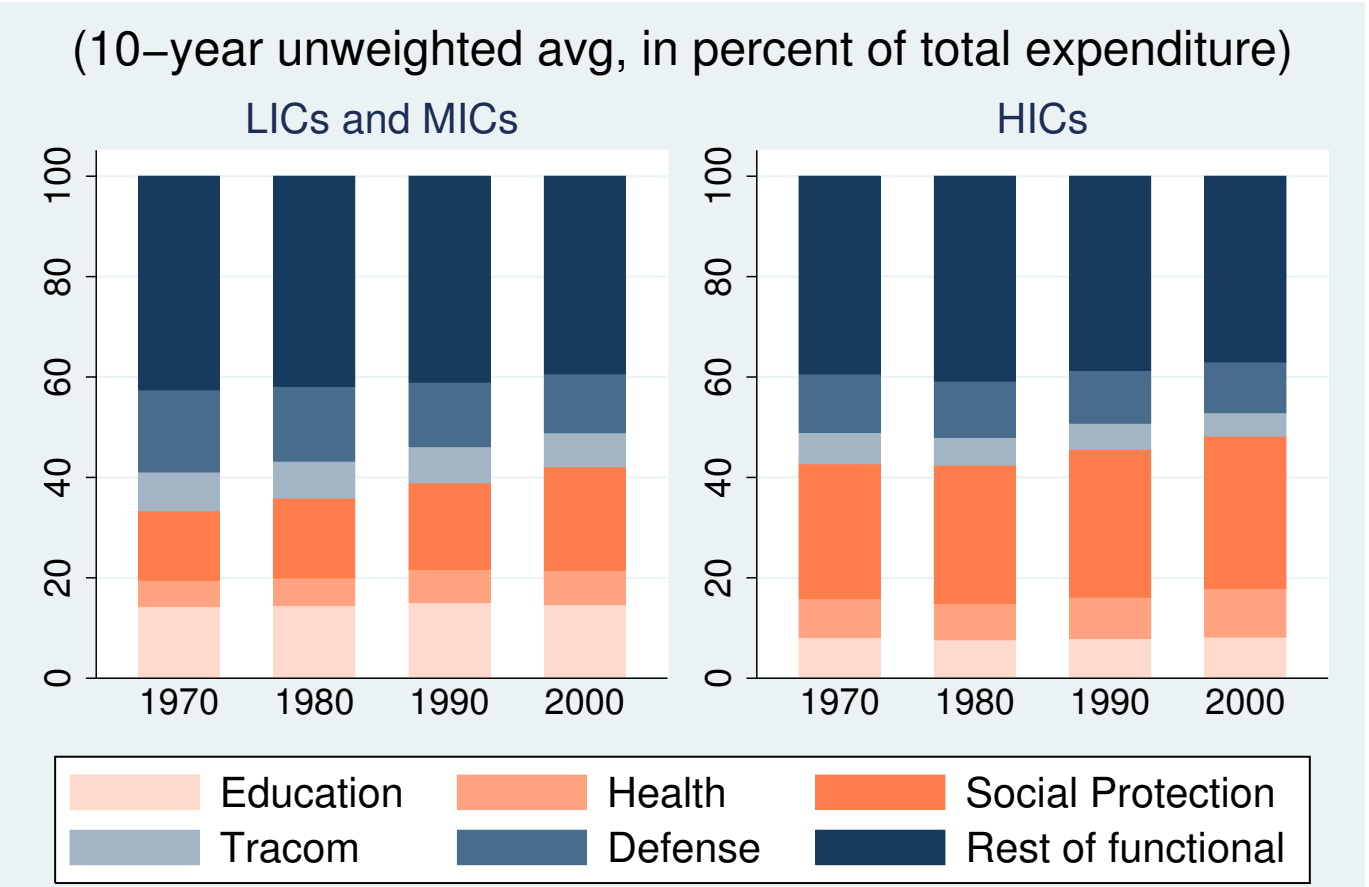


Note: LICs: Green; MICs: Blue; and HICs: Orange. Central government level.
Source: Authors' calculations based on GFSY database.

Trends in Functional Composition of Spending

Expenditure share of Health and Social Protection increases across time / groups.

Figure 3 : Expenditure Composition: Functional Class.



Note: Central government level.

Source: Authors' calculations based on GFSY database.

Econometric Analysis

Model's specification:

$$y_{i,t} - y_{i,t-1} = (\alpha - 1)\, y_{i,t-1} + \beta x_{i,t-1} + \delta \bar{e}_{i,t} + \gamma_m + \sum_{j=1}^{m-1} (\gamma_j - \gamma_m)\, \bar{s}_{i,j,t} + \sum_{j=1}^{k} \eta_j \bar{z}_{i,j,t} + \nu_i + \epsilon_{i,t}.$$

- $y_{i,t} - y_{i,t-1}$: GDP per capita growth between t and $t-1$.
- $x_{i,t-1}$ initial years of schooling.
- $\bar{e}_{i,t}$: share of total public expenditure to GDP.
- $\bar{s}_{i,j,t}$: share of expenditure component m in total expenditure.
- $\bar{z}_{i,j,t}$: other controls: e.g., trade openness; population growth.

Estimation approach:

- Dynamic panel GMM.

Summary of Results: Economic Classification

- Capital spending: positively associated with higher growth.
  - Limitation: results tend to be non-robust.

Table 2 : Reallocation of Gov't Spending and Growth: Economic Class.

	Increase in Capital Spending offset by: Current Spending
All	(+)
HICs	(+)***
LICs + MICs	(+)***

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

SUMMARY OF RESULTS: FUNCTIONAL CLASSIFICATION

- Education spending: robustly associated with higher growth in full sample.
  - Results tend to be stronger in HICs relative to LICs+MICs.

TABLE 3 : Reallocation of Gov't Spending and Growth: Functional Class.

	Increase in Education Spending offset by:				
	All the rest	Defense	Health	Soc. Prot.	Tracom
All	(+)*	(+)	(+)**	(+)**	(-)
HICs	(+)*	(+)	(+)**	(+)**	(+)
LICs + MICs	(+)	(+)	(-)	(+)	(+)

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

- Transport and Communication spending: results are not robust.
  - All: Tracom (+); non-significant.
  - HICs: Tracom (+); tends to be significant.
  - LICs + MICs: Tracom (+); non-significant.
  - Gupta et al. (2011): efficiency of public investment matters for growth.

Robustness Checks

Main results for full sample are robust to various checks:

- Lagged fiscal variables.
- Different development levels across countries.
- Additional explanatory variables.
- Central vs general gov't levels.

Final Remarks

- Limited associations of gov't spending reallocations and long-run growth.

- However, a number of exceptions arises in the case of:
  - Education spending: robustly associated with higher growth.
  - Capital spending: positively associated with higher growth.
    - ★ Yet results are relatively less robust in this latter case.

- Results should be taken with caution for various reasons:
  - Differences in the quality of spending are not incorporated.
    - ★ Recent works show role of public investment efficiency in explaining capital accumulation (Dabla-Norris et al. (2012)) and growth (Gupta et al. (2011)).
  - Growth should not be the only criteria to assess impact of gov't spending:
    - ★ Employment and inequality aspects should also be considered.

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