

Institutional causes, Macroeconomic Outcomes and Saving-investment Correlations

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Motivation

- **Feldstein and Horioka's puzzle:** The persistence of a high (and positive) saving-investment correlation even in presence high degrees of international capital mobility
- Interpretation: countries are forced to finance capital accumulation through national savings solely
- FH puzzle holds for different samples, time periods, aggregation techniques or estimation procedures (Coakley et al., 1998; Apergis et al., 2001)
- **What causes high and persistent correlations between domestic saving and domestic investment?**

Literature review

What causes high and persistent correlations between domestic saving and domestic investment?

- **Answer:** Country size, i.e. ability to influence conditions in the world capital market
- FH-test is a joint test of capital mobility and small country assumption. And, FH puzzle is due to high S-I correlations at the corporate level (Murphy, 1984)
- FH puzzle arises in a general equilibrium model with perfect mobility of financial and physical capital. And, larger countries have larger effects on the world interest rate (Baxter and Crucini, 1993)
- Extend FH model to allow data to be drawn from different country-size regimes. It confirms threshold effects of country-size on the saving-retention coefficient (Ho, 2003)

This paper

What causes high and persistent correlations between domestic saving and domestic investment?

- **Answer:** Institutions, i.e. humanly devised constraints that shape saving and investment decisions
- Some institutions tend to retain a large segment of national savings at home. And, these institutions tend to persist for long periods of time
- Example: In some countries saving institutions such as life insurance companies or pension funds are *legally* required to invest in local assets such as government bonds
- OECD frequently conducts a *Survey of investment regulation of pension funds* for both OECD and non-OECD countries

Findings

What causes high and persistent correlations between domestic saving and domestic investment?

- **Answer:** Institutions, i.e. humanly devised constraints that shape saving and investment decisions

- **Case study (South Africa):** We provide evidence that laws and regulations, inherited from the colonial ruling, led to persistent saving-investment correlations which are observable in *aggregate data*

- **Cross country study (60 former colonies):** We provide evidence that saving retention is higher for colonies that inherited “strong institutions” *à la* Acemoglu et al. (2001)

Case study (South Africa)

- Soon after the creation of the Union of South Africa (1910), the Parliament adopted the Public Debt Commissioners Act in 1911
 - Place under the control of a single authority the management of public trust funds. All investments of the PDC were in public sector stocks
- The PDC Act 1911 evolves to the Public Investment Commissioners Act 1984 and then the Public Investment Corporation Act 2005
 - More funds were put under the control of this institution. The investment restrictions were soften progressively, first to any local assets and then to ??
- Until today, the PIC is the sole manager of the GEPF

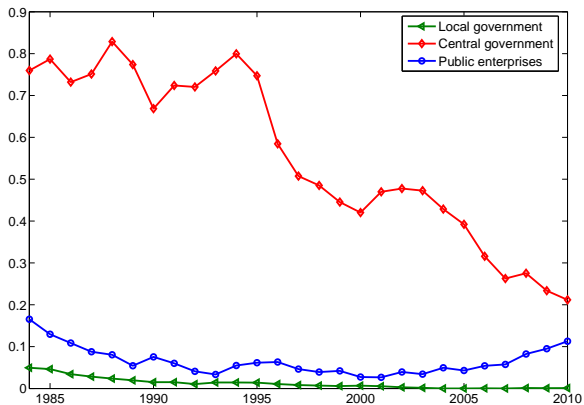


Figure: Asset allocation by the PIC (1984-2010)

Case study (South Africa): cont'd

- We estimate:

$$\Delta IR_t = \alpha + \beta \Delta SR_t + \gamma (SR_{t-1} - IR_{t-1}) + \delta SR_{t-1} + \varepsilon_t$$

where SR dynamics (β) jointly with LR relationship (α , γ and δ) between S and I rate are captured (Jansen, 1996; Jansen and Schulze, 1996)

- We decompose the coefficient β as follows:

$$\beta \equiv \beta_1 D_{(60-83)} + \beta_2 D_{(84-94)} + \beta_3 D_{(95-2009)}.$$

where D_i ($i = pre-, during-, post-embargo periods$) denote dummy variables that take one during subperiod i , and zero otherwise

- Data: Annual series of national saving, national investment and PIC investment ratios over the period 1960-2009 (source: SARB)

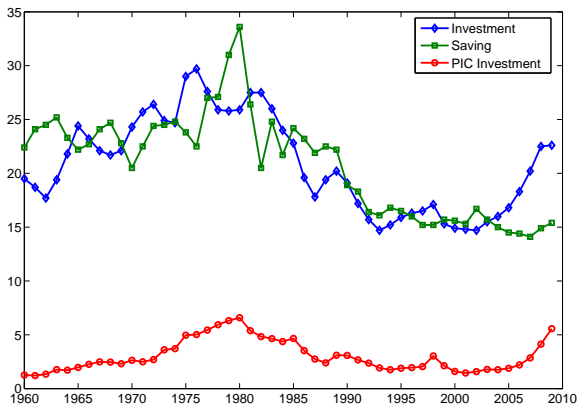


Figure: Domestic saving, investment and PIC investment ratios (1960-2009)

Table: Estimated coefficients

Dependent variable (ΔX_t) ^a	ΔIR_t		$\Delta(IR_t - IR_t^{PIC})$	
Constant	1.05	(1.02)	0.87	(0.92)
$D_{(60-83)}\Delta SR_t$	-0.24	(2.18)	-0.31	(3.14)
$D_{(84-94)}\Delta SR_t$	0.55	(2.26)	0.42	(2.01)
$D_{(95-2009)}\Delta SR_t$	-0.17	(0.28)	-0.35	(0.70)
$SR_{t-1} - X_{t-1}$	0.05	(0.76)	0.08	(1.13)
SR_{t-1}	-0.04	(0.89)	-0.05	(1.00)
\hat{R}_2	0.13		0.24	
DW	1.26		1.44	

Note: ^a $\Delta X_t = \alpha + \beta\Delta SR_t + \gamma(SR_{t-1} - X_{t-1}) + \delta SR_{t-1} + \varepsilon_t$
 where $\beta = \beta_1 D_{(60-83)} + \beta_2 D_{(84-94)} + \beta_3 D_{(95-2009)}$
 t-statistics in parentheses.

Case study (South Africa)

- In *Column 1*, the coefficient β falls as the degree of capital mobility is increased
- In *Column 2*, once we exclude investment made by the PIC, the statistical significance of the coefficient β increased from 2.18 to 3.14 during the pre-embargo period
- In *Column 2*, during financial autarky the correlation between investment and saving falls by as much as 24% but stays positive and statistically significant
- An important explanation of saving-investment correlations proceeds through the activities of the Public Investment Corporation. We conclude that the laws and regulations governing institutional investors' assets in South Africa have been powerful enough to be observable in aggregate data