

# Domestic Savings and International Capital Flows

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The Economic Journal, June 1980

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# Introduction

- The 2 Views of International Capital mobility - aimed to show the relationship between S and I,
- Determinants of Optimal saving Policy  
In order to know the optimal rate of saving and the incidence of tax changes we consider how mobile the supply of capital is, whether capital flows to equalize yields to investors and whether savings that originate from a country remain to be invested there.
- 1. Closed economy
  - the national returns on additional savings is the domestic marginal product of capital
  - increasing saving rates implies postponing consumption
  - nation receives both after tax yield and the tax revenue
  - What should influence the national saving policy is thus the pretax marginal product of capital.

# Introduction

- 2. Open Economy

- capital is mobile and additional savings will leave the country(capital exporter)
- yield to the home country on the additional savings is only the net of tax return received by the investors and not the pre tax marginal product of capital.

After-tax real yields are about 50% of the pretax yield= optimal saving policy is likely to depend on whether the economy is closed or open(perfect world capital markets)

## Analysis of Tax Incidence with respect to capital mobility

- - A closed economy has fixed capital stock
- -tax on income of capital in production is borne by owners of capital
- Capital mobility implies burden shifting to labor and foreign capital owners.  
corporate income tax borne less by capital
- Labor income tax shifting of domestic owners of capital is difficult

# Introduction

- Does capital flow to equate net of taxes?
- possible for short term securities but not long term portfolio capital or direct investment because for long term investments-(unobserved), but skeptical to equate net of taxes because
- Risks and uncertainties of foreign markets
- Official restrictions on capital export and future capital export control
- Fear of changes in tax regimes in foreign countries
- Institutional rigidities in domestic country

# Introduction

- Capital does not maximize investors net of tax return.
- there exist international differences in tax rules and interaction of foreign and domestic taxation → net return maximization is different if taxes did not exist.

**Without taxes** → gross returns will be the same in all countries and investors indifference on where to place funds.

**With taxes** → investors should specialize their investment in a country different from their own.

Since this specialization is absent, then there exist restrictions on capital movement to maximize each investors net return.

Direct investment in foreign market is associated with implementing strategies, exploiting production knowledge and overcoming trade restrictions and not pursuit for profit → reason why countries are both exporters and importers of capital.

# The empirical approach

- Data from 16 OECD countries (in the baseline specification)
- 1960 – 1974, yearly observed
- Gross domestic saving and investment rates
- Both on average around 25% of GDP, standard deviation 0.045. Relatively stable over time
- Use averages over 5 and 15 years horizon

- Basic equation: 
$$\left(\frac{I}{Y}\right)_i = \alpha + \beta \left(\frac{S}{Y}\right)_i$$

# The empirical approach (cont 'd)

Table 2

*The Relation between Domestic Saving Ratios and Domestic Investment Ratios*

Sample period	Gross saving and investment			Net saving and investment		
	Constant	$S/Y$	$R^2$	Constant	$S/Y$	$R^2$
1960-74	0.035 (0.018)	0.887 (0.074)	0.91	0.017 (0.014)	0.938 (0.091)	0.87
1960-64	0.029 (0.015)	0.909 (0.060)	0.94	0.017 (0.011)	0.936 (0.072)	0.91
1965-69	0.039 (0.025)	0.872 (0.101)	0.83	0.022 (0.020)	0.908 (0.133)	0.75
1970-74	0.039 (0.024)	0.871 (0.092)	0.85	0.018 (0.018)	0.932 (0.107)	0.83

Parameter estimates refer to equation (1) in the text. All equations are based on observations for 16 countries, with the variables averaged for the sample period indicated. Standard errors are shown in parentheses.

## The empirical approach (cont 'd)

- Result: reject hypothesis of perfect world capital mobility  $\Rightarrow$  incremental saving remains in the domestic country
- Net specification: measurement error is likely  $\Rightarrow$  coefficients are biased towards unity.
- Consistent estimate can be obtained by IV approach, using gross savings rate as instrument  $\Rightarrow$  results remain unchanged



## The empirical approach (cont 'd)

- Guess: there is a common impact of a third variable on savings and investments: population growth (life cycle theory of savings). But the results do not change when growth is included in the model.
- No further checks on this issue.
- Another robustness check implemented on the degree of openness:  
$$\left(\frac{I}{Y}\right)_i = \alpha + (\beta_0 + \beta_1 X_i) \left(\frac{S}{Y}\right)_i$$
- Results stable

# The empirical approach (cont 'd)

Disaggregation into household, corporate and government

$$\left(\frac{I}{Y}\right)_i = \alpha + \beta_H \left(\frac{SH}{Y}\right)_i + \beta_C \left(\frac{SC}{Y}\right)_i + \beta_G \left(\frac{SG}{Y}\right)_i$$

- No significant difference between the contribution of different sectors to total investment.
- Corporate investment is most responsive to corporate saving ( $\Rightarrow$  institutional rigidities or portfolio preferences)
- No evidence of coefficients significantly different from unity

# The empirical approach (cont 'd)

Table 3

*Relations between the Components of Saving and Investment*

Investment	Disaggregated saving					Aggregate saving		
	Constant	$\frac{SH}{Y}$	$\frac{SC}{Y}$	$\frac{SG}{Y}$	$\bar{R}^2$	Constant	$\frac{S}{Y}$	$\bar{R}^2$
Total, gross	0.031 (0.015)	1.172 (0.121)	0.548 (0.153)	1.120 (0.112)	0.975	0.015 (0.020)	0.957 (0.078)	0.951
Total, net	0.004 (0.012)	0.826 (0.141)	1.195 (0.571)	1.103 (0.175)	0.926	0.011 (0.015)	0.952 (0.093)	0.929
Private, gross	-0.003 (0.016)	1.172 (0.127)	0.577 (0.161)	0.878 (0.118)	0.969	-0.016 (0.019)	0.907 (0.071)	0.954
Private, net	-0.013 (0.020)	0.739 (0.143)	1.041 (0.581)	0.869 (0.178)	0.900	-0.008 (0.014)	0.833 (0.084)	0.924
Corporate, gross	-0.049 (0.027)	0.231 (0.213)	1.849 (0.275)	0.071 (0.197)	0.911	-0.009 (0.053)	0.726 (0.200)	0.603
Corporate, net	0.006 (0.022)	0.662 (0.167)	1.019 (0.656)	0.232 (0.206)	0.773	0.010 (0.021)	0.574 (0.126)	0.710

All equations correspond to data for nine countries for the period 1961-74. Gross investment equations use gross saving measures; net investment equations use net saving measures. Standard errors are shown in parentheses.

# Critics and conclusions

- Sample size too small for testing
- „real“ time series approach would be useful

## Conclusions

- true nature of world capital markets.
- appropriate to study income distribution and tax incidence excluding capital mobility
- national returns on domestic saving is equal to pretax domestic marginal product of capital