

Topic for Today

- 1.) Investment Risk + the Current Account
- Ventura (2002)

Gourrichas + Rey (JPE, 2007)

- CA = Change in value of net foreign assets

Change in value has two parts: 1.) Change in quantity
2.) Change in price
(capital gain & losses)

- CA data recorded at historical cost
- Many countries face ex. rate exposure. Currency composition of assets & liabilities differ
- In U.S., nearly 100% of foreign liabilities are in \$. 70% of foreign assets are in for. currency.

$$\frac{D}{Y} = \frac{L - (A^s + e A^{fc})}{Y} \approx 1.0 - .75 \approx .25$$

$$\frac{dD}{Y} = -\frac{de}{e} \cdot \frac{eA}{Y} \quad \frac{eA}{Y} \approx \frac{\text{Total Assets}}{Y} \cdot \frac{\text{For. Curr. Assets}}{\text{Total Assets}}$$
$$= (.75)(.70) \approx .525$$

$\Rightarrow$ 10% \$ depreciation $\Rightarrow$ 5.25% capital gain
(as share of GDP!)

Budget Constraint

$$NA_{t+1} = R_{t+1} (NA_t + NX_t)$$

If $R = \frac{1}{1+r}$ is constant,

$$NA_t = - \sum_{j=0}^{\infty} \left(\frac{1}{1+r}\right)^j NX_{t+j}$$

} foreign debt
⇒ future trade surpluses.

$$NA_t = A_t - L_t$$

$$R_t = 1/\mu_1 R_t^* - 1/\mu_2 R_t^*$$

After log-linearization + detrending,

$$na_t = - E_t \sum_{j=1}^{\infty} \rho^j (r_{t+j} + \Delta nx_{t+j})$$

} Apply Campbell-Shiller

$$r_t = 1/\mu_1 r_t^* - 1/\mu_2 r_t^*$$

Findings

1.) ~~var(na_t)~~ var(r_t) accounts for 27% of var(na_t)

2.) na_t predicts future r_t.

$$\Delta e_{t+1} = \alpha + \beta \cdot na_t + \gamma z_t + \varepsilon_{t+1}$$

$\beta = \frac{-0.09}{(0.02)} \quad \bar{R}^2 = .11$

Investment Risk & the Current Account

- Our model has ignored investment risk. We've assumed that the returns to both domestic capital investment and foreign bonds are known with certainty. As a result, we've ignored one of the main determinants of investment, i.e., portfolio diversification.
- Without investment risk, investment in a small open economy is entirely determined by the domestic production function & the world interest rate (we called this the "Separation Theorem"). In particular, the overall wealth of the economy is irrelevant. This means that the marginal unit of saving goes entirely into foreign bonds.

$$W = K + F$$

$$S = \Delta W$$

$$\begin{aligned} CA = \Delta F &= \Delta W - \Delta K \\ &= S - I(r^*) \end{aligned}$$

$\Rightarrow$ a marginal change in S leads to a 1-for-1 change in CA

• Ventura (2002) shows that under certain conditions (i.e., weakly diminishing returns + high investment risk) that domestic residents will choose their portfolios so as to keep its composition between domestic + foreign assets constant. This seems to be more consistent with the data.

• What are the empirical implications of this hypothesis?

$$\frac{\Delta(K/W)}{\Delta W} = 0 \Rightarrow \frac{\Delta K \cdot W - \Delta W \cdot K}{W^2} = 0$$

$$\Rightarrow \frac{\Delta K}{W} = \frac{\Delta W \cdot K}{W^2}$$

$$\Rightarrow \frac{\Delta K}{\Delta W} = K/W = 1 - F/W$$

• In words, marginal investment = average investment

- What does this portfolio rule imply about how CA responds to changes in S ?

$$CA = \Delta F$$

$$= \Delta W - \Delta K$$

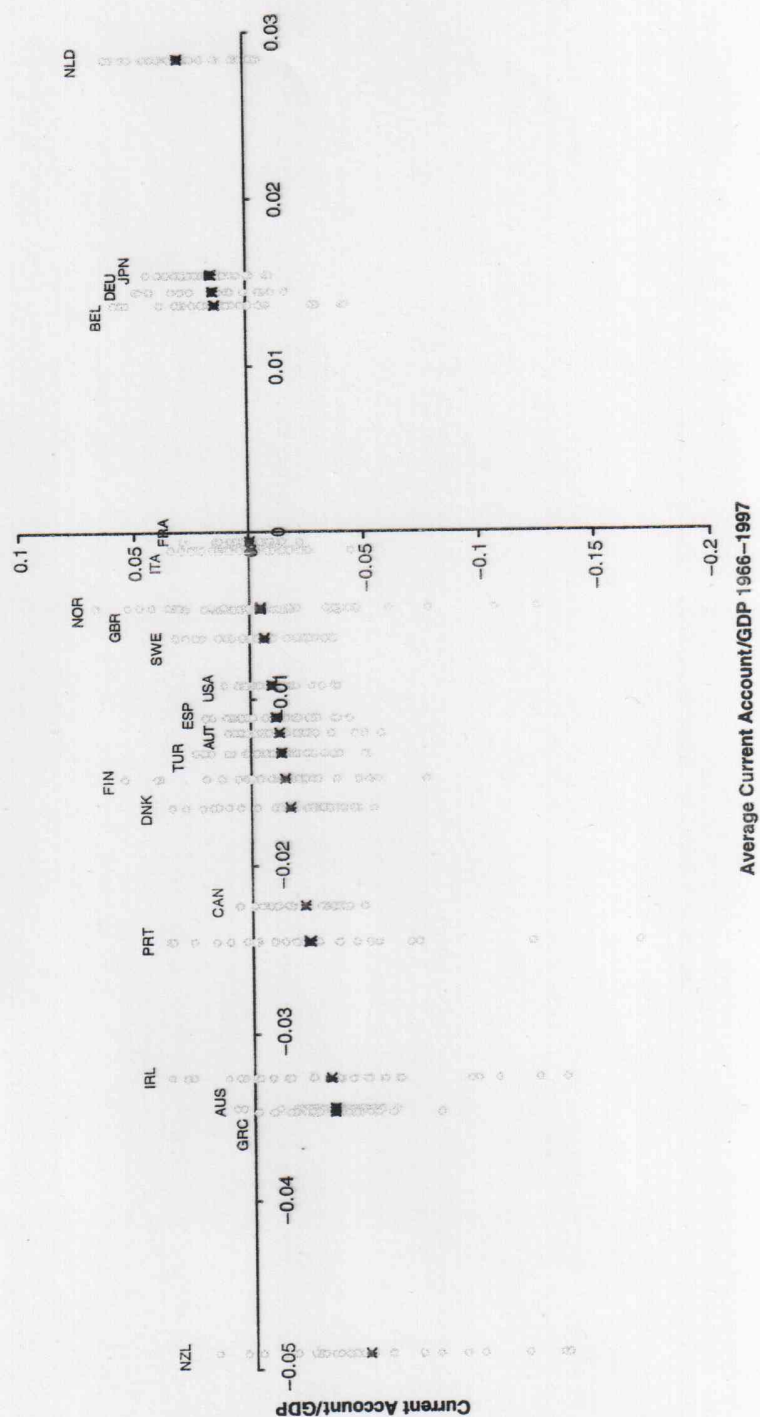
$$= [1 - (1 - F_W)] \Delta W \quad \text{using the above portfolio rule}$$

$$\Rightarrow \boxed{CA = F_W \cdot S}$$

$S \uparrow \Rightarrow CA \uparrow$ in creditor countries

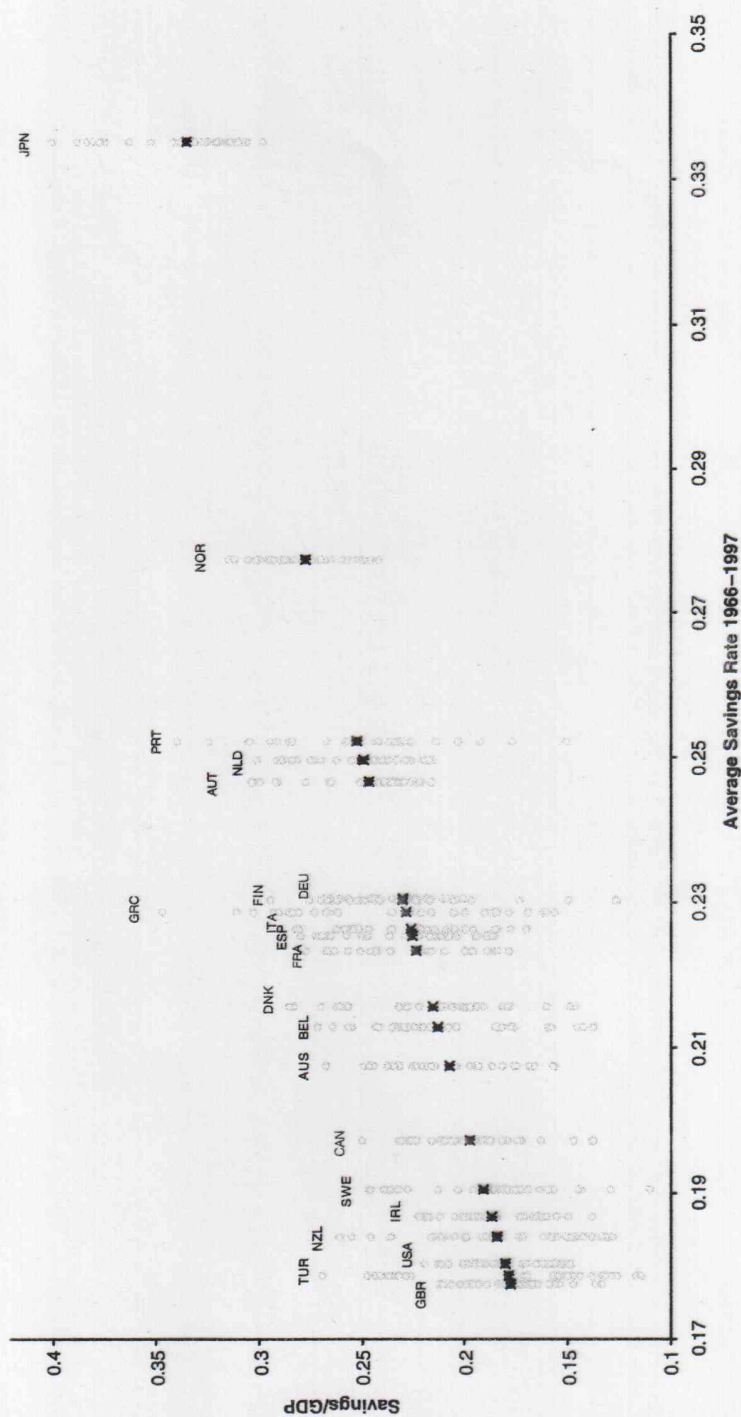
$S \uparrow \Rightarrow CA \downarrow$ in debtor countries

FIGURE 1
Current Accounts: Comparing Between and Within Countries



Notes:
Unfilled circles are Current Account/GDP for each year. Solid squares represent country-average Current Account/GDP over the period 1966-1997 (connecting the squares hence produces a 45-degree line). The X-axis shows the dispersion in Current Account/GDP between countries. The Y-axis indicates dispersion in Current Account/GDP within countries.

FIGURE 2
Saving: Comparing Between and Within Countries



Notes:

Unfilled circles are savings rates for each year. Solid squares represent country-average savings rates over the period 1966-1997 (connecting the squares hence produces a 45-degree line). The X-axis shows the dispersion in savings rates between countries. The Y-axis indicates the dispersion in savings rates within countries.

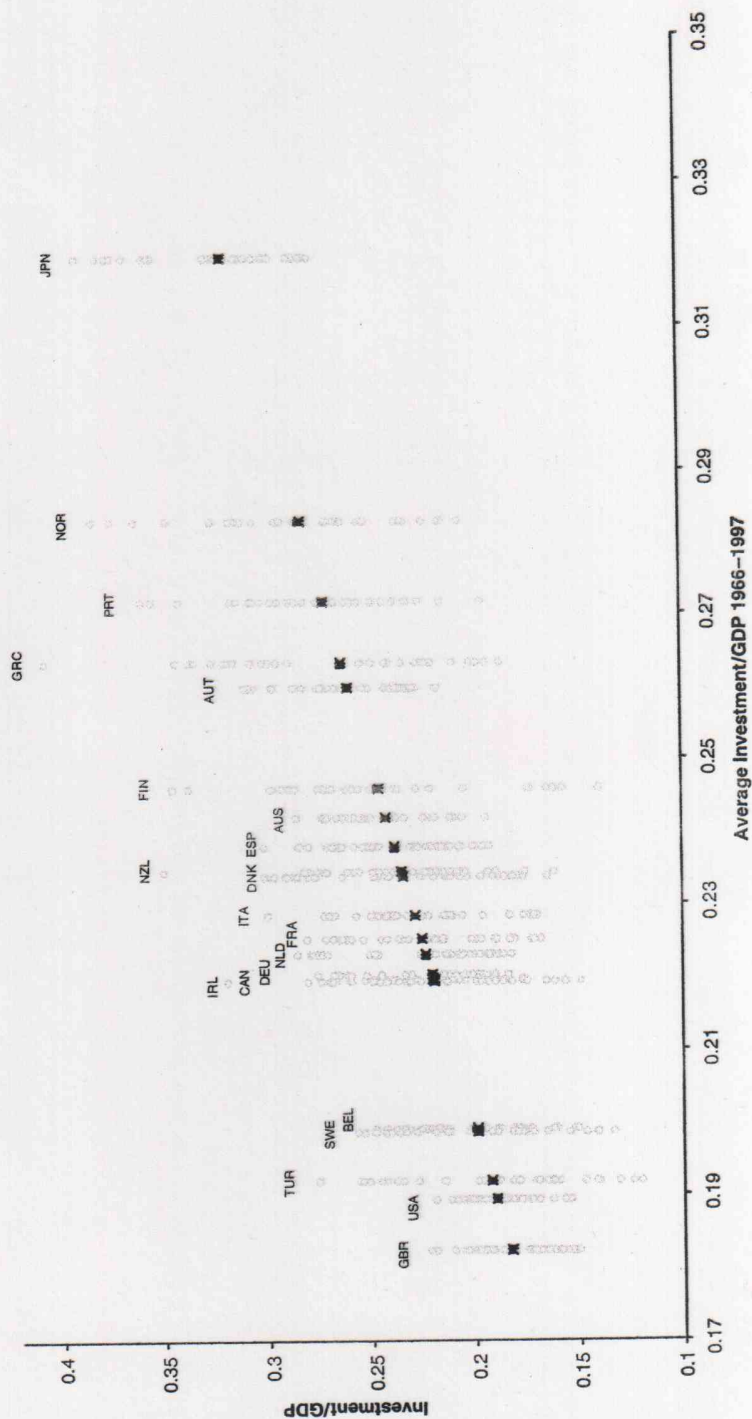
$$W = K + F$$

$$CA = \Delta F$$

$$S = \Delta W$$

$$CA = S - I$$

FIGURE 4
Investment: Comparing Between and Within Countries



Notes:
Unfilled circles are investment rates for each year. Solid squares represent country-average investment rates over the period 1966-1997 (connecting the squares hence produces a 45-degree line). The X-axis shows the dispersion in investment rates between countries. The Y-axis indicates the dispersion in investment rates within countries.

FIGURE 3
Choosing the Country Portfolio to Maximise Return

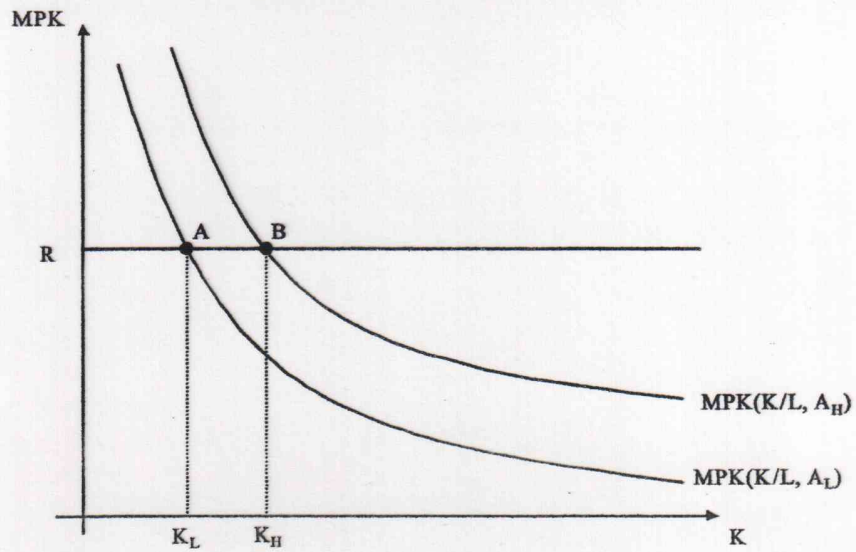
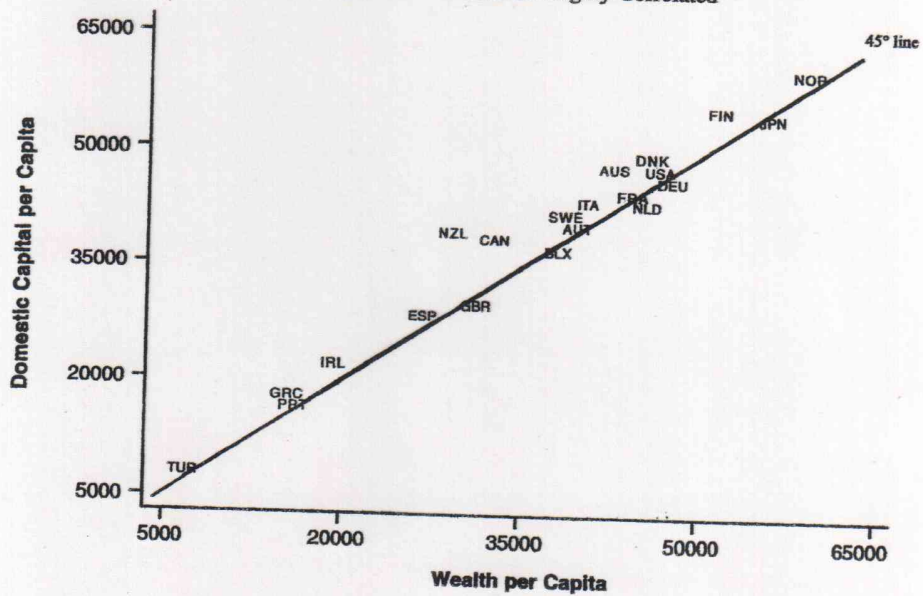


FIGURE 6
Domestic Capital and Wealth are Highly Correlated



$$CA_{ct} = \alpha + \beta S_{ct} + \text{controls}$$

TABLE 1
Saving and the Current Account

	<i>Pooled Regression (1)</i>	<i>Between Regression (2)</i>	<i>Within Regression (3)</i>	<i>Pooled Regression (4)</i>	<i>Between Regression (5)</i>	<i>Within Regression (6)</i>
Saving/GDP	0.214 (0.023)	0.221 (0.074)	0.203 (0.030)	0.242 (0.025)	0.220 (0.100)	0.343 (0.043)
Productivity growth				-0.048 (0.053)	-0.269 (0.648)	-0.044 (0.042)
Population growth				-0.789 (0.182)	-0.829 (0.932)	-0.631 (0.246)
R ²	0.116	0.194	0.070	0.280	0.240	0.317
Number of observations	640	21	640	638	21	638
P-value for null hypothesis that coefficient on savings = 1	0.000	0.000	0.000	0.000	0.000	0.000

Notes:

Standard errors are corrected for heteroscedasticity. The between regressions report the results using twenty-one country-averages of all variables, and including a constant. The within regressions report results using country fixed effects. Columns (4) and (6) also include year effects. Constants, country effects and year effects are not reported.

TABLE 2
Investment and the Current Account

	<i>Pooled Regression (1)</i>	<i>Between Regression (2)</i>	<i>Within Regression (3)</i>	<i>Pooled Regression (4)</i>	<i>Between Regression (5)</i>	<i>Within Regression (6)</i>
Investment/GDP	-0.188 (0.030)	-0.030 (0.133)	-0.327 (0.033)	-0.207 (0.034)	-0.097 (0.168)	-0.432 (0.045)
Productivity growth				0.171 (0.051)	0.307 (0.725)	0.169 (0.050)
Population growth				-1.039 (0.163)	-1.164 (0.619)	-0.338 (0.226)
R ²	0.086	0.003	0.215	0.247	0.124	0.411
Number of observations	640	21	640	638	21	638
P-value for null hypothesis that coefficient on investment = -1	0.000	0.000	0.000	0.000	0.000	0.000

Notes:

Standard errors are corrected for heteroscedasticity. The between regressions report the results using twenty-one country-averages of all variables, and including a constant. The within regressions report results using country fixed effects. Columns (4) and (6) also include year effects. Constants, country effects and year effects are not reported.

FIGURE 8
Choosing the Country Portfolio to Maximise Return and Minimise Risk

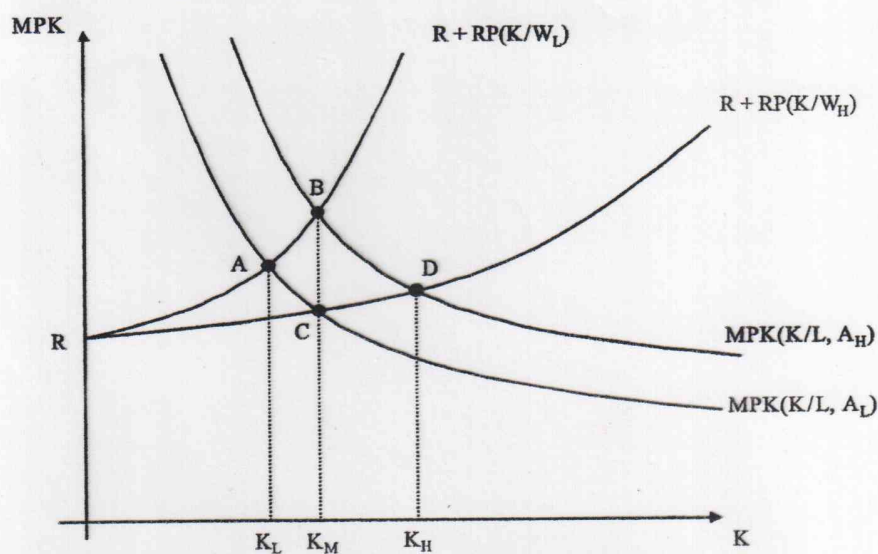


TABLE 3
Testing the New Rule

	Pooled Regression (1)	Between Regression (2)	Within Regression (3)	Pooled Regression (4)	Between Regression (5)	Within Regression (6)
Share of NFA × Saving/GNP	0.939 (0.077)	1.010 (0.144)	0.453 (0.144)	0.915 (0.071)	1.031 (0.143)	0.443 (0.134)
Productivity growth				0.072 (0.048)	-0.165 (0.227)	0.077 (0.046)
Population growth				-0.346 (0.140)	-0.011 (0.341)	-0.633 (0.234)
R ²	0.302	0.816	0.026	0.428	0.822	0.231
Number of observations	611	21	611	611	21	611
P-value for null hypothesis that coefficient on savings × foreign assets = 1	0.427	0.945	0.000	0.234	0.832	0.000

Notes:

Standard errors are corrected for heteroscedasticity. The between regressions report the results using twenty-one country-averages of all variables, and including a constant. The within regressions report results using country fixed effects. Columns (4) and (6) also include year effects. Constants, country effects and year effects are not reported.