Topics for Today

1.) International Capital Market Integration
   - Measuring the Gains from Intl. Capital Mobility

2.) The Feldstein-Horioka Puzzle
   - Caveats to the Feldstein-Horioka conclusion

3.) Covered Interest Parity

Measuring Gains From Intl. Capital Mobility

There are 2 basic approaches to measuring the gains from intl. financial integration, one looks at prices, and the other looks at quantities

Price-based measures look at correlations in asset-returns across countries, and then ask whether there are gains to diversifying internationally. The gains are usually quantified using the famous CAPM asset pricing model.

Quantity-based measures either look at the correlations within countries between saving & investment rates, or they look at international consumption correlations.

Consumption-based measures have the advantage of being most directly related to welfare, but have the disadvantage of relying on poorly measured data.

Both approaches suggest there are substantial (unrealized) gains from further intl. financial market integration.

Unfortunately, both approaches suffer from some severe drawbacks:

1.) Price/CAPM approaches tend to predict that consumption is way more volatile than it really is.

2.) Quantity/Macro-based measures tend to predict that asset prices are way less volatile than they really are

WANTED: A theory that can explain both smooth consumption and volatile asset prices!

Consumption-based measures at least provide some clues as to why we don't see more international diversification.

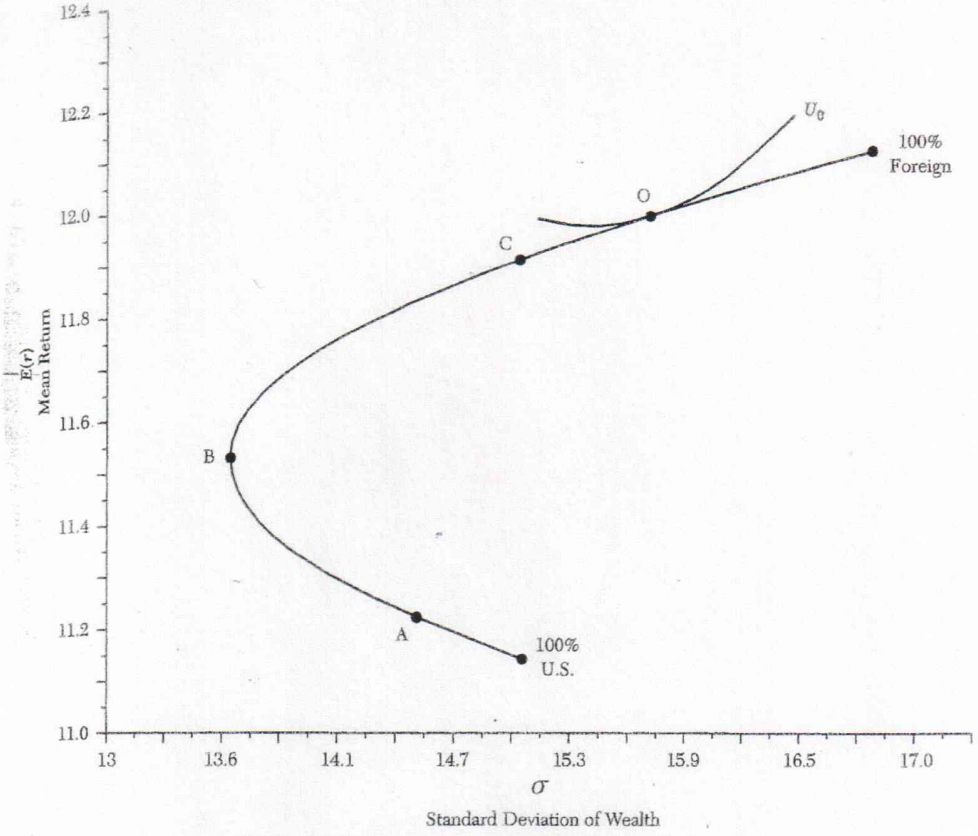
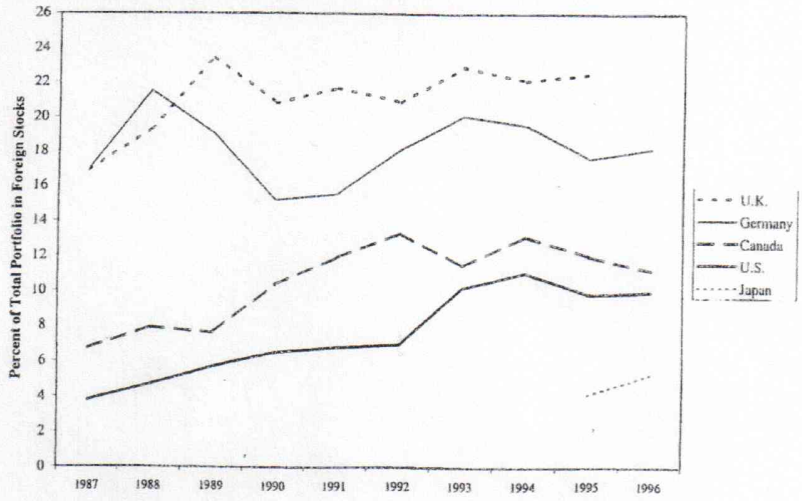


Figure 1. Risk Return Trade-Off Portfolios of U.S. and Foreign Mutual Funds

Figure 2 HOME BIAS IN EQUITY PORTFOLIOS: 1987–1996



From Tesar and Werner (1998)

Table 5.1
Consumption and Output: Correlations between Domestic and World Growth Rates, 1973–92

Country	Corr $(\hat{c}, \hat{c}^w)$	Corr $(\hat{y}, \hat{y}^w)$
Canada	0.56	0.70
France	0.45	0.60
Germany	0.63	0.70
Italy	0.27	0.51
Japan	0.38	0.46
United Kingdom	0.63	0.62
United States	0.52	0.68
OECD average	0.43	0.52
Developing country average	−0.10	0.05

Note: The numbers Corr$(\hat{c}, \hat{c}^w)$ and Corr$(\hat{y}, \hat{y}^w)$ are the simple correlation coefficients between the annual change in the natural logarithm of a country's real per capita consumption (or output) and the annual change in the natural logarithm of the rest of the world's real per capita consumption (or output), with the "world" defined as the 35 benchmark countries in the Penn World Table (version 5.6). Average correlations are population-weighted averages of individual country correlations. The OECD average excludes Mexico.

Consumption Home Bias

McCallum (AER, 1995)

$$\log(T_{ij}) = \text{controls} + \delta \cdot \text{Dummy}$$

controls: distance y_i, y_j

Dummy: $= 1$ for interprovincial

$= 0$ for prov-to-state

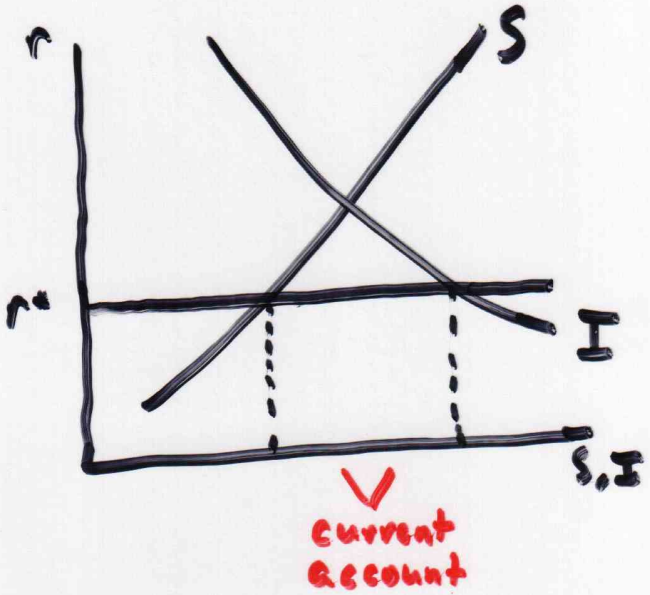
$\hat{\delta} \approx 3.1$

$\Rightarrow$ Ceteris Paribus, trade is 20 times higher between provinces than between provinces + states!

$(e^{3.1} \approx 20)$

The Feldstein-Horioka Puzzle

- The basic logic behind the FH puzzle follows from the 'separation theorem' and our S-I graph:



- Since CA = S - I, and since r is exogenous for small open economies, FH argued that if the factors that shift S are independent from the factors that shift I, there should be little observed correlation between S + I within small open economies. Domestic savers can invest in countries with high rates of return, while domestic investors can raise funds by borrowing from countries with lots of saving.

- To check this, they ran the following cross-sectional regression:

$$I/Y = \alpha + \beta\, S/Y + \varepsilon$$

(ε: error term)

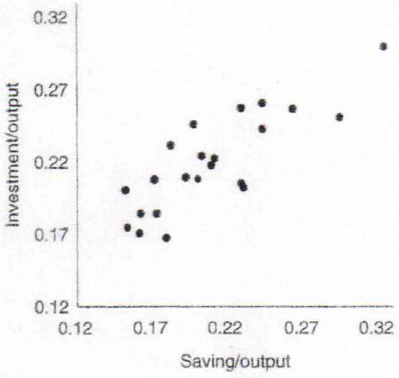


Figure 3.4
Industrial-country saving and investment rates, 1982–91

$$I/Y = 0.09 + 0.62 S/Y, \qquad R^2 = 0.69 .$$
$$(0.02)\ \ (0.09)$$

Table 2 FELDSTEIN–HORIOKA REGRESSIONS, $I/Y = \alpha + \beta\, NS/Y + \epsilon$, 1990–1997[a]

	No. of obs.	α	β	R^2
All countries[b]	56	0.15 (0.02)	0.41 (0.08)	0.33
Countries with GNP/cap. > 1000	48	0.13 (0.02)	0.48 (0.09)	0.39
Countries with GNP/cap. > 2000	41	0.07 (0.02)	0.70 (0.09)	0.62
OECD countries[c]	24	0.08 (0.02)	0.60 (0.09)	0.68

[a]OLS regressions. Standard errors in parentheses.
[b]Israel is excluded from all regressions in this table. If Israel is added to the samples of size (56, 48, 41), the estimates of β are (0.39, 0.45, 0.63).
[c]If one adds Korea to the OECD sample, the estimate for β rises to 0.76. Korea is included in the larger samples.

Caveats to the Feldstein-Horioka Conclusion

1.) Shocks may shift S and I simultaneously.
(e.g., productivity shocks).

2.) Global Shocks

3.) Large Country Effects
- Changes in S or I in large countries cause world interest rate to change, which then causes I or S to change too.

4.) Endogenous Policy Response to CA
- Policy may prevent 'excessive' CA imbalances.

5.) Investment Risk / Portfolio Diversification
- Breakdown of 'Separation Theorem'

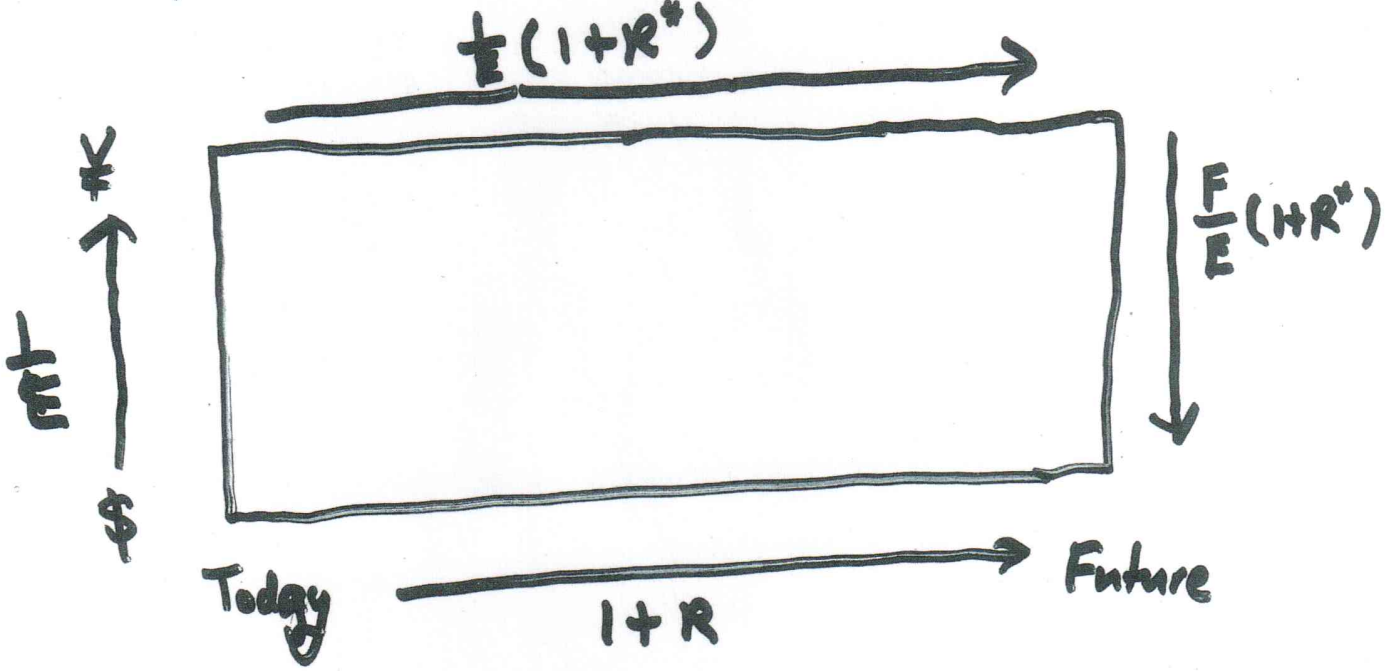
Covered Interest Parity

E_t : spot rate at time t ($/¥)

F_t : forward rate at t ($/¥)

R_t : U.S. (nominal) interest rate

R^*_t : Japanese (nominal) interest rate



There are 2 ways of getting future $

1.) Invest in U.S. $(1+R)$

2.) Buy yen, invest in Japan, sell the ¥ forward

$\frac{F}{E}(1+R^*)$

To prevent arbitrage possibilities, these 2 strategies must be equivalent.

$$\frac{F}{E}(1+R^*) = 1+R$$

→ Covered int rate pari

or, $F = E\left(\frac{1+R}{1+R^*}\right)$ } Determination of forward rate

↘ Divide by $1+R^*$, subtract 1 from both sides

$$\frac{F-E}{E} = \frac{R-R^*}{1+R^*} \approx R-R^*$$

↓

Covered Interest Parity

$\frac{F-E}{E}$ = "forward discount of \$"

Swap: Combo of spot + forward

Buy ¥ now and simultaneously sell ¥ forward.