Lecture V:

The Current Account

The Current Account

- We have seen from our very first class that *inter-temporal* trade allows C to be smoothed over time.

- We shall now consider again a national economy with a representative agent (household) without investment and without government (we will introduce both later).

- In this case, the relevant inter-temporal trade is that between residents and foreigners.

- That is, there is the possibility of ***international*** borrowing and lending.

The Current Account

- To fix ideas, consider the simple two period model of such an endownment economy.

- Let the country's (homogenous) population have size of 1 (just a convenient normalization), so $c_i = C$ and $y_i = Y$.

- National (per capita) consumption (C) is then subject to the following lifetime budget constraint (assuming B_0=0):

$$C_1 + \frac{C_2}{(1+r)} = Y_1 + \frac{Y_2}{(1+r)} \qquad (5.1)$$

The Current Account

- Combining (5.1) with the Euler equation and assuming that $\beta = \frac{1}{1+r} = \frac{1}{R}$, R fixed, consumption will be flat and given by:

$$\bar{C}_{1,2} = \frac{(1+r)Y_1 + Y_2}{2+r} = \frac{RY_1 + Y_2}{1+R} \qquad (5.2)$$

- Now assume that $Y_1 < Y_2$.

- In this case, the country will borrow $\bar{C} - Y_1$ from foreigners on date 1 and will repay $(1+r)(\bar{C} - Y_1)$.

- So, if IBC holds, then $Y_2 = C_2 + (1+r)(\bar{C} - Y_1)$, with $C_2 = \bar{C}$.

The Current Account

The country's current account is then:

<u>Period 1</u>: $Y_1 - \bar{C} < 0$, i.e., a *deficit*.

<u>Period 2</u>: $Y_2 - \bar{C} = (1+r)(\bar{C} - Y_1) > 0$, i.e., a *superavit*.

Thus, at the optimal, deficits and superavits alternate!

(and saving S=Y-C can be negative!)

The Current Account

- We should look at these deficits and superavits as changes in the value of a country's claims on the rest of the world (ROW).
- That is, as changes in *Net Foreign Assets* (NFAs).
- Calling NFA=B, then:

$$CA_t = B_{t+1} - B_t = \Delta NFA_t \qquad (5.3)$$

(note: t here denotes end of period!)

The Current Account

- This is just another way of seeing the CA as =X-M+rB.

- Makes sense: a country where X-M-+rB>0 is a country that is exporting (goods and services) more than is importing, so is ***accumulating claims*** on ROW.

- Mutatis mutandis for CA<0.

- That is: changes in goods+services accounts has a counterpart in changes in the ***financial account***.

The Current Account

- As we shall see later, relating current account flows to changes in NFA stocks will buy us important analytical insights.

- For instance, a better understanding of a country's external sustainability!

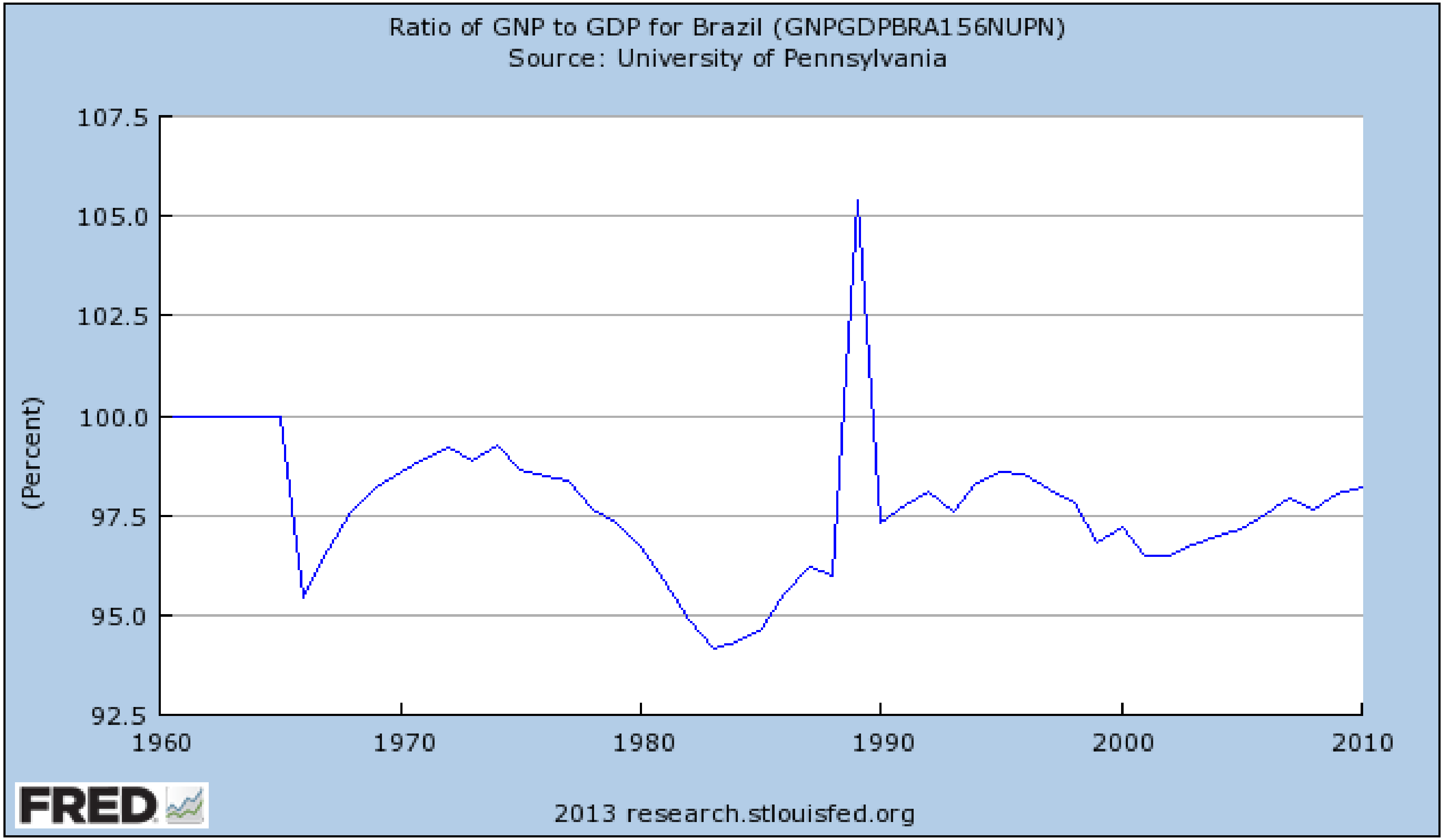
- Without I and G, this accounting implies:

national saving

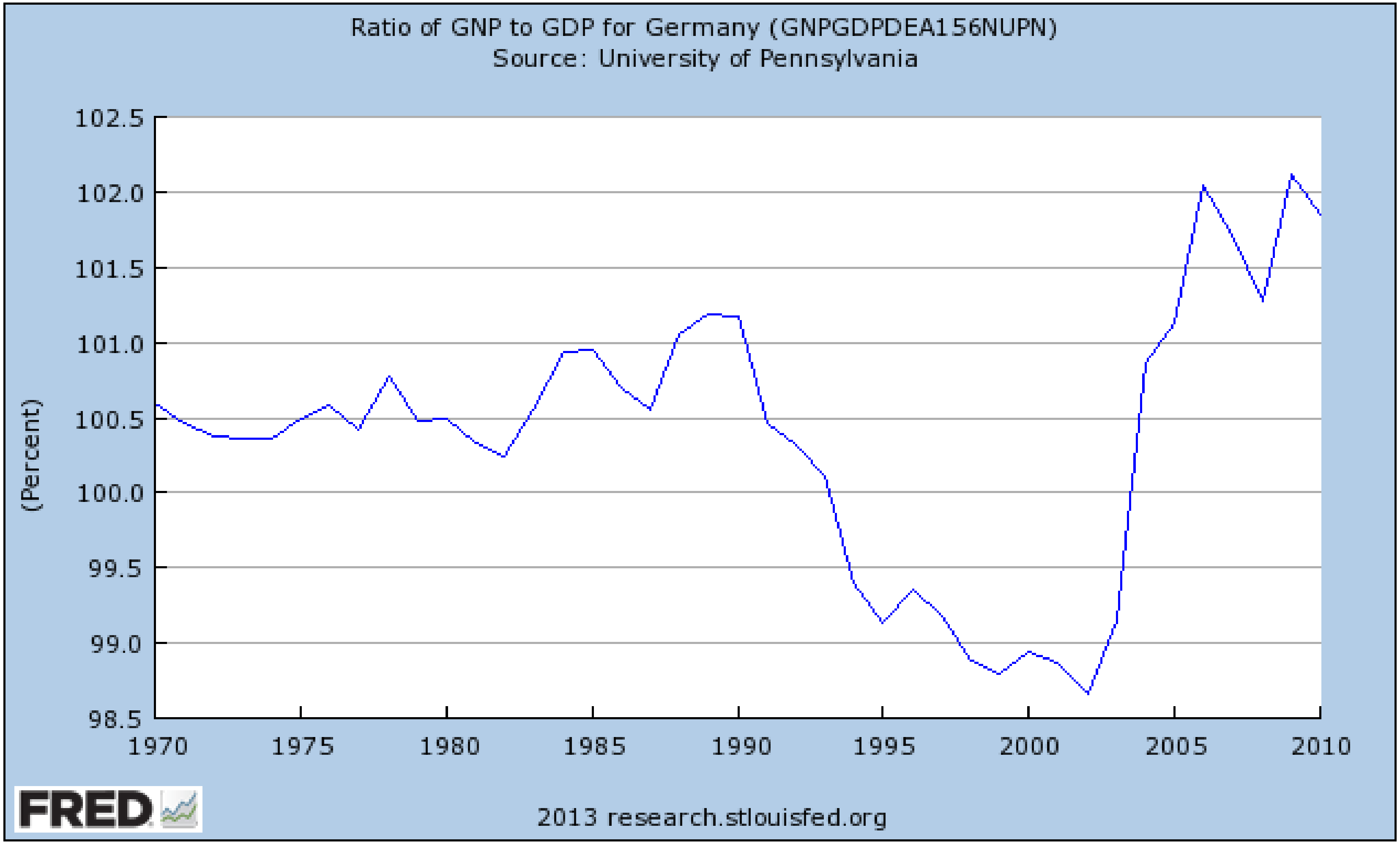
$$CA_t = \Delta NFA_t = Y_t + r_t B_t - C_t = X_t - M_t + r_t B \qquad (5.4)$$

Total Income (GNP)=GDP(Y)+
net international factor payments (rB)

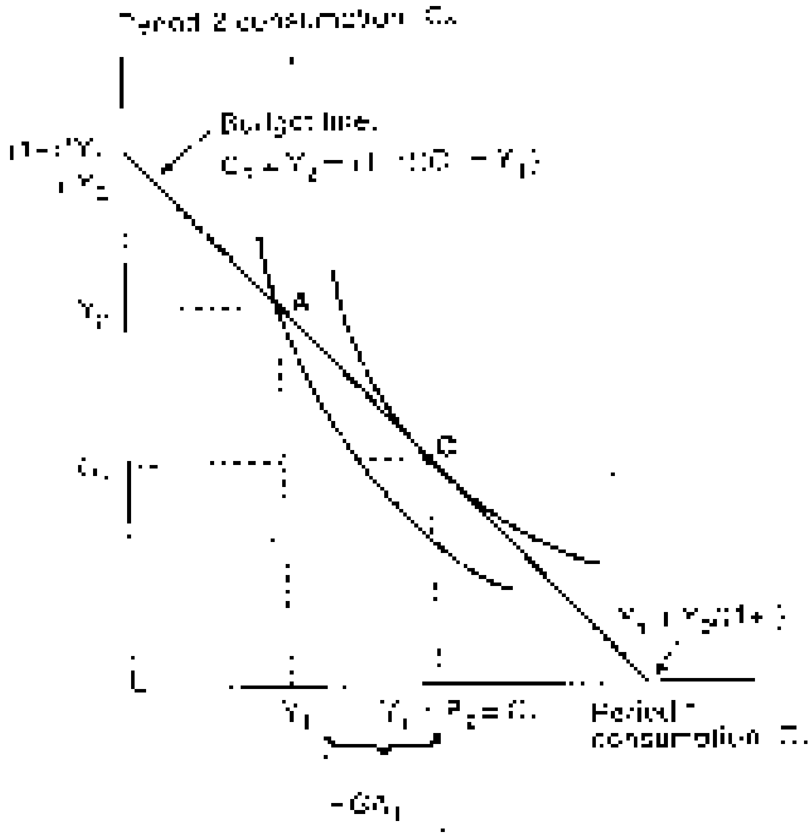
The Current Account



The Current Account



The Current Account



The Current Account

Another dimension of gains from inter-temporal trade

- Interest rate under autarky:

$$\beta \frac{u'(Y_2)}{u'(Y_1)} = \frac{1}{1+r^A} .: \beta R^A = \frac{u'(Y_1)}{u'(Y_2)} > 1$$

- But when the economy is open, we saw before that βR=1, meaning that r^A >r.

- So, under autarky, the price of present consumption was high. “Importing current consumption” lowers it!

The Current Account

- So, if I trade with a country whose output is high, when mine is low, I benefit since I can raise my consumption import the other's excess output.

- And the same goes to the other country.

- So, there are mutual benefits from inter-temporal trade.

- Analogy with the **principle of comparative advantage** in ***intra-temporal*** trade in goods and services!

The Current Account

Introducing government

With G being government *consumption*, we have:

$$CA_t = \Delta NFA_t = Y_t + r_t B_t - C_t - G_t$$

Assume G=T exogenous and $G_1>0$ and $G_2=0$.

Now disposable income for the consumer in t=1 is *temporarily* reduced by $G_1>0$. Yet, international borrowing can help smooth such a “shock”.

The Current Account

The new smoothed consumption $\bar{C}$ will be given by replacing disposable income Y1 in (5.2):

$$\bar{C}_{1,2} = \frac{(1+r)[Y_1 - G_1] + Y_2}{2+r}$$

which will be clearly smaller than in (5.2).

However C in t=1 will be still higher than under autarky because openness allows the household to borrow against period 2 income which will be Y_2 (since G_2=0)

Homework: show that CA_1 will be higher than without government.

The Current Account

- This very simple model illustrates something we will see in more complex models later:

- Namely, exogenous temporary changes in government spending (i.e.“shocks”) tend to ***deteriorate*** the current account.

- Now let’s now relax the assumption of an endownment economy and introduce investment into the model.

Investment

$$Y = F(K) \qquad (5.5)$$

With (no depreciation): $K_t = K_{t-1} + I$ (5.6)

So, now this economy has two sources of *wealth accumulation*: NFA and the domestic (net) capital stock.

Hence the domestic saving (flow) will be:

$$S_t = B_{t+1} + K_{t+1} - B_t - K_t = Y_t + rB_t - C_t - G_t \qquad (5.7)$$

The Current Account

Using (5.6) yields:

$$CA_t = B_{t+1} - B_t = Y_t + rB_t - C_t - G_t - I_t = S_t - I_t \qquad (5.8)$$

where G is government ***current*** spending (i.e. does not include government investment).

Accordingly, the inter-temporal budget constraint (IBC) in our simple two-period model from (5.1) now becomes:

$$C_1 + I_1 + \frac{C_2 + I_2}{(1+r)} = Y_1 - G_1 + \frac{Y_2 - G_2}{(1+r)} \qquad (5.9)$$

The Current Account

- We can now solve for the optimal current account given an exogenous r (small open economy assumption), G, and K1:

$$\text{Max. } u(C_1) + \beta u(C_2) \qquad (5.10a)$$

s.t.

$$C_1 + I_1 + \frac{C_2 + I_2}{(1+r)} = Y_1 - G_1 + \frac{Y_2 - G_2}{(1+r)} \qquad (5.10b)$$

$$Y_t = F(K_t) \qquad (5.10c)$$

$$K_2 = K_1 + I_1 \qquad (5.10d)$$

$$I_2 = -K_2 \qquad (5.10e)$$

The Current Account

The FOC w.r.t to C_1, C_2, I_1:

(consumption efficiency) : $$\frac{u'(C_1)}{u'(C_2)} = \beta R$$

(production efficiency): $$F'(K_2) = F'(I_1 + K_1) = r \qquad (5.11)$$

Hence, ***with R given***, the desirable investment and capital stock in t=2 is independent of consumption preferences!

A Two-Country/Region Open Economy Model

So far, we have been assuming that R is fixed by ROW

Now we are going to see, how r can be determined by savings and investment at a world level.

The analysis draws on the so-called Metzler diagram discussed in Obstfeld and Rogoff (chapter 1, 1.3.3.1).

Consider two countries (or blocs of countries) and ignore (to make it simpler, government consumption.

Consider also that capital is imobile. No labor.

A Two-Country/Region Open Economy Model

Call (as usual) "*" the foreign region. We then have:

$$Y_t = A_t F(K_t) \qquad Y_t^* = A_t^* F^*(K_t^*)$$

Thus, in a two-period model with K_1, K_1* and ignoring depreciation as in eq. (5.6), we have:

$$Y_2 = A_2 F(K_1 + I_1) \qquad Y_2^* = A_2^* F^*(K_1^* + I_1^*)$$

At the optimal, we then have:

$$r = A_2 F'(K_1 + I_1) \qquad r^* = A_2^* F'(K_1^* + I_1^*) \qquad (5.12)$$

A Two-Country/Region Open Economy Model

You then use the Euler eq. and the IBC [as in 5.10 but without G] to derive the shape of the saving curve for each country

And finally use Y=C+I to pin-down r_a in each region.

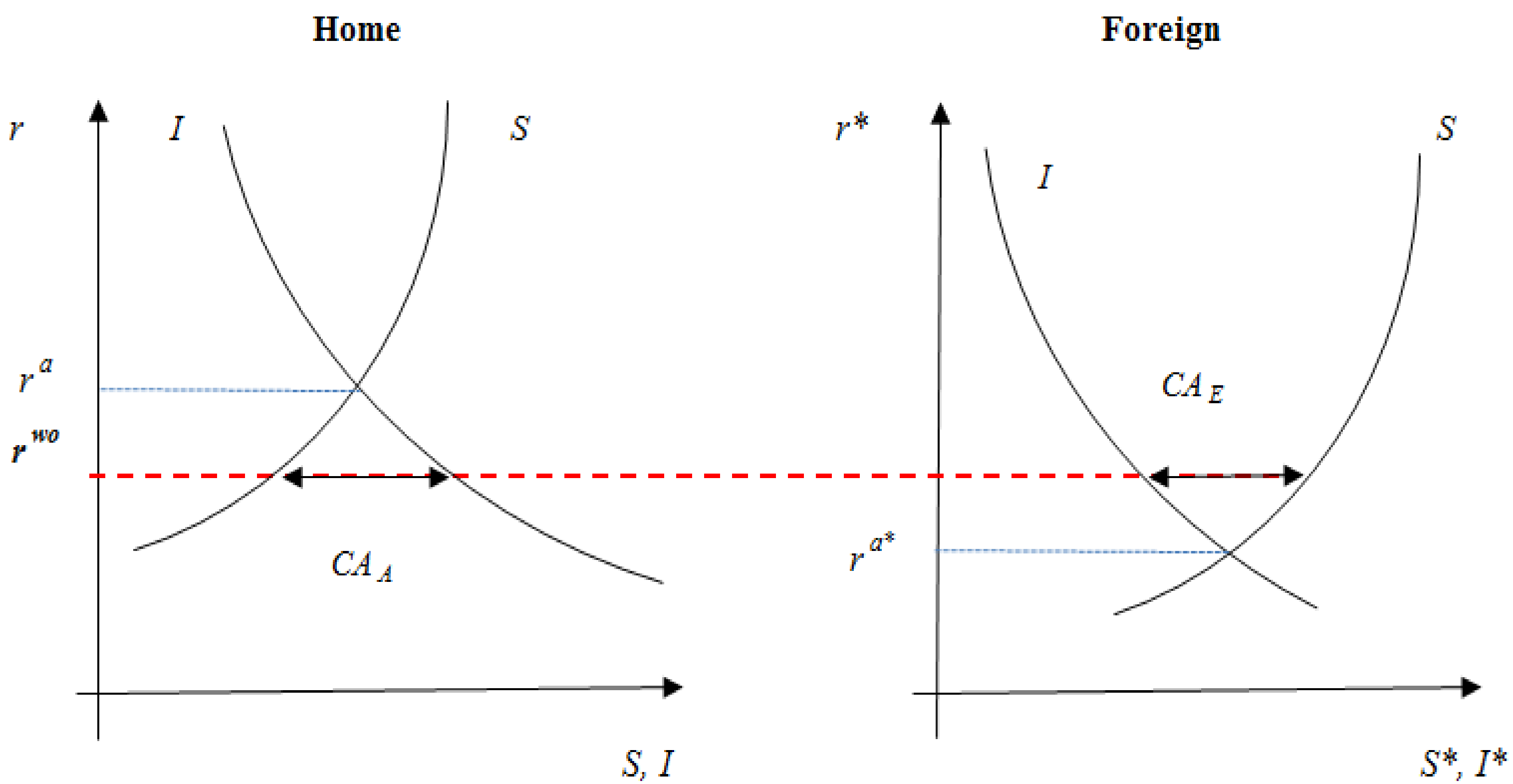
And since the world consists of the two economies only, then the closed economy identity holds

$$Y_1 + Y_1^* = I_1 + I_1^* + C_1 + C_1^* .: CA_1 = -CA_1^* \qquad (5.13)$$

We can now produce the following Metzler diagram.

A Two-Country/Region Open Economy Model

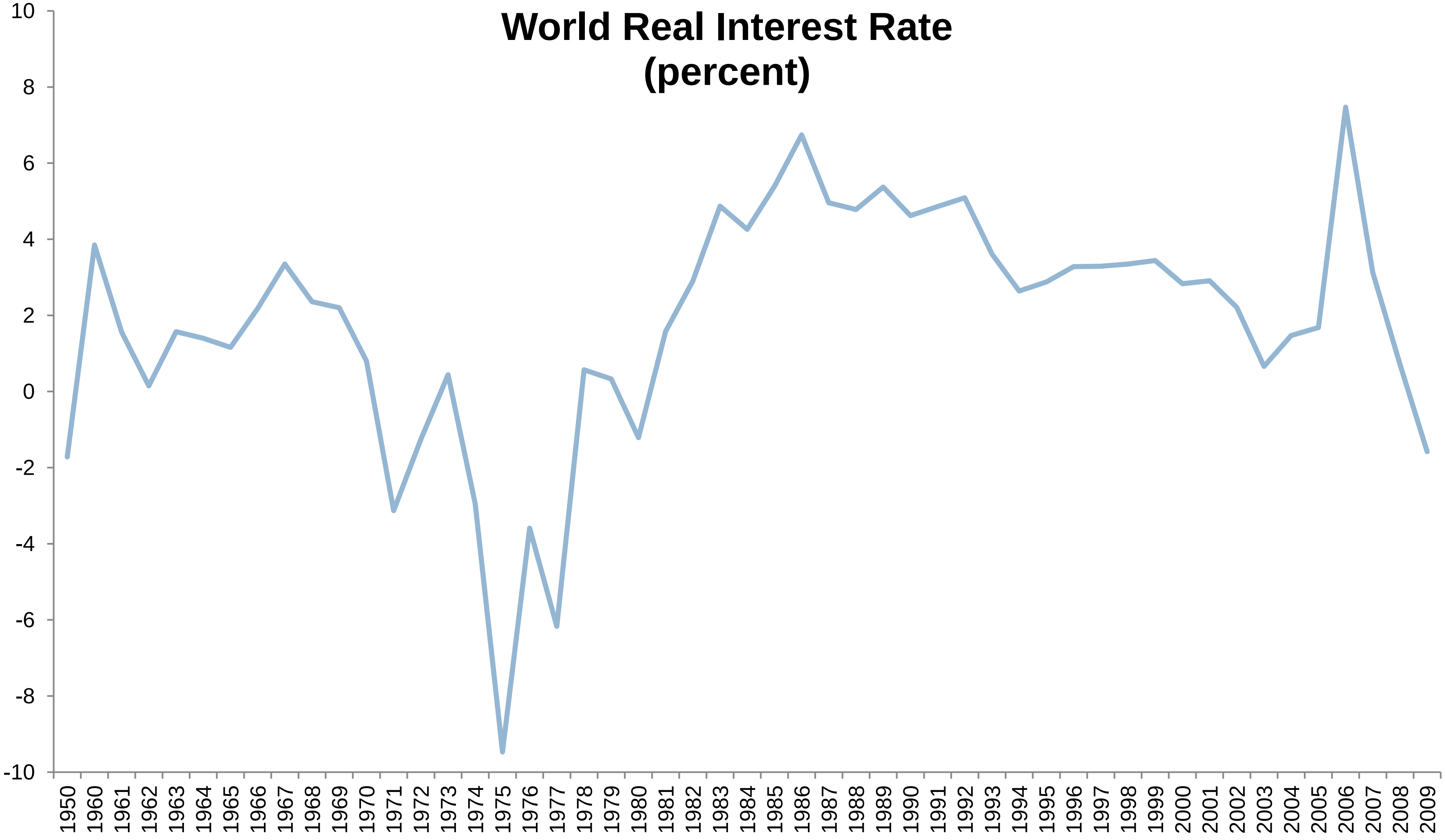
Metzler Diagram of Two Region World



A Two-Country/Region Open Economy Model

- We can now do comparative statics.
- One important question we can address with this little model is to understand what determines changes in world r.
- Big topic.
- Let's look at how world r moves with some important "shocks".

A Two-Country/Region Open Economy Model



A Two-Country/Region Open Economy Model

- What happens to world r and current accounts if the foreign country households become more impatient, i.e., their discount rate rises?

- What happens to r and CA's if A_1 goes up? And how about if A_2 goes up? [Assume $Y = AK^{\alpha}$] How does that depend on σ?

- How does that change if happens in the foreign country?

Inter-temporal Marshall-Lerner condition

Basic idea: how responsive is the CA to change in relative prices (here the inter-temporal relative price r) so that external stability is maintained?

From (5.13) we have:

$$S_1(r) + S_1^*(r) = I_1(r) + I_1^*(r)$$

Walrasian stability then implies:

$$S_1'(r) + S_1^{*'}(r) - I_1'(r) - I_1^{*'}(r) > 0$$

A Two-Country/Region Open Economy Model

Now define the home country (net) imports and exports as:

$$IM_1 = C_1 + I_1 - Y_1 = I_1 - S_1$$

$$EX_2 = Y_2 - C_2 + I_2 = IM_2^*$$

(so global TB=0)

So, inter-temporal external balance (the country's IBC) requires:

$$IM_1 = \frac{EX_2}{(1+r)} = \frac{IM_2^*}{(1+r)}$$

A Two-Country/Region Open Economy Model

So, external stability requires:

$$\frac{d}{dr}\left[\frac{EX_2}{(1+r)} - IM_1\right] = \frac{d}{dr}\left[\frac{IM_2^*}{(1+r)} - IM_1\right] > 0$$

$$= \frac{IM_2^{*'}}{(1+r)} - \frac{IM_2^*}{(1+r)^2} - IM_1^{'} > 0 \qquad (5.14)$$

Define:

$$\zeta = -\frac{(1+r)IM'}{IM} \qquad \zeta = -\frac{(1+r)IM_2^{*'}}{IM_2^*}$$

Replacing in (5.14) yields:

$$= \frac{IM_2^*}{(1+r)^2}\left[\zeta^* + \zeta - 1\right] > 0$$

Fiscal Policy and the Current Account

Consider again our simple two-period set-up of (5.10).

Recall that the IBC for the household with $B_0=0$ is then:

$$C_1 + I_1 + \frac{C_2 + I_2}{(1+r)} = Y_1 - T_1 + \frac{Y_2 - T_2}{(1+r)}$$

Now relax the assumption of balanced budget for all t. The corresponding IBC for the government is:

$$G_1 + \frac{G_2}{(1+r)} = T_1 + \frac{T_2}{(1+r)} \therefore T_1 = G_1 + \frac{G_2}{(1+r)} - \frac{T_2}{(1+r)}$$

Fiscal Policy and the Current Account

Substituting out T1 in the preceding eq. yields:

$$C_1 + I_1 + \frac{C_2 + I_2}{(1+r)} = Y_1 - G_1 + \frac{Y_2 - G_2}{(1+r)} \qquad (5.15)$$

Which is ***exactly*** like (5.10b), when we “forced” the fiscal deficit (G-T) to be zero every period.

So, if r does not change with fiscal imbalances (BIG “if” as we will see later in the course), the household consumption decisions do not change with the timing of deficits or superavits.

Fiscal Policy and the Current Account

In other words, for a given G, there is ***neutrality*** of consumption decisions to the timing of taxes.

All that matters is the *present value* of government spending.

Let’s see now what happens to the current account when the timing of taxes (and hence the path of deficits and superavits change).

We have seen that CA=S-I always.

Fiscal Policy and the Current Account

We have also assumed that r remains constant , as in any small open economy (SOE) that takes world interest rate as given.

So, I will not change with changes in G-T!

Let's now see what happens to saving.

Private saving: $S^P = Y - T - C$

Public saving: $S^G = T - G$

Fiscal Policy and the Current Account

Hence, national saving and the CA are:

$$S = S^P + S^G = Y - C - G$$

$$CA = S - I = Y - C - G - I$$

So, the CA is ***exactly*** like in (5.8) when G=T for all t.

Hence, in this representative agent model with **no borrowing constraints**, all changes in public saving are offset one to one with changes in private saving.

Fiscal Policy and the Current Account

That is, the path of fiscal imbalances do not change the CA:

In short: Ricardian Equivalence holds!

As you might guess from what we learned in our first class, this result can carry over a finite horizon model, so is not dependent on our use of a two-period model.

Let's work this case out, now without imposing any restrictions on initial bond holdings.

Fiscal Policy and the Current Account

Again, begin with the private sector's external "current account":

$$B_{t+1}^{P} - B_{t}^{P} = Y_t + rB_{t}^{P} - T_t - C_t - G_t - I_t \qquad (5.16)$$

Re-write it to prepare for integrating forward:

$$(1+r)B_{t}^{P} = B_{t+1}^{P} + T_t + C_t + G_t + I_t - Y_t$$

Then, lead it one period and divide by (1+r):

$$B_{t+1}^{P} = \frac{1}{(1+r)}B_{t+2}^{P} + \frac{1}{(1+r)}[T_{t+1} + C_{t+1} + G_{t+1} + I_{t+1} - Y_{t+1}]$$

Substituting in the previous expression and so on to obtain

Fiscal Policy and the Current Account

The IBC for the household sector is thus:

$$\sum_{s=t}^{\infty}\frac{1}{(1+r)^{s-t}}[C_s+I_s]=(1+r)B_t^P+\sum_{s=t}^{\infty}\frac{1}{(1+r)^{s-t}}[F(K_{s-1}+I_s)-T_s] \quad (5.17)$$

Do the same to compute the government's external "current account":

$$B_{t+1}^P-B_t^P=Y_t+rB_t^P-T_t-C_t-G_t-I_t \quad (5.18)$$

Fiscal Policy and the Current Account

The IBC for the government is thus:

$$\sum_{s=t}^{\infty} \frac{1}{(1+r)^{s-t}} G_s = (1+r)B_t^G + \sum_{s=t}^{\infty} \frac{1}{(1+r)^{s-t}} T_s \qquad (5.19)$$

To obtain the economy-wide budget constraint, add the private and the public one:

$$\sum_{s=t}^{\infty} \frac{1}{(1+r)^{s-t}} [C_s + I_s] = (1+r)B_t + \sum_{s=t}^{\infty} \frac{1}{(1+r)^{s-t}} [F(K_{s-1} + I_s) - G_s] \qquad (5.20)$$

Fiscal Policy and the Current Account

It is clear in this overall budget constraint that the timing of taxes does not matter.

In fact, this constraint, which does not necessarily assume that G=T every period, is identical to the one that does,

Much like in the 2 period model!

Upshot: both in the finite and infinite horizon model with a representative agent, r fixed, Bo given, and under no borrowing constraints, Ricardian equivalence holds!

Fiscal Policy and the Current Account

We have seen in the first class that Ricardian equivalence breaks down under certain forms of borrowing constraints (depending on the path of income and on Bo)

Now we will see that Ricardian Equivalence also breaks down if the horizon of the private individual differs from the horizon of the government.

The discussion follows O-R (1996, 3.2), focusing on the small endownment economy with ***overlapping generations***.

Fiscal Policy and the Current Account

The private individual lives for two periods – when she is young and when she is old. No bequest.

Notation: $\tau_t^Y -> $ lump-sum tax on the young

$\tau_{t+1}^O -> $ lump-sum tax on the same individual when old

So, the individual's IBC becomes:

$$c_t^Y + \frac{c_{t+1}^0}{1+r} = y_t^Y - \tau_t^Y + \frac{y_{t+1}^o - \tau_{t+1}^o}{1+r} \qquad (5.21)$$

Fiscal Policy and the Current Account

The Euler equation of course remains:

$$c_{t+1}^{o} = (1+r)\beta c_{t}^{Y}$$

Use (5.21) and the Euler equation to obtain:

$$c_{t}^{Y} = \left(\frac{1}{1+\beta}\right)\left(y_{t}^{Y} - \tau_{t}^{Y} + \frac{y_{t+1}^{o} - \tau_{t+1}^{o}}{1+r}\right) \qquad (5.22)$$

$$c_{t+1}^{o} = (1+r)\left(\frac{1}{1+\beta}\right)\left(y_{t}^{Y} - \tau_{t}^{Y} + \frac{y_{t+1}^{o} - \tau_{t+1}^{o}}{1+r}\right) \qquad (5.23)$$

Fiscal Policy and the Current Account

Aggregate consumption is:

$$C_t = c_t^Y + c_t^O$$

The big novelty here is on the government's IBC. Tax rates can be different between the young and the old.

Again, lets look at the government changes in NFA:

$$B_{t+1}^G - B_t^G = \tau_t^Y + \tau_t^o + rB_t^G - G_t \qquad (5.24)$$

Fiscal Policy and the Current Account

Integrating forward yields (5.18) but now with two tax rates:

$$\sum_{s=t}^{\infty}\frac{1}{(1+r)^{s-t}}G_s=(1+r)B_t^G+\sum_{s=t}^{\infty}\frac{1}{(1+r)^{s-t}}(\tau_s^y+\tau_s^o)$$

Now to look into pin-down aggregate consumption in a tractable way we make the assumption that y^Y,τ^Y,y^o,τ^o,G are constants so we can add (5.21) & (5.22) to yield:

$$C=\left(\frac{1+(1+r)\beta}{1+\beta}\right)\left(y^y-\tau^y+\frac{y^o-\tau^o}{1+r}\right) \qquad (5.25)$$

Fiscal Policy and the Current Account

With τ^{Y}, τ^{o}, G constant, then (5.24) becomes:

$$G = \tau^{Y} + \tau^{o} + rB^{G}$$

$$.: \tau^{o} = G - \tau^{Y} - rB^{G}$$

Substituting in (5.25) yields:

$$C = \left(\frac{1 + (1+r)\beta}{1+\beta} \right) \left(y^{y} + \frac{y^{o} - \tau^{y} - G + rB^{G}}{1+r} \right) \qquad (5.26)$$

Fiscal Policy and the Current Account

Two main things to notice in (5.26).

- Flat consumption **no longer** depends on $R\beta = 1$.

- The heterogeneity across agents in the overlapping generation model, allows consumption of the older to be going up while the younger being going down relative to the deceased.

- C depends not only on G as in the representative agent models of (5.9) or (5.15), but also on B and tau.

Fiscal Policy and the Current Account

- So, the Ricardian equivalence between taxes and debt does not hold!

- Note that this is so even without borrowing constraints!

- All you need is agent heterogeneity and different life horizons between households and government.

Fiscal Policy and the Current Account

To see what happens to the CA, recall again that

$$CA_t = S_t^P + S_t^G - I_t$$

Government saving is T-G so determined by the government given a tax rate on the young and the old and Y (recall we are still assuming an endowment economy).

-> So, to determine the CA we just need to see what happens to S_t^P .

Fiscal Policy and the Current Account

Let's look at the saving of the young using (5.22):

$$S_t^Y = y_t^Y - \tau_t^Y - c_t^Y = y_t^Y - \tau_t^Y - \left(\frac{1}{1+\beta}\right)\left(y_t^Y - \tau_t^Y + \frac{y_{t+1}^o - \tau_{t+1}^o}{1+r}\right) \quad (5.27)$$

$$S_t^Y = \left(\frac{\beta}{1+\beta}\right)\left(y_t^Y - \tau_t^Y - (y_{t+1}^o - \tau_{t+1}^o)\right)$$

But because $S_t^o = S_{t-1}^Y$, then

$$S_t = S_t^Y + S_t^o = S_t^Y - S_{t-1}^Y = \Delta S_t^Y = \left(\frac{\beta}{1+\beta}\right)\left(\Delta(y_t^Y - \tau_t^Y) - \Delta(y_{t+1}^o - \tau_{t+1}^o)\right) \quad (5.28)$$

Fiscal Policy and the Current Account

- So, the current account will depend on the time profile of taxes.
- Importantly, it will also depend on the time profile of output.
- In particular, rapid output growth for young generations will induce current account surpluses! So, growth will affect the CA differently, depending on the age profile! Δy_t^Y
- This is intuitive: the young save more and CA=S-I!
- This also means that aging will be associated with lower CAs!

Fiscal Policy and the Current Account

- By the same token, a higher rate of population growth, which tilts the demographic profile towards the younger tends to increase savings and hence the CA.

- But of course this model is stylized: in practice, it is probably more realistic to think in terms of 3 age groups – the very young, the adult, and the old.

- The very young and the old dissave; the adult saves. So to improve the CA, it really needs a big longer for high population growth to kick in and improve the CA.

- But still elderly countries will tend to have CA deficits.

Empirical Application: Cross-country Econometric Estimates of Fundamental Determinants of the Current Account

- We have now identified fiscal policy as well as a demographics, growth, technology (A) and initial NFA (Bo) positions as determinants of savings and investment in the open economy.
- Since CA=S-I, we can now examine the empirical determinants of CAs.
- The following regressions are based on a sample of 50 countries over the period 1970-2010.

Determinants of the Current Account

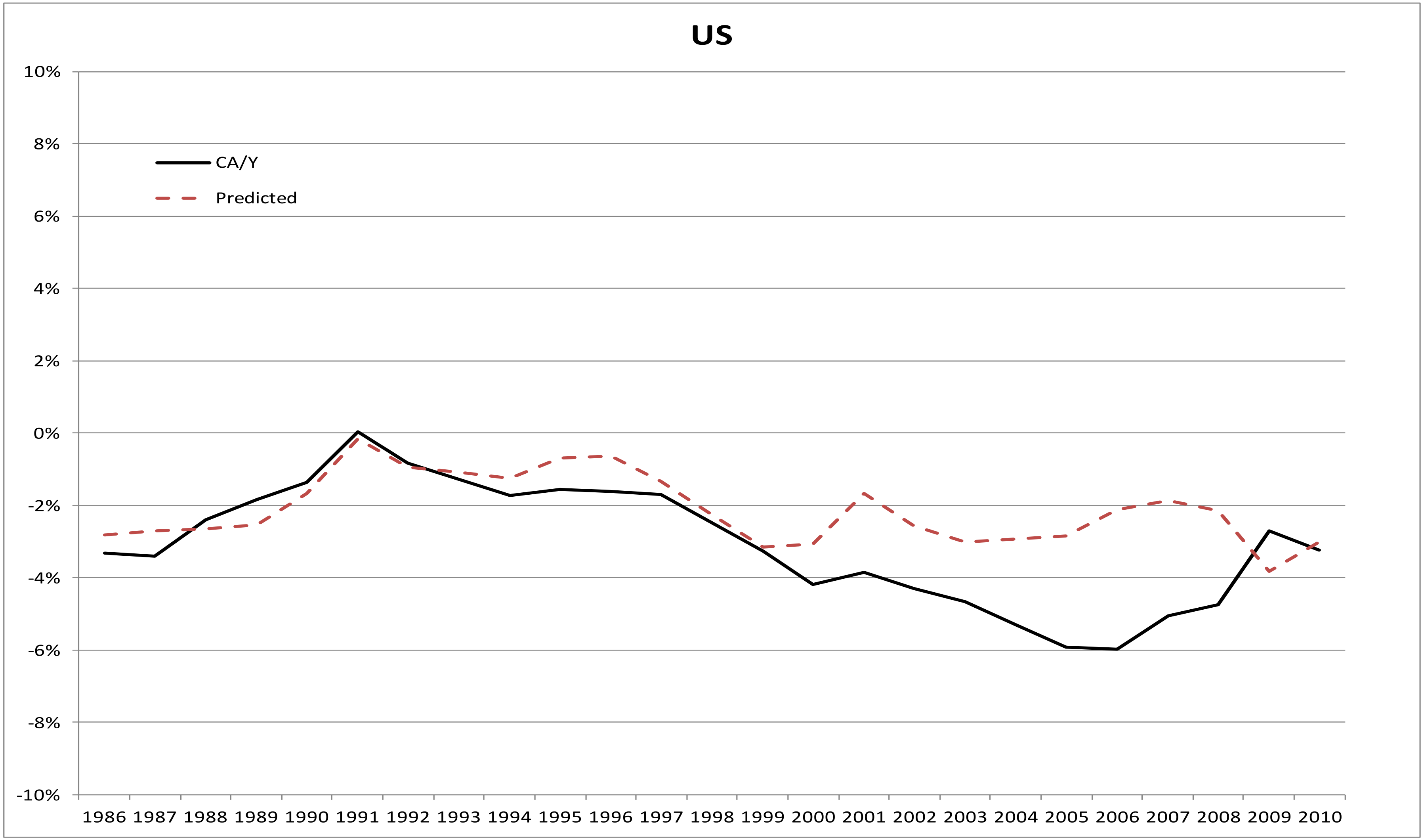
From Catão and Milesi-Ferretti (2013)

Table A2. Panel Estimates of Current Account Norms

VARIABLES	(1) CA/Y	(2) CA/Y	(3) CA/Y	(4) CA/Y	(5) CA/Y	(6) CA/Y
Lagged NFA/Y	0.0452***	0.0455***	0.0442***	0.0465***	0.0452***	0.0473***
	(0.00346)	(0.00351)	(0.00398)	(0.00353)	(0.00346)	(0.00370)
Relative PPP GDPpc	0.0467***	0.0480***	0.0459***	0.0445***	0.0465***	0.0185***
	(0.00563)	(0.00592)	(0.00584)	(0.00582)	(0.00566)	(0.00592)
Oil Balance Dummy	0.287***	0.285***	0.291***	0.277***	0.287***	0.356***
	(0.0471)	(0.0471)	(0.0475)	(0.0466)	(0.0472)	(0.0700)
Old Age Depency Ratio	-0.143***	-0.145***	-0.140***	-0.140***	-0.142***	-0.0802***
	(0.0246)	(0.0250)	(0.0250)	(0.0257)	(0.0246)	(0.0245)
Population Growth	-0.402**	-0.413**	-0.407**	-0.423**	-0.400**	-0.460**
	(0.174)	(0.177)	(0.175)	(0.184)	(0.174)	(0.191)
Polity Index	-0.000747***	-0.000769***	-0.000726***	-0.000781***	-0.000746***	-0.000214
	(0.000189)	(0.000194)	(0.000186)	(0.000206)	(0.000190)	(0.000192)
Trend Growth	-0.262***	-0.264***	-0.260***	-0.265***	-0.262***	-0.291***
	(0.0574)	(0.0575)	(0.0588)	(0.0555)	(0.0574)	(0.0675)
General Gov. Balance (cyc.adj)	0.375***	0.375***	0.369***	0.456***	0.377***	0.452***
	(0.0580)	(0.0583)	(0.0556)	(0.0578)	(0.0585)	(0.0616)
Quinn Index of Capital Controls	0.0226***	0.0228***	0.0232***	0.0224***	0.0227***	0.0160***
	(0.00469)	(0.00473)	(0.00462)	(0.00499)	(0.00480)	(0.00575)
Aging Speed		-0.0131				
		(0.0203)				
Financial Center Dummy			0.00395			
			(0.00654)			
Trade Openness (5-year MA)				-0.00222		
				(0.00598)		
Reserve Currency Dummy					0.000841	
					(0.00300)	
Social Protection Index						-0.0132
						(0.00938)
Constant	0.0103***	0.0106***	0.00943***	0.0104***	0.0102***	0.00498**
	(0.00227)	(0.00231)	(0.00270)	(0.00313)	(0.00239)	(0.00232)
Observations	2,300	2,300	2,300	2,134	2,300	1,891
R-squared	0.319	0.319	0.319	0.341	0.319	0.344

Robust SEs in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Determinants of the Current Account



The Feldstein-Horioka S-I Puzzle

- We have seen that CA do not need to be always in balance and, in fact, may optimally be in either deficit or surpluses quite often.
- This results from inter-temporal trade specialization.
- And the attendant fact that I and S (Y-C) are determined by different factors.
- However, in many countries for much of the time CA/Y is not large.
- This must mean that S~I.

The Feldstein-Horioka S-I Puzzle

- This is famously called the Feldstein-Horioka “Paradox”.

- It is based on their original regression for 1960-74:

$$\frac{I}{Y} = 0.04 + 0.895 \frac{S}{Y}, \quad R^2 = 0.91$$

- An update in O-R for 1982-91:

$$\frac{I}{Y} = 0.09 + 0.625 \frac{S}{Y}, \quad R^2 = 0.69$$

The Feldstein-Horioka S-I Puzzle

A few reasons

- One is that countries/government do not like running large external imbalances as they can make them vulnerable to debt or currency crises.
- Both the large creditor and debtor become vulnerable.
- There may be financial frictions affecting the private sector which prevent them from running large balance sheet imbalances (e.g. the cost of external financing goes up as in the model of financial accelerator we have seen).
- Yet, CA imbalances have been growing so FH puzzle is becoming less of a puzzle.