

Three Balances and Twin-Deficits: Godley versus Ruggles and Ruggles

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## Introduction

### 1. Three balances

### 2. Historical findings in UK in 1970s and 1980s: private sector balance was small and stable

- Wynne Godley and his co-authors → Twin Balances
- theoretical grounding was the hypothesis of a stable desired norm between private sector net financial assets and private disposable income
- However, the adjustment process they proposed was unstable in the case of endogenous growth.
- I will propose a generally stable adjustment process
  - Implies that the private sector balance is proportional to the growth rate of GDP
  - Implies an endogenous savings rate

### 3. In the US, Richard and Nancy Ruggles discovered that in the postwar period (up to 1990) the household savings rate was zero and that business savings was equal to business investment.

- Implies that aggregate private savings equals private investment → private sector balance is zero
- But here the private sector savings *rate* adapts to the needs of capital accumulation,

### 4. In the 1990's the private sector balance rapidly became negative as the sector went on a borrowing spree.

- But over the next decade the unfolding economic crisis moved the balance sharply back into positive territory as debt reduction became paramount
- Back to twin deficits?

The Four Balances: Excess Demand = Three More Balances

$$(1.1) \quad E \equiv D - Q = (C + I + G + X) - (Y + M) = [(C + I) - (Y - T)] + [G - T] + [X - M]$$

- Nothing in this *ex ante* relation which requires that the three balances add up to zero
- At given prices, aggregate excess demand would lead to undesired changes in inventories:  $E = -\Delta INV_u$ .
- National accounts incorporate the undesired inventory change into "investment", redefined as the sum of desired fixed investment and desired inventory change *and* unplanned inventory change.
- This accounting device converts the *ex ante* non-zero balance in equation (1.1) into an *ex post* zero-balance identity.

$$(1.2) \quad \begin{aligned} & [(C + (I - E)) - (Y - T)] + [G - T] + [X - M] = \\ & [(C + (I + \Delta INV_u)) - (Y - T)] + [G - T] + [X - M] = 0 \end{aligned}$$

The trouble is that *an ex post accounting identity is not a constraint*

- Theoretical economists therefore implicitly or explicitly add a further condition: that aggregate demand and supply gravitate around each other over some period of time called "the short run".
- The imposition of this equilibrium condition is what converts the three balanced identity in equation (1.1) into a constraint operative over some putative "short run".

$$(1.3) \quad E = -\Delta INV_u \approx 0$$

$$(1.4) \quad PB + [M - X] \approx [G - T] \text{ where } PB \equiv [(Y - T) - (C + I)] = \text{the private sector balance.}$$

It is useful to note that the private sector balance can be expressed in terms of the balance between aggregate private savings and investment.

- The excess of disposable private income over consumption expenditures is private savings  $(Y - T) - C = S_p$ , which can in turn be written as the sum of household savings ( $S_h$ ) and business savings, i.e. retained earnings ( $RE$ ).

$$(1.5) \quad PB = S_p - I = S_h + (RE - I)$$

### The Twin Balance Hypothesis of the New Cambridge Approach

$$(1.6) \quad PB \approx 0 \quad \text{so} \quad \frac{[M - X]}{Y} \approx \frac{[G - T]}{Y} \quad [\text{Twin-Deficit Hypothesis}]$$

But the change in actual private sector net financial assets from the beginning to the end of the period is equal to the private sector balance over the period, so

$$(1.7) \quad \Delta NAF A_{p_t} \equiv (S_p - I)_t = PB = \text{the private sector balance}$$

### Godley-Cripps behavioral hypothesis

$$(1.8) \quad NAF A_{p_t}^* = \alpha (1 - t) Y_t$$

Godley and Cripps proposed an adjustment mechanism of the form

$$\Delta NAF A_{p_t} = \phi \left( NAF A_{p_{t-1}}^* - NAF A_{p_{t-1}} \right) \text{ where } \phi \text{ is some positive adjustment coefficient.}$$

As Godley and Cripps themselves point out, their adjustment mechanism is only consistent with a constant level of income because the path becomes unstable when growth is endogenous

### A simple extension of the Godley-Cripps adjustment mechanism.

$$(1.9) \quad \Delta NAF A_{p_t} = \Delta NAF A_{p_t}^* + \phi \left( NAF A_{p_{t-1}}^* - NAF A_{p_{t-1}} \right) + \varepsilon_t$$

The stability of the adjustment process in the face of equation (1.8) implies that

$$NAF A_{p_t} = NAF A_{p_t}^* = \alpha (1 - t) Y_t, \text{ so}$$

$$(1.10) \quad \frac{\Delta NAF A_{p_t}}{Y_t} = \frac{\alpha (1 - t) (\Delta Y_t / Y_{t-1})}{(Y_t / Y_{t-1})} = \frac{\alpha (1 - t) g_{Y_t}}{1 + g_{Y_t}} \approx \alpha (1 - t) g_{Y_t}$$

where  $g_{Y_t} \equiv (\Delta Y_t / Y_{t-1}) =$  the growth rate of aggregate output  $\ll 1$ . In light of equation (1.7)

### The private sector balance will be essentially proportional to the growth rate of GDP

- with  $g_{Y_t} = 0$  we get a zero private sector balance and hence twin deficits.
- More generally, for given positive growth rate  $g_{Y_t}$ , we get "sibling deficits":

$$(1.11) \quad \frac{[M - X]}{Y} \approx \frac{[G - T]}{Y} + \alpha(1 - t)g_{Y_t}$$

### The Sectoral Savings-Investment Hypothesis of Ruggles and Ruggles

Ruggles and Ruggles define household savings as the excess of income over the *nondurable* consumption goods.

Their empirical analysis of the US economy then leads them to conclude that household savings so defined is roughly equal to household expenditures on *durable* consumer goods, i.e. on "household capital formation".

On the business side, Ruggles and Ruggles also find that total corporate and noncorporate business savings, i.e. total retained earnings, is roughly equal to total business capital formation (investment).

Ruggles and Ruggles observations were rooted in their intimate knowledge of the intricacies of US national income and product accounts (NIPA).

"with respect to sector saving and capital formation the general rule is that each tub tends to stand on its own bottom. The household sector is not, and historically has not been, a net supplier of funds to other sectors; furthermore, the manufacturing sector does not absorb more funds than it generates" (Ruggles and Ruggles, 1992, p. 160).

Several remarkable implications follow from the Ruggles' findings.

- First of all, household savings, defined in Keynesian fashion as the excess of household income over total consumer purchases, is essentially zero while business saving is equal to business investment.
  - It is striking that these are the standard characterizations of savings within the classical tradition and even some parts of the Keynesian one (e.g. Joan Robinson).
- Secondly, the two results imply that aggregate private savings equals private investment, so that the private sector balance is zero.

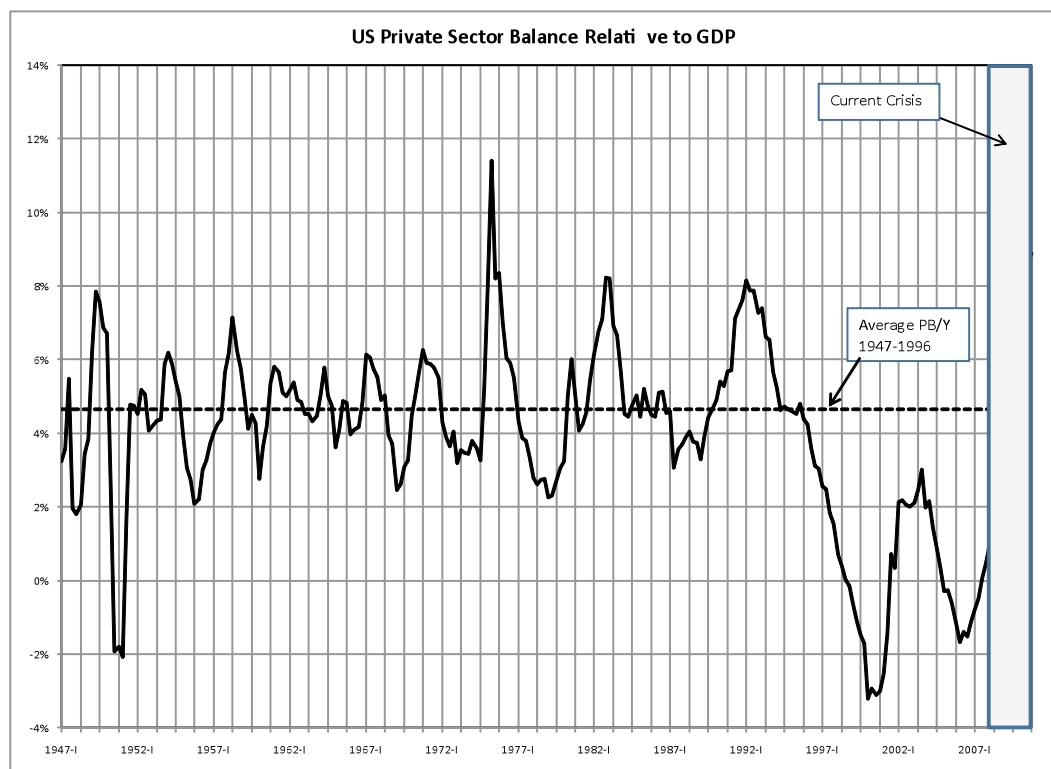
- Finally, on the assumption that "capital formation" is determined by long run factors, this implies that it is the private savings *rate* which adjusts in response to private sector investment needs.

Ruggles and Ruggles end by focusing on a set of "simple and rather obvious policy implications".

- They conclude that "measures designed to stimulate household savings" in order to spur business investment will actually have the opposite effect because the resulting reduction in consumer spending will hurt profits and hence investment.
- Thus policy should focus on "direct incentives which increase profits and induce enterprises to reinvest their own retained earnings".
- In the latter regard, they note that "from past evidence it is apparent that a high level of aggregate demand is needed for enterprises to undertake high levels of capital formation" (Ruggles and Ruggles, 1992, pp. 161-162).

### Summary and implications

The private sector balance, relative to GDP, fluctuated around a constant level of about 4.7 percent for almost half a century. A similar pattern held in the UK, except that the average balance was somewhat smaller.



Both schools give rise to the implication that the savings rate adapts to investment needs.

- The endogeneity of the savings rate has contradictory implications for effective demand theories. On one hand, it reduces the scope of the multiplier argument.
- In the Keynesian case, any gap between investment and savings is filled by changes in the volume of output, because the savings *rate* is assumed to be unchanged. To the extent that the savings rate itself adjusts to fill the gap, the multiplier is reduced
- In the Ruggles' and classical case in which households do not save and firms save what they need for investment, the multiplier is a *transient* whose duration depends on how long it takes for business savings to adapt to investment needs.
- On the other hand, an endogenous savings rate allow us to reinstate the notion that growth can be ruled by the expected profitability of investment as in Marx, Keynes, and Kalecki while retaining the sensible notion that actual capacity utilization will fluctuate around its normal level in the long, as in Harrod (Shaikh, 2009).