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Fiscal Policy and the Substitution between National and Foreign Savings

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Mainstream literature: studies that deal with the relationship between national savings, foreign saving and investment.

Limited degree of international capital mobility: foreign saving becomes a determinant of domestic saving.

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Open economies - the issue of the exchange rate is set aside.

Post Keynesian economics: investment ‘causes’ savings, as Keynes showed.

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How does the Post Keynesian literature address the relationship between national savings, foreign saving and investment?

Is the FISF-circuit valid for open economies?

Is there a role for the real exchange rate in determining the level of domestic and/or foreign savings?

There is no such study that shows how the FISF-circuit and its channels and mechanisms work in open economies.

There are very few studies in the Keynesian tradition that are concerned with the role of the real exchange rate in determining the level of domestic and/or foreign savings – Bresser-Pereira and Nakano (2002) and Bresser-Pereira and Gala (2008).

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Bresser-Pereira and Gala (2008) argument for the relationship between the appreciation of the real exchange rate and de decline in national savings.

Bresser-Pereira and Gala (2008) concludes that domestic savings are a function of the real exchange rate.

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The argument Bresser-Pereira and Gala (2008) present explains why national savings fall when there is an overvaluation of the real exchange rate.

Nevertheless, why does the overvaluation of the real exchange rate increase foreign saving, which replaces decreasing national savings?

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The aims of this work are twofold:

1- show the FISF-circuit to open economies and its link with the real exchange rate in order to demonstrate that the distribution of aggregate savings between its national and foreign parts depends on the level of the real exchange rate (domestic investment causes savings; but, savings should not be necessarily restricted to the domestic part of an open economy).

2- show that the government budget deficits do not bring forward a picture where investment is constrained by national savings as it is argued by the conventional wisdom (the twin deficits issue).

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Why does the overvaluation of the real exchange rate increase foreign saving, which replaces decreasing national savings?

What is the mechanism related to the appreciation of the real exchange rate that leads to an increase in foreign saving?

These questions may be answered by using national income accounts and FISF-circuit in the case of open economies.

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$$S - I = NX = CA = NFI = - FS \qquad (1)$$

Where,

S = national savings,

I = domestic investment,

NX = net exports of goods and services,

CA = current account balance,

NFI = net foreign Investment,

FS = foreign saving.

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Assuming for the sake of simplicity that investment goods are just capital goods (KG),

$$I = KGO + MKG - XKG \qquad (2)$$

KGO = domestic output of KG,

MKG = imports of KG,

XKG = exports of KG,

KGO + MKG – XKG = implied consumption of KG.

Thus,

$$S = NX + I = X - M + KGO + MKG – XKG \qquad (3)$$

where X and M are national exports and imports of goods and services.

For the sake of simplicity we assume that there are no external transactions on services and there are only two kinds of goods, consumption goods and capital goods. Thus, X = XCG + XKG and M = MCG + MKG, where XCG and XKG are exports of consumption goods and of capital goods respectively, and MCG and MKG are imports of consumption goods and of capital goods respectively.

Therefore, equation (3) becomes:

$$S = NX + I = XCG + XKG - (MCG + MKG) + KGO + MKG - XKG, \text{ or}$$

$$S = NX + I = XCG - MCG + KGO = CA + I \qquad (4)$$

Since from equation (2) $I = KGO + MKG - XKG$,

equation 4 becomes:

$$XCG - MCG + KGO = CA + KGO + MKG - XKG, \text{ or}$$

$$XCG - MCG = CA + MKG - XKG \qquad (5)$$

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Equation (4): net exports of consumption goods are part of national savings.

$$S = NX + I = XCG - MCG + KGO = CA + I \qquad (4)$$

Equation (5): when CA = 0, if XCG > MCG, then MKG > XKG,

$$XCG - MCG = CA + MKG - XKG \qquad (5)$$

i.e. net exports of consumption goods are exchanged by (net) imports of capital goods in order to meet domestic investment demand.

Price elasticities of imports and exports > 0

an appreciation of the real exchange rate leads to:

a fall in (XCG - MCG) and to a rise in (MKG - XKG) and to a fall in net exports.

$$XCG - MCG = CA + MKG - XKG \qquad (5)$$

Following accounting identities a fall of the net exports is equal to the fall in national savings.

Thus, real exchange rate appreciation may lead to a picture that shows net imports of capital goods without net exports of consumption goods (i.e. national savings) as its counterpart.

Since net exports of CG are part of national savings (eq. 4), after the real exchange rate appreciation, this part of national savings is no longer the counterpart of the net imports of capital goods (i.e., investment).

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Thus, which is the counterpart of the net imports of capital goods (i.e. investment) after the real exchange rate appreciation?

The answer may be associated with the proposition that investment precedes savings.

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Closed economy: investment produces income and, via the multiplier, generates national savings (Keynes).

In the open economy, exports also play this role: exports produce income and, via the multiplier, savings emerge.

When the receipts of exports are exchanged for the imports of capital goods (KGs), this is equivalent to exports being domestic investment proper, i.e. as if they were the domestic production of KGs.

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Just as it happens with investment, exports produce income, consumption and national savings.

The difference is that instead of producing KGs to meet investment demand, there will be production of goods to be sold in foreign markets; its receipts will be used to import KGs, thereby meeting investment demand.

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After the real exchange rate appreciation:

net exports ↓, national savings ↓, and the exchange of exported goods for the imports of KGs will be, at least partially, interrupted.

Part a parcel of the imports of KGs (part of investment) will no longer have a counterpart in national savings. It will have its counterpart in the absorption of foreign savings (CA deficit).

For the rest of the world (trade partners): depreciation of the real exchange rate → net exports ↑, national savings ↑.

Part of the investment (the imports of KGs) of the domestic country boosts savings in the rest of the world, and not national savings in the domestic country. Equation (5) is a good tool to show this process.

$$XCG - MCG = CA + MKG - XKG \qquad (5)$$

When the real exchange rate appreciates:

part of the stimulus from domestic investment to the formation of savings leaks to the rest of the world, thereby affecting national and foreign savings.

There is the substitution of foreign saving for national savings (Bresser-Pereira and Gala (2008)).

Investment causes savings, but the latter is not necessarily restricted to the domestic economy.

Domestic investment can boost savings overseas.

In the domestic economy, the distribution of aggregate savings between its national and foreign parts depends on the level of the real exchange rate.

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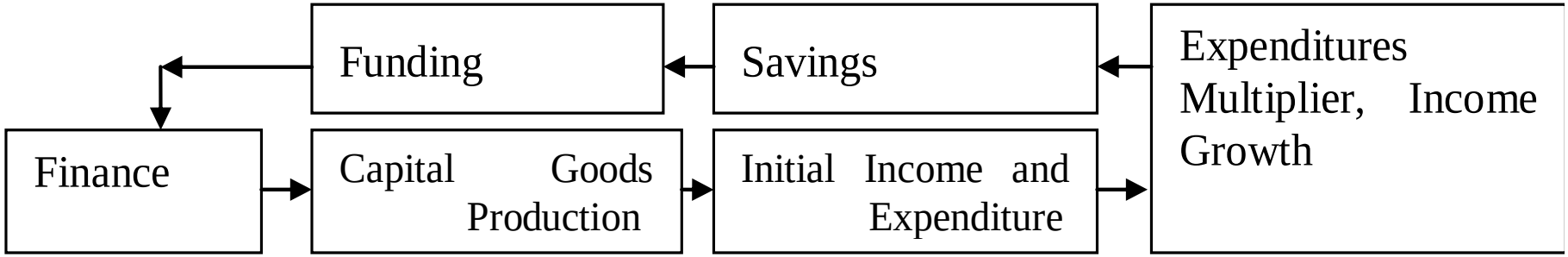
This process and the role of the real exchange rate in determining national and foreign savings can be shown by using the Finance-Investment-Savings-Funding (FISF) circuit for the open economy.

The FISF circuit was elaborated by Keynes (1937a, 1937b) in the case of a closed economy and is shown in Flowchart 1.

Flowchart 1 – FISF Circuit to Closed Economy



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We intend to show that FISF-circuit is also valid for open economies – many cases are possible, but we show at least one case that is sufficient enough to prove that the FISF-circuit to open economies is valid.

FISF-circuit is more complex in the open economy: the international financial system and international trade are involved with this circuit.

We assume two countries, W and Z, whose incomes are not necessarily at the full employment level.

Both economies produce capital goods (KG) and consumer goods (CG).

W exports KG to Z and the latter exports CG to the former in a way that both economies show that CA = 0.

We further assume that net receipts of factor income from abroad, interest on the government debt paid to foreigners, and foreign transfers are all zero.

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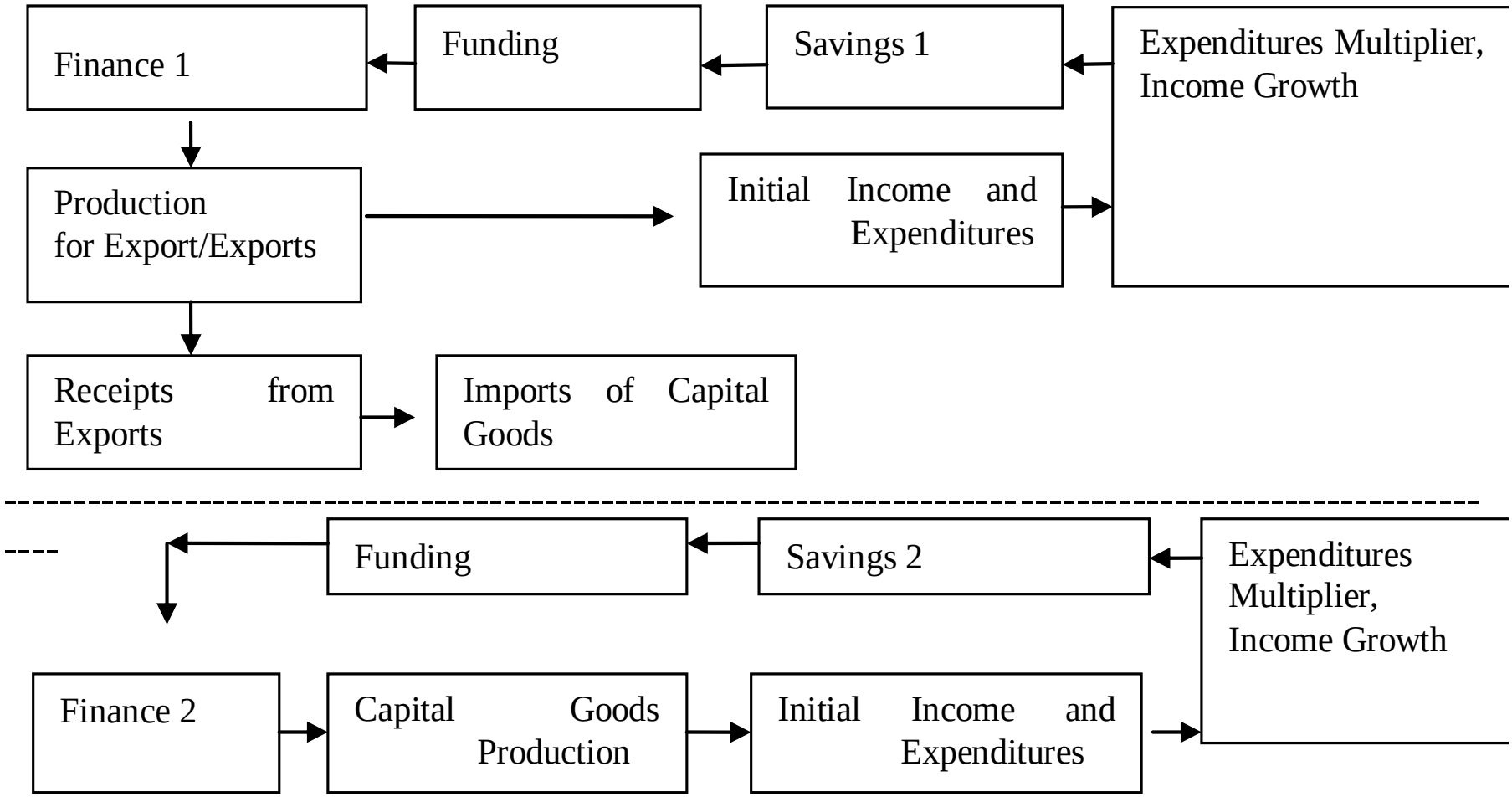
Flowchart 2 - FISF Circuit to the Open Economy Z - Balanced Current Account



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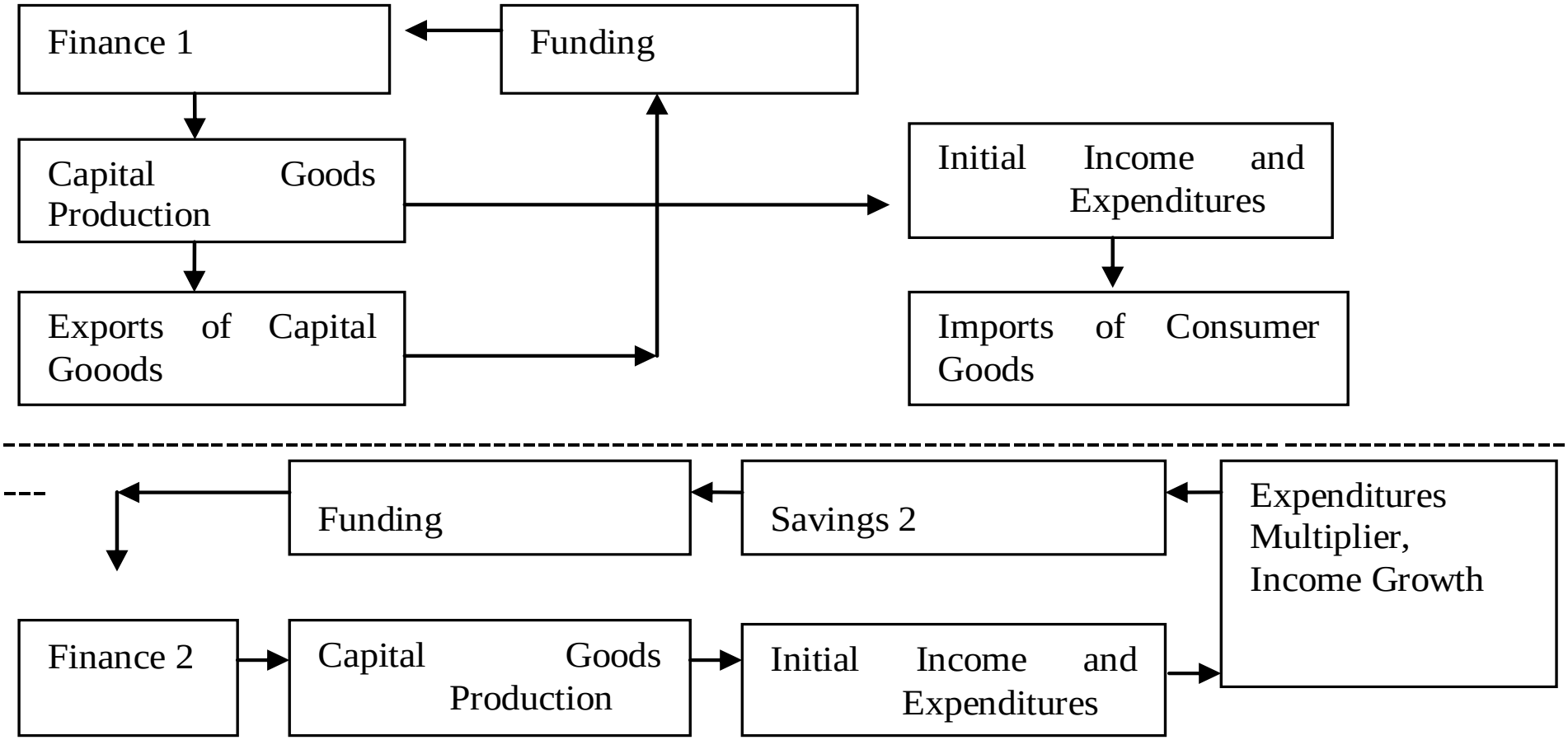
Flowchart 3 - FISF Circuit to the Open Economy W - Balanced Current Account



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The W and Z current accounts are balanced in Flowcharts 2 and 3.

What happens with the FISF-circuit in Z and W when the Z's real exchange rate appreciates?

The real exchange rate overvaluation in Z entails, by symmetry, real exchange rate devaluation in W.

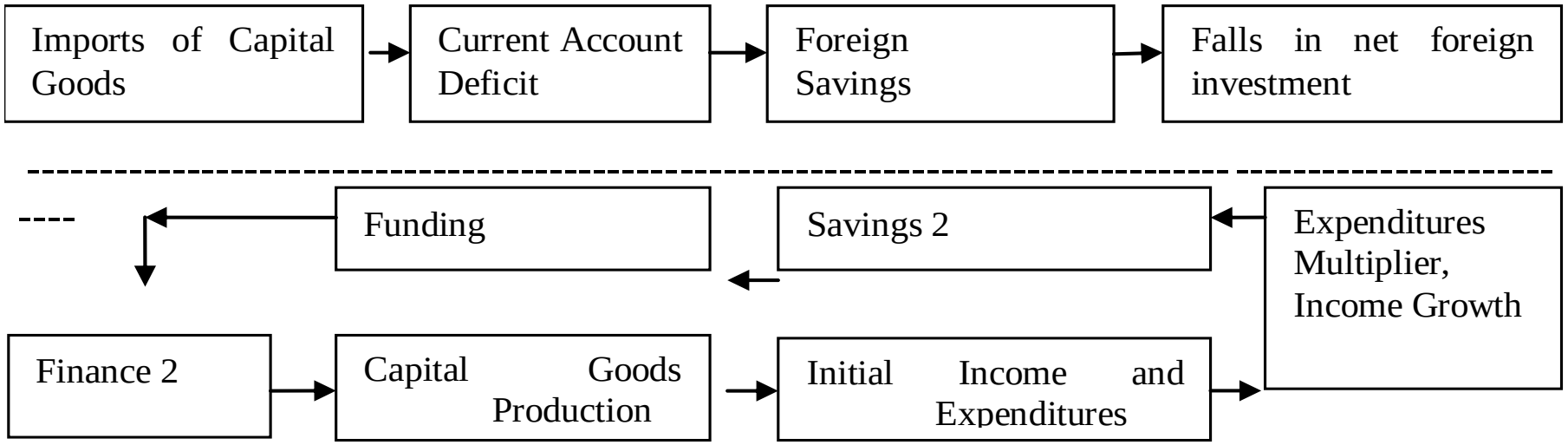
The exchange rate appreciation in Z stimulates its imports and curtails its exports. The opposite happens in W.

To simplify the argument, suppose that Z's exports fall to zero, whereas its imports do not rise.

Imports from W drop to zero and its exports remain at the same level

Let us also assume that the levels of investment in Z and W do not change.

Flowchart 4 - FISF Circuit to the Open Economy Z - Unbalanced Current Account



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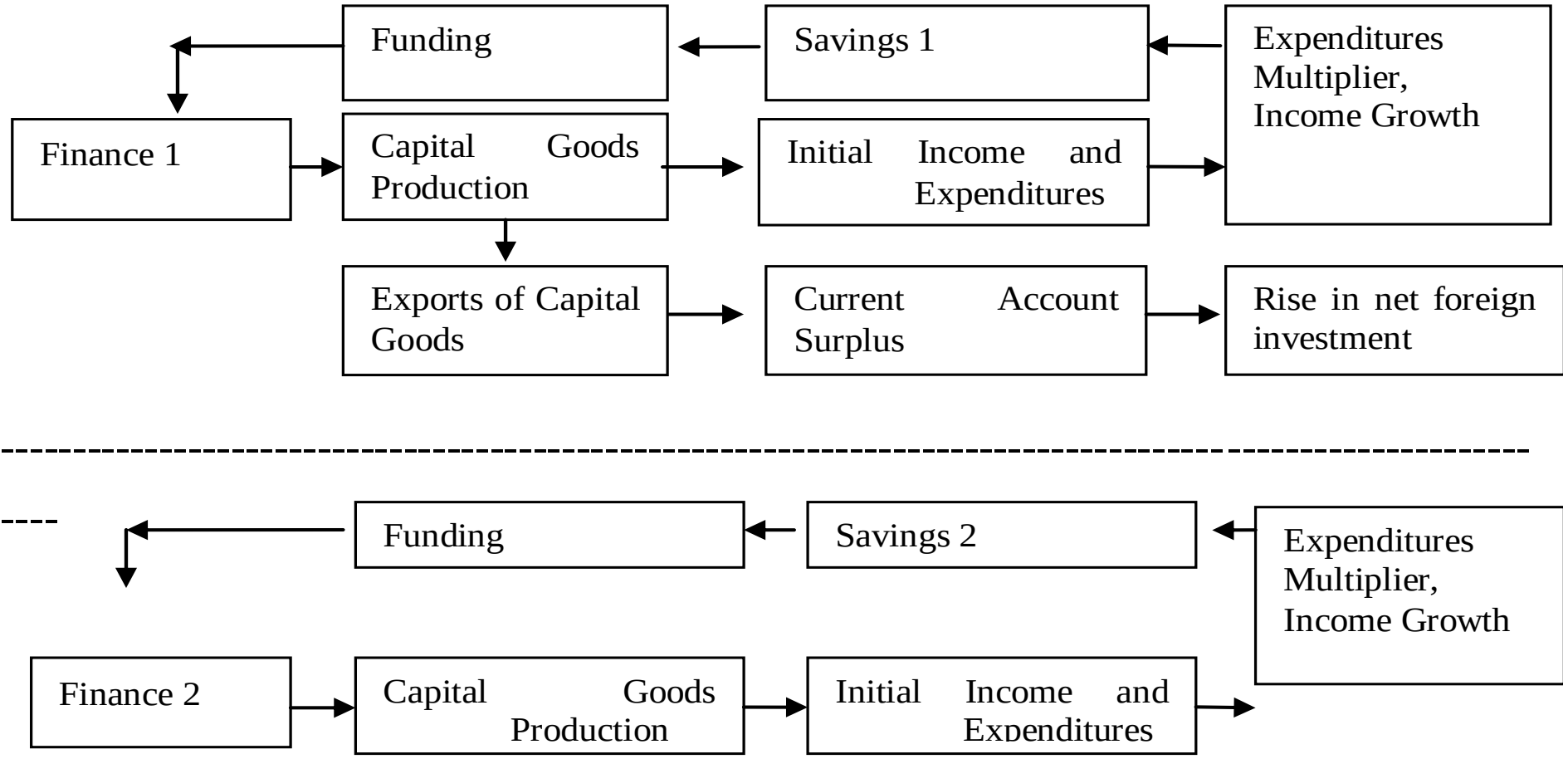
Flowchart 5 - FISF Circuit to the Open Economy W - Unbalanced Current Account



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After the real exchange rate depreciation (appreciation) in W (Z), net exports grow in W since its KG exports remain unchanged and its CG imports drop to zero.

This is the counterpart of KG imports from Z, i.e. KG exports from W and its national savings, which its net Exports bring about, are the counterpart of investment In Z.

In addition to this, aggregate investment equals national plus foreign savings in both W and Z countries.

After the real exchange rate appreciation in Z the stimulus from investment to create savings in this country leaks abroad.

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Domestic investment produces savings; nevertheless, the latter should not be necessarily restricted to domestic (open) economy.

The distribution of aggregate savings between its national and foreign parts depends on the level of the real exchange rate.

Budget Deficits, Savings Constraint and Investment

Twin deficits hypothesis:

$$S - I = Y - E = X - M;$$

$$\text{or,} \quad Sp + Sg - I = X - M$$

S and I are national savings and investment,

Y and E national income and expenditure,

X and M national exports and imports of goods and services,

Sp and Sg private and government savings.

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Krugman (1999) investigates if fiscal policy drives the current account and concludes that: "The view that real exchange rates have nothing to do with trade balance is (…) a confusion between accounting identities and behavior (...) although an economy must respect accounting identities, looking at these identities can never be the full analysis. We must ask how the accounting identity is translated into incentives that affect individual behavior (...) There is a widespread view among policymakers that fiscal policy affects the trade deficit directly, rather than through the channel of real exchange rate changes" (p. 4-7).

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Also, "In the standard view fiscal imbalances work through the real exchange rate: a budget deficit leads to a real appreciation, which reduces the competitiveness of a country's industry and thus leads to a trade deficit (...) McKinnon (1984) has argued strongly that the real exchange rate needs to be changed to adjust the trade balance only when an economy is insular, that is, closed to capital movement. He argues that when capital is mobile, savings-investment gaps are directly reflected in trade balances, with no need for relative price changes" (p.13-15).

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And, “However, we have seen that there is no direct channel by which the savings-investment balance somehow gets translated into the trade balance without affecting the real exchange rate” (p. 24).

Krugman (1999) argues that the appreciation of the real exchange rate is the channel through which budget deficits can worsen the current account.

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Although Krugman (op. cit.) criticises the statement that ‘savings-investment gaps are directly reflected in trade balances, with no need for relative price changes’, his argument about the twin deficits issue is incomplete or at least not clear.

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Krugman (1999) explains the twin deficits by what he calls the standard view and points out that:

"In the standard view a budget deficit is not offset by an increase in private savings. Instead, it leads to a reduction in aggregate national savings relative to investment demand. This fall in savings leads to a rise in the real interest rate. The rise in the interest rate in turn (...) leads to a rise in the real exchange rate. With home production more expensive relative to foreign, imports rise and exports fall, leading to an external deficit" (p. 5).

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Krugman (1999) argues that budget deficit leads to a reduction in national savings.

In his argument the reduction of national savings is not the consequence, but, instead, it is the cause of real exchange rate changes.

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The savings-investment identity presented by Krugman (1999), $S - I = Y - E$, shows that national expenditure (E) and national savings (S) may be linked.

But, as this author stressed,

"although an economy must respect accounting identities, looking at these identities can never be the full analysis. We must ask how the accounting identity is translated into incentives that affect individual behavior"

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Krugman (1999) argument needs full explanation of the channels through which the budget deficit reduces national savings (relative to investment demand).

Income account identities: net exports and domestic output of capital goods correspond to national savings and are related to the real flow of national savings (in the circular flow of income model)

Changes in national savings are related to changes in net exports and/or in domestic output of capital goods. An explanation for the channels through which the budget deficit reduces national savings would be the decline of net exports due to the real exchange rate appreciation.

Krugman (op. cit.) cannot advocate this proposition since in his argument the real exchange rate appreciation is a consequence of the fall in the national savings and not the other way round.

Another explanation is that government expenditure or a budget deficit boosts growth and as a consequence imports rise and net exports fall without relative price changes.

Although this is a possibility it does not necessarily happens. It can be possible, for example, that in the context of increasing returns, growth also boosts exports and the net exports do not change.

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Finally, it should be argued that the reduction in national savings is due to a decline in the domestic output of capital goods and this, in turn, is due to the budget deficit.

But why should the rise in government expenditure, or a budget deficit, reduces the domestic production of capital goods?

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The standard explanation is that for a given gross national product at full employment, a rise in government consumption requires a decline in the domestic output of capital goods and therefore a fall in national savings that is necessary for an increase in the domestic production of consumption goods.

In other words, in the context of full employment, there is a substitution of the capital goods production by the consumption goods production due to the budget deficit.

In this case, Krugman's (1999) argument is mistaken since it tacitly assumes that KG, intended to produce other KG, be transformed into KG intended to produce consumption goods in order to meet the increase in government expenditure and the decline in national savings.

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Although Krugman (1999) criticises the view that links directly budget deficit to trade deficit, this author does not go further to investigate the channels through which budget deficits and national savings are linked and, therefore, his analysis is at least incomplete.

In the Keynesian perspective investment is prior to savings and depends on the interest rate and on the subjective (conventional) expectation of the entrepreneurs about future demand and profits. On the other hand, the interest rate is determined in the context of the liquidity preference theory.

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As Krugman (1999) argues, the appreciation of the real exchange rate is the channel through which budget deficits can worsen the CA. However, the process unfolds with a different causal nexus advocated by this contribution. In the Keynesian perspective the channel through which the budget deficit entails a CA deficit is not a decline in national savings that leads to a rise in the real interest rate and to a real exchange rate appreciation.

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In other words, there is no national savings constraint on investment.

The current account deficit due to the budget deficit occurs when the latter leads through others channels to a real exchange rate appreciation. However, there is no systematic relationship between expansionary fiscal policy (budget deficit) and real exchange rate appreciation.

Therefore, the power of the twin deficits hypothesis is low in the Keynesian view.

In Krugman's (1999) view:

budget deficit → decline in national savings → rise in the real interest rate → real exchange rate appreciation → CA deficit.

In the Keynesian view:

budget deficit → possibility of real exchange rate appreciation → decline in net exports and as a consequence reduction in national savings and CA deficit → increase in (absorption of) foreign saving.

When the budget deficit entails an appreciation of the real exchange rate net exports fall and, therefore, national savings fall and the current account worsens (i.e. foreign saving rise), but it does not mean that investment is constrained by the reduction in national savings.

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As was shown above, real exchange rate changes do not affect the beginning of the FISF-circuit; it affect the final part of this circuit since it trigger the substitution between national and foreign savings. In this circuit investment takes place prior to the other variables, except for the finance. Income depends on investment and government revenues and savings depend on income.

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Thus, in the Keynesian perspective, even when government budget deficit affects the real exchange rate, fiscal policy is not able to lead the economy to a picture where investment is constrained by savings. Moreover, after the real exchange rate appreciation the sum between national and foreign savings remains the same if and when the level of investment remains the same.

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If in some way government budget deficits change the relative prices of the economy, they can trigger the substitution between national and foreign savings and can lead to worsening the current account balance. Savings depend on investment, but, the real exchange rate appreciation leads the stimulus from domestic investment to formation of national savings that leak abroad.

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Thus, the constraint on investment (and on growth) that is possible to emerge due to budget deficits is one of external nature, although the link between budget deficit and real exchange rate appreciation is weak. Moreover, this external constraint on investment has a long-run character insofar as current account deficits may be financed by foreign currency in the short-run.

CONCLUSIONS

Few studies in the Post Keynesian tradition address the relationship between the real exchange rate, national savings, foreign saving and investment.

Moreover, there is not a study that shows how the FISF-circuit and its channels work in open economies.

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We showed by using national income accounts and FISF-circuit to open economies that the distribution of aggregate savings between the national and the foreign parts depends on the level of the real exchange rate.

When the real exchange rate appreciates, part of the stimulus from domestic investment to the formation of savings leaks abroad, increasing thereby foreign savings and decreasing national savings.

Finally, issues concerning relationships between fiscal policy, the current account, and the real exchange rate were addressed.

Krugman (1999) investigates if fiscal policy drives the current account and concludes that the appreciation of the real exchange rate is the channel through which budget deficits can worsen the current account.

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However, we show that his argument about the twin deficits issue is inconsistent or at least incomplete because it does not explain why budget deficits lead to a decline in national savings when the focus of the analysis is on the real side of the economy.

From the Keynesian view the process unfolds with a different causal nexus in relation the one proposed by Krugman and by the Standard view.

Although the power of the twin deficits hypothesis is low in the Keynesian view, budget deficits may worsen the current account through the real exchange rate appreciation. However, it does not mean that investment is constrained by national savings.

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Real exchange rate changes affect the final part of the FISF-circuit since it triggers the substitution between national and foreign savings.

When the fiscal policy affects the real exchange rate it affects savings and the current account, but savings are at the end of the FISF-circuit (end of causal nexus); there is, thus, no savings constraint on investment.

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If in some way government budget deficits lead to the appreciation of the real exchange rate, the stimulus from domestic investment to formation of national savings leaks abroad.

Thus, the constraint on investment (and on growth) that is possible to emerge due to budget deficits is one of external nature, although the link between budget deficit and real exchange rate appreciation is weak.