

# Balance of Payments Analysis

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## **I. Principles**

Balance of payments accounting is based on the double entry principle with every item booked as a credit and a debit. Therefore, the overall result will be in balance and the equation for the balance of payments will be zero. Deficits and surpluses can only show up in the sub balances such as in the balances of trade, services, unilateral transfers and the capital and financial account.

The registration of a current account deficit essentially means that a country spends more than it produces in a given period. The difference between absorption at home and domestic production constitutes the accumulation of debt or the sale of domestic assets to non-residents. While it is obvious that in accounting terms the balance of payments must be in equilibrium, excess spending implies debt accumulation or loss of ownership. These, however, are not directly registered in the balance of payments statistics. They show up merely indirectly and in a significant way only later on in the account called investment income where the payments for interest, dividends and rents to foreigners will be booked as a debit.

A negative current account balance requires a positive capital and financial account and this says that the holding of domestic assets by foreigners must increase. The simple rule states: when the residents of a country (individuals, businesses, and government) sell more assets to foreigners than they buy from foreigners, the capital and financial account will be positive. It is exactly this surplus in the capital and financial account that is being used to buy additional goods and services from abroad, which are registered as debit in the current account.

Leaving aside statistical problems (which are entered as a balancing item in the section for “statistical

discrepancies”), the basics of the balance of payments accounting framework can be simplified as a set of equations.

A typical Balance of Payments (BP) contains three major sub balances: the current account (CA), the capital and financial account (CF) and the change of reserves account ( $\Delta R$ ). All items are registered as flows or as a change of stocks. The reserves account is seen as a form of compensatory financing and as such a net increase of the foreign exchange reserves receives a minus sign because it implicitly represents capital exports.<sup>i</sup>

A simple balance of payments equation is given by

$$(I) \quad BP = CA + CF - \Delta R = 0$$

Bringing the change of reserves ( $\Delta R$ ) to the right side, one gets

$$(II) \quad BP = CA + CF = \Delta R$$

In this form the equation demonstrates that when a country's current account (CA) and its capital and financial account (CF) should not balance, the discrepancy will show up as a change in the country's foreign exchange reserve position ( $\Delta R$ ). If a country's reserves are depleted ( $R = 0$ ) or if a certain level of foreign exchange reserves must be maintained ( $\Delta R = 0$ ) a current account deficit must fully be compensated by a net inflow of foreign capital. If the country can no longer obtain foreign financing, the burden of adaptation falls on foreign trade. On the other hand, a country will accumulate foreign exchange reserves when the sum of the current account (CA) and the capital and financial account (CF) are positive.

In order to gain an understanding of the basic mechanisms and their economic implications, a closer look at the major sub balances will be required. All three major accounts of the balance of payments -- the current account, the financial and capital account and the reserves account -- are not only connected in terms of accounting procedures but also as to their economic content.

The current account balance (CA) contains three major items: the net result of the foreign trade in goods (NXG), net exports of services (NXS), net foreign investment income (NFI), and net unilateral

transfers (NTR). Any of these sub-accounts can have a surplus or a deficit just like the current account as a whole.

$$(III) \quad CA = NXG + NXS + NFI + NTR$$

The capital and financial account (CF) registers capital flows with an inflow as credit (+) and an outflow as debit (-). Thus, an increase of the assets abroad held by the residents will be booked as a debit, while the increase of liabilities towards foreigners represents a credit. The increase of liabilities to foreigners constitutes capital imports (CIM) and the increase of net assets against foreigners are capital exports (CEX). The balance equation for the capital and financial account (CF) then is:

$$(IV) \quad CF = CIM - CEX$$

When the current account is in balance ( $CA = 0$ ), the capital account automatically is in balance, too. Outflows equal inflows. However, when the current account is in deficit ( $CA < 0$ ), a positive capital and financial account is required ( $CF > 0$ ). In order to pay for the excess of domestic absorption as registered by a negative current account, there must occur a net sale of assets or, in other words, foreign ownership of domestic assets must increase, i.e. non-residents must show up who lend money or buy financial or real assets. Therefore, a positive capital and financial account as the counterpart to a negative current account implies that this country is accumulating debt or that it is losing out on its stock of assets.

One can simplify the current account by leaving out the unilateral transfers (assuming they are zero). As all export items in this account are registered as credit (+) and the import items are registered as debit (-), the current account can be reduced to an account called net exports (NX).

$$(V) \quad NX = EX - IM$$

The balance of payments equation then becomes

$$(VI) \quad BP = (EX - IM) + (CIM - CEX)$$

and the overall balance of payments equation can be reduced to

$$(VII) \quad BP = NX + CF$$

Under the constraint that a certain level of foreign exchange reserves must be maintained ( $\Delta R = 0$ )<sup>ii</sup> the balance becomes

$$(VIII) \quad NX + CF = 0$$

Thus, negative net exports ( $NX < 0$ ) require a positive capital flow ( $CF > 0$ ) and vice versa.

$$(IX) \quad -NX = CF$$

$$(X) \quad NX = -CF$$

When one country has a deficit in the current account, some other country or group of countries must have a surplus. If the countries that have a current account surplus finance the deficit country by exporting capital, there will be no balance of payment problem in the short run. It may seem as if a country could go on forever importing more goods and services than it exports. There seems to be no reason for concern, and usually this is where a conventional analysis would stop probably only adding that flexible exchange rates will do the balancing act. But while in fact the game can go on for a long time, limits will show up sooner or later. These limits will appear in the net investment position.

## II. Balance of Payments Analysis

### II.1 The Macro-Accounting Framework

Within the framework of Macroeconomic Accounting, aggregate spending is composed of Private consumption (C), private Investment (IPR), government expenditure (G), and net exports (EX – IM). In terms of the use of income, the components are private consumption (C), private savings (SPR) and tax payments (TA).

With

$$(I) \quad Y = C + IPR + C + EX - IM$$

and

$$(II) \quad Y = C + SPR + TA$$

these two equations render

$$(III) \quad C + IPR + C + EX - IM = C + SPR + TA$$

Then:

$$(IV) \quad (EX - IM) = (SPR - IPR) + (TA - G)$$

Public savings is given by  $(TA - G)$ , so that the government surplus or deficit together with the private savings balance (SPR) constitute national savings (SNAT)

$$(V) \quad (TA - G) + SPR = SNAT$$

Based on equation III with  $EX - IM = NX$  and  $SNAT = S$   
one gets

$$(V) \quad NX + I = S$$

$$(VI) \quad NX = S - I$$

In this framework, the current account balance (ignoring unilateral transfers) reflects the internal balance between investment and savings. This way, a country which generates higher national savings than it uses for financing investment, will show a trade surplus.

$$(VII) \quad S > I \text{ implies } NX > 0$$

Given that

(VIII)  $\text{NX} = \text{CF}$

(see above chapter I, equation VII)

this country will also be a net capital exporter.

## II.2 Additional Aspects

There are three problem areas which are often neglected in conventional balance of payments analyses. Firstly, we will have to consider the long-term effects of international payment imbalances; secondly, attention must be drawn to the question how international credit expansion affects the global money supply; thirdly, we must also ask about the implications for the capital structure of the economies involved.

The payment of interest to foreigners gets a negative sign in the current account. If this is not matched by exports of some other item in the current account, the net result with other things being equal will be that the current account becomes negative and the way to pay for that will be by asset sales including debt instruments.

One of the long-term consequences of current account deficits will be that more domestic assets will go into foreign ownership. Each sale of assets implies the loss of domestic ownership and in the long run the consequence will be that the country is losing its autonomy. But while the popular concern is drawn to criticize the sale of visible assets -- such as some national landmark or a company with a prominent national pedigree -- it is debt which really matters and in particular when this debt is accrued by the government.

The visible capital imports such as foreign direct investment are usually meant to stay<sup>iii</sup>, and they are also mostly also quite low compared to the flow of debt instruments.<sup>iv</sup> In the long run it makes a decisive difference if the capital account will be financed mainly by foreign direct investment or through debt accumulation and even more so if it is government bonds that account for the overwhelming share of the transactions. The sale of bonds by the government is not just a change in private ownership: it implies that additional liquidity is being created and that the stock of outstanding

public debt is rising.<sup>v</sup> Such a case implies the emergence of a foreign debt problem, and when the debtor country is also the one which emits the major world reserve currency, a problem of global proportions is on the rise.

The current account includes the interest payments on debt, and the dividends and rents that are to be paid to foreign holders, all of which gets booked in the sub account called investment income. A persistently positive capital account will automatically drive the current account into a deficit beyond the trade of goods. While the current account deficit may grow slowly at the beginning of a prolonged debt cycle and mainly at first rise due to the import of foreign goods, it will virtually explode later on due to the payment of investment income. Then, the current account deficit will widen not because of the import of merchandise -- which so far has had a stimulative effect on both the debtor and the creditor's economies -- but because the deficit in the current account will widen due to financial obligations. The end result would be the crowding out of physical imports and other services beyond investment income.

Before this would happen on a grand scale, the creditors most likely will perceive what is going on. But different from a small economy, which may be forced into default or be kept under IMF rule, prolonged and substantial foreign indebtedness by the country which holds the privilege of creating international reserves may be welcomed because its debt expansion provides the basis for a global boom. The expansion of debt by the issuer of the international reserve medium augments the stock of international reserves and the increase of the reserves works like a growth of the global money supply<sup>vi</sup>.

The country which emits the international reserve currency, as it is currently the case with the United States, does not face a foreign exchange constraint; thus there will be no immediate limit for this process to go to its extremes. Additionally, an expansion of this kind must not be accompanied by price inflation right away. The prices for tradable goods may stay low for a considerable period of time<sup>vii</sup> and instead of price inflation the bubble emerges in the asset markets. After all it is the transaction in the capital account of the balance of payments -- the buying and selling of debt instruments -- which lies at the heart of the process and it is here where the music plays in terms of the bubble.

Bubbles, however, have the nasty habit of imploding because they are built on some unsustainable element. This factor within an international debt cycle involves interest payments and this has consequences for international trade.

In its general form a debt cycle will be different for the issuer of the international reserve medium mainly only in so far as the potential extent and duration of the process may be much larger and longer. The stock of dollar reserves for the United States is unlimited. What is ultimately at stake for the U.S. is not its reserve position but its role as the issuer of the global reserve currency.

Once the expectation takes hold that the United States will use additional bond and other asset sales mainly for debt service purposes and less and less so in order to finance the import of goods, the creditor countries are faced with the loss of the advantage they want to enjoy. The strategy of the creditor countries of maintaining undervalued currencies by buying U.S. assets in order to gain advantages for their export industry no longer makes sense when most of the newly created U.S. debt simply goes into debt service. Faced with the imminent collapse of their U.S. dollar asset positions, the creditors will scramble for the remains. The inexorable result will be the collapse of the asset market together with a dollar crash.

The worst part of such a process would come when the financial crisis becomes an economic crisis and the economic crisis turns into a social and political crisis. The longer the debt cycle has continued and the more pronounced it was, the more deeply the capital structures in both the debtor and the creditor country were transformed. It may be as hard for the creditor countries to re-adapt their industries to the new constellation as it will be for the United States. While the creditor countries will be faced with the breakdown of their major export market, the U.S. will be faced with a situation that there is no longer a sufficient number of domestic suppliers to substitute for the contraction of imports. It will be at this point where the price inflation sets in.

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<sup>i</sup> Foreign exchange reserve are held by a country's central bank. Their function is to serve as an ammunition chest for intervention in the currency markets. As a result of buying foreign currencies in order to keep the exchange rate competitive, a country will accumulate foreign exchange reserves.

<sup>ii</sup> The same would hold if the country has run out of foreign exchange reserves.

<sup>iii</sup> Among industrial countries with close economic ties, foreign direct investment usually balance out over the long run, and in the case of developing countries, a positive inflow of direct investment is a major source of technology transfer and a boost for economic growth and development.

<sup>iv</sup> In the U.S., for example, foreign direct investment inflows in ... amounted to .... In contrast to bonds which amounted

<sup>v</sup> One might actually call this a hideous kind of cheating because the government accumulates debt by creating the illusion

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that it would not affect the private wealth position of its residents. It also means that the domestic interest monetary interest is pushed below the natural rate.

<sup>vi</sup>As it is shown by central bank balance sheets, the circulating domestic money forms a debit item, while foreign reserves are part of the credit side. All other things being equal, an increase in foreign reserves implies money creation.

<sup>vii</sup>Swamping the world markets and the market of the debtor country in particular with cheap goods may actually have a deflationary effect.

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