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International Capital Flows

Tools: Balance of international payments; dynamics of net foreign assets.

Key Words: Trade balance; net exports; current account; capital account; capital flows; net foreign assets.

Big Ideas:

- A current account deficit implies that a country is borrowing from the rest of the world; we refer to this as a capital inflow. A current account surplus — a capital outflow — implies that a country is lending to the rest of the world.
- A capital inflow (borrowing) can lead to problems if it does not support productive activities. For this reason, analysts often focus on the reasons for capital flows as well as their magnitude.
- The dynamics of net foreign assets are analogous to government debt dynamics.

International trade in goods and assets are at all-time highs all over the world. In these notes, we describe the measurement system used to track such trades: the balance of payments (BOP), a close relative of the National Income and Product Accounts (NIPA) focusing on international transactions. This is simply accounting, in the sense that we're counting things in a consistent way and not applying any particular theoretical framework. Nevertheless, an important idea emerges: Countries that run trade deficits can also be thought of as attracting foreign investment or borrowing from abroad. This connection between flows of goods and flows of assets gives us a new perspective on issues such as persistent trade deficits.

18.1 Trade in goods, services, and income

The balance of payments starts with a measurement system for trade in goods and services and related flows of income. See Table 18.1.

Two closely-related measures are commonly reported. The *merchandise trade balance* is similar to net exports, but includes only trade in goods ("merchandise"). It is reported monthly, and so is more readily available than the quarterly NIPA data, which are broader. Service trade includes such things as foreign tourists visiting the US (hotels, restaurants), consulting services provided by US firms for foreign clients, and foreign students attending US universities. Since the US currently runs a modest surplus in service trade, the merchandise trade deficit (slightly) overstates the deficit for trade in goods and services (net exports). The *current account balance* is a broader concept than net exports; it consists of net exports plus net receipts of capital income, labor income, taxes, and transfers from abroad (*net foreign income* for short). Mathematically,

$$CA \;=\; NX + \text{Net Foreign Income},$$

where CA is the current account and NX is (still) net exports.

Net foreign income includes such items as payment of interest on US government bonds owned by foreign central banks (a negative entry), salaries received by American consultants working in Tokyo (a positive entry), and salaries paid to Russian hockey players in the US (a negative entry). We see

Table 18.1: US balance of payments.

Net Exports of Goods and Services	−508.3
Net Labor Income from ROW	−9.4
Net Capital Income from ROW	247.4
Unilateral Current Transfers from ROW	−119.2
Current and Capital Account	**−389.6**
Net direct investment in US	−225.4
Net Purchase of Securities	167.0
Net loans and other	243.7
Financial derivatives	54.4
Financial Account (inflows)	**239.6**
Statistical Discrepancy	**149.9**

The numbers are for 2014, billions of US dollars. ROW means "rest of world." There are modest differences between these balance of payments measures and quarterly NIPA measures.

in Table 18.1 that the US was a net recipient of capital income and a net payer of labor income.

The current account balance is, thus, the broadest measure of a country's flow of "current" payments to and from the rest of the world. In the US, the difference between net exports and the current account usually is modest. In other countries, the flows of labor and capital income may play larger roles.

18.2 Trade in assets

There are also flows related to capital and financial transactions. You can see in Table 18.1 that the US in 2012 was the net recipient of $446.3b of capital and financial "inflows," meaning that foreigners' purchases of US assets were greater than US nationals' purchases of foreign assets by this amount. By convention, this is reported as a positive entry, even though it corresponds to an accumulation of liabilities with respect to the rest of the world. Foreigners' purchases of domestic assets consisted of direct investment (a controlling interest in a US business); purchases of equity and bonds issued by US corporations; purchases of US government and agency issues; loans to US borrowers; and some other minor items we won't bother to enumerate.

The central insight we gain from the balance of payments is that these asset transactions must match the current transactions:

$$\text{Current Account} + \text{Capital and Financial Account} = 0.$$

It's not quite true in the data, because the numbers are not entirely accurate. We add a balancing item ("statistical discrepancy" or "errors and omissions") to make up the difference. The point is that any deficit in the current account must be financed by a capital inflow: selling assets or accumulating liabilities with respect to the rest of the world. The same accounting truism applies to a firm or an individual. If your expenditures exceed your receipts, you need to sell assets or borrow to finance the difference. Firms do this regularly when they make major additions to plant and equipment. And households often do the same when they buy houses.

The interesting thing about this accounting identity is that it gives us a different perspective on current account deficits. If we run a current account deficit as a reflection of a trade deficit, as in the US right now, we're tempted to look at imports and exports as the reason. Perhaps foreign countries are keeping our goods out of their home markets, or pushing down their exchange rates to encourage exports. That's the first reaction most people

have. But now we know that a current account deficit must correspond to a capital and financial inflow: Foreign investors are buying our assets. This perspective leads us to think about the investment opportunities in the US and elsewhere in the world that might lead to this. Are US assets particularly attractive? Or are foreign assets unattractive? Both perspectives are right, in the sense that they're true as a matter of accounting arithmetic, but the second one captures more clearly the dynamic aspect of decisions to invest.

18.3 Net foreign assets

The capital and financial account measures net flows of financial claims: changes in asset position, in other words. The balance-sheet position of an economy is referred to as its net international investment position (NIIP) or, simply, net foreign assets (NFA). If a country's claims on the rest of the world exceed their claims on it, then it has positive net foreign assets and is said to be a net creditor. If negative, a net debtor. The position changes over time, as indicated by the capital and financial account. Mathematically, we would say

$$\begin{aligned} NFA_t &= NFA_{t-1} + NX_t \\ &\quad + \text{Net Foreign Income} + \text{Asset Revaluations}. \end{aligned} \tag{18.1}$$

As in most accounting frameworks, there's a connection between the income statement (the "flows" in economics parlance) and the balance sheet (the "stocks").

An analogous relation for an individual might go something like this: Suppose you start with no assets or liabilities and then borrow 50,000 for the first year of your MBA. You spend the entire 50,000 and have no other source of funds, so you have a cash-flow deficit of $-50,000$ for the year. At the end of the year, you have a net asset position of $-50,000$. The bookkeeping is analogous to equation (18.1), with *NFA* analogous to your net worth, *NX* analogous to your annual cash-flow surplus or deficit, and the last two terms ignored to keep things manageable. If we added interest on the debt, that would show up in Net Foreign Income.

Why do we need asset revaluations? By tradition, we measure international investments at market value, so if the value of an asset changes, we need to account for it in NFA. In international investments, asset revaluations occur both through the usual change in prices of equity and bonds and through changes in exchange rates for instruments denominated in foreign currencies.

We report recent numbers for the US in Table 18.2. There we see that the US has a net financial asset position of –$7,019.7b, meaning that foreign

Table 18.2: US net international investment position.

US-owned assets abroad	24,595.5
Direct investment	7,124.0
Corporate equity	6,719.7
Bonds	2,852.8
Loans and other	4,240.2
Reserves & govt	434.3
Financial Derivatives	3,224.5
Foreign-owned assets in the US	31,615.2
Direct investment	6,228.8
Corporate equity	6,665.2
Corporate bonds	4,095.8
US govt (treasuries, currency, official)	6,156.2
Loans and other	5,318.6
Financial Derivatives	3,150.7
Net international investment position	−7,019.7

The numbers are for 2014 yearend, billions of US dollars.

claims on the US exceed US claims on the rest of the world by this amount. The table gives a complete accounting of these positions.

18.4 Sources of external deficits

We'll talk more about the difference between the trade balance and the current account shortly, but for now, let's ignore the difference and consider a trade deficit. If we have a large deficit, should we be worried? Is it a sign that the economy is in trouble? In this and many other cases, it's helpful to consider an analogous situation for a firm. Suppose that a firm is accumulating liabilities. Is that a bad sign? The answer is that it depends what the liabilities are used to finance. If they finance productive investments, then there should be no difficulty servicing the liabilities. In fact, the ability to finance them suggests that someone thinks the investments will pay off. But if the money is wasted (surely you can think of examples!), then investors might be concerned. The same is true of countries — it depends where the funds go.

Consider the flow identity that we saw in Chapter 2:

$$S \;=\; Y - C - G \;=\; I + NX.$$

Typically, this is expressed as a ratio to GDP, with everything measured at

current prices:

$$\frac{S}{Y} = \left(1 - \frac{C+G}{Y}\right) = \frac{I}{Y} + \frac{NX}{Y}.$$

If we run a trade deficit ($NX < 0$), it must (as a matter of accounting) reflect some combination of low saving and high investment (high I). If we borrow from abroad to finance new plant and equipment, and the plant and equipment lead to higher output, we can use the extra output to cover the liabilities. If the investment is ill-considered, then we face the same issue as a firm in a similar situation.

What if we finance household consumption or government purchases? We have to answer the same question: Was the expenditure worthwhile? Here there is room for concern, but a serious answer would depend on the nature of the expenditures.

The Lawson Doctrine, named after British government official Nigel Lawson, makes a distinction between public and private sources of deficits. Recall that we can divide saving into private and government components, so that

$$S_p + S_g = I + NX.$$

In Lawson's view, a trade (or current account) deficit that financed a difference between private saving and investment is fine. But if the external deficit (trade or current account) stems from a government deficit, it's worth a more careful look. In practice, emerging market crises often stem from government deficits that are financed abroad.

18.5 Debt dynamics and sustainability

The net foreign asset position evolves through time, just as government debt does. As with government debt, the focus is traditionally on the ratio to GDP, which can change through either the numerator or denominator. We've seen that NFA changes like this:

$$\begin{aligned} NFA_t &= NFA_{t-1} + NX_t + \text{Net Foreign Interest Income} \\ &= (1 + i_t)NFA_{t-1} + NX_t. \end{aligned}$$

Note that everything here is nominal, including the interest rate i_t on the net foreign asset position. Here, we're skipping asset revaluations and the non-interest component of net foreign income, but we could add them back in later if we thought they were relevant. If the growth rate of nominal GDP is $g_t + \pi_t$, we can write

$$Y_t = (1 + g_t + \pi_t)Y_{t-1}.$$

With these inputs, we see that NX/Y evolves like this:

$$\frac{NFA_t}{Y_t} \approx \frac{NFA_{t-1}}{Y_{t-1}} + (i_t - \pi_t)\frac{NFA_{t-1}}{Y_{t-1}} - g_t\frac{NFA_{t-1}}{Y_{t-1}} + \frac{NX_t}{Y_t}. \tag{18.2}$$

The logic is identical to our analysis of government debt in equation (17.6).

How does the ratio of NFA to GDP change over time? The first issue is what real interest rate $i_t - \pi_t$ we pay on our borrowing. Typically the rate is positive, which tends to increase a positive net foreign asset and decrease a negative one. The second issue of real GDP growth g_t. High growth reduces the ratio of net foreign assets to GDP by increasing the denominator. Finally, a trade surplus or deficit carries over directly to the net foreign asset position.

If a country has a large current account deficit and a large and growing net foreign liability position, it's sometimes said to be *unsustainable*. But if it's unsustainable, what happens? The theory doesn't say, but we can imagine some possibilities: The trade deficit turns to surplus; the country defaults on some or all of its foreign liabilities; and so on. More commonly, this is used to project the growth of NFA over the next few years. If this leads to a large ratio of NFA to GDP, then investors may start to wonder whether they'll be repaid. How large does it have to be to generate concern? It depends on the country and its institutions — just as we learned in studying government debt in Chapter 17.

History tells us, however, that we see deficits and net liabilities in both countries on the brink of trouble (Argentina in the late 1990s) and countries that are performing well (Australia over most of its history). Most analysts would check further and find out what the deficit was financing (plant and equipment or government spending) and how it was structured (debt or equity). If debt, then the maturity and denomination are also relevant.

18.6 Big picture

The bottom line is that the current account deficit and net foreign asset position are important indicators of the state of an economy. Important, yes, but it's not always clear what to make of them. Take a current account deficit. Is a deficit is bad (it sounds bad!) or good (look, people want to invest in our country!)? We need to look at the overall picture and come up with a judgment. It's another piece of the puzzle to consider when deciding whether a country is a good opportunity.

Executive summary

1. There are several measures of current transactions with other countries:
   - The merchandise trade balance measures exports minus imports of goods.
   - Net exports includes trade in services, as well.
   - The current account includes net international factor income, taxes, and transfers.

   We refer to them collectively as "external" balances (deficits or surpluses).
2. The current account is mirrored by an equal and opposite capital and financial account measuring net asset transactions.
3. The net international investment position measures our current net claims on the rest of the world.
4. The flow identity tells us that the external deficit reflects some combination of personal saving, government saving, and investment.

If you're looking for more

For more information:

- In the US, international transactions are reported along with the National Income and Product Accounts by the Bureau of Economic Analysis. See their International Economic Accounts.
- The International Monetary Fund's International Financial Statistics is the best single source of balance of payments and international investment data.
- International standards for BOP data are set by a working committee of the International Monetary Fund. Their web site includes discussions of both conceptual and measurement issues. The annual reports are a good overview. One of the recent highlights: In 2007, the world trade balance was $108b, meaning that countries reported $108b more exports than imports. Since every export must be someone else's import, this can't really be true, but it points to some of the difficult measurement issues faced by the people putting these accounts together.

Symbols used in this chapter

Table 18.3: Chapter 18 symbol table.

Symbol	Definition
CA	Current Account
NX	Net exports
NFA	Net foreign assets
S	Saving
Y	Gross domestic product (= Expenditure = Income)
C	Private consumption
I	Private investment
G	Government purchases of goods and services (not transfers)
S_p	Private saving ($= Y - T - C$)
S_g	Government saving ($= T - G$)
i	Interest rate on net foreign assets
g	Discrete compound growth rate of GDP

In this chapter, we have dealt only with *nominal* variables.

Data used in this chapter

Table 18.4: Chapter 18 data table.

Variable	Source
Current Account (BOP)	BOPBCA
Current Account (NIPA)	NETFI
Net exports of goods and services (NIPA)	NETEXP
Nominal GDP	GDP
Foreign-owned assets in US (+ equals increase)	BOPI
U.S.-owned assets abroad (+ equals decrease)	BOPOA
Income payments (total)	BOPMIT
Income payments on foreign assets in US	BOPMIA
Income receipts (total)	BOPXRT
Income receipts on assets abroad	BOPXR
Statistical discrepancy (BOP)	BOPERR

To retrieve the data online, add the identifier from the source column to http://research.stlouisfed.org/fred2/series/. For example, to retrieve the GDP, point your browser to http://research.stlouisfed.org/fred2/series/GDP

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