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 like persistent trade deficits.

**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. We saw one such measure earlier: the NIPA’s net exports of goods and services (exports minus imports). By this measure, the US ran a balance of –$498b in 2003, a deficit of roughly 5% of its $11 trillion GDP. See Table 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. 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 consists of net exports plus net receipts of capital income, labor income, taxes, and transfers from abroad (net foreign income for short). To summarize:

\[
\text{current account} = \text{net exports} + \text{net foreign income}.
\]

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 in Table 1 that in 2003 the US was a (modest) net recipient of capital income and net payer of labor income.
Table 1: US Balance of Payments, 2003, billions of dollars; ROW means ‘rest of world’

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
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<tbody>
<tr>
<td>Net exports of goods and services</td>
<td>-498.1</td>
</tr>
<tr>
<td>Net labor income from ROW</td>
<td>-5.5</td>
</tr>
<tr>
<td>Net capital income from ROW</td>
<td>38.8</td>
</tr>
<tr>
<td>Net taxes and transfers from ROW</td>
<td>-67.4</td>
</tr>
<tr>
<td><strong>Current account</strong></td>
<td><strong>-530.7</strong></td>
</tr>
<tr>
<td>Net direct investment in US</td>
<td>133.9</td>
</tr>
<tr>
<td>Net purchase of private securities</td>
<td>251.0</td>
</tr>
<tr>
<td>Net purchase of US govt securities</td>
<td>248.6</td>
</tr>
<tr>
<td>Net loans and other</td>
<td>-102.8</td>
</tr>
<tr>
<td><strong>Capital and financial account (inflows)</strong></td>
<td><strong>542.7</strong></td>
</tr>
<tr>
<td><strong>Statistical discrepancy</strong></td>
<td><strong>-12.0</strong></td>
</tr>
</tbody>
</table>

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, there’s little difference between net exports and the current account: in 2003 the current account deficit was only slightly larger than the trade deficit. In other countries the flows of labor and capital income may play a larger role.

In many cases, there’s little difference between the trade balance and the current account. We refer to them generally as **external balances**.

**Trade in assets**

There are also flows related to capital and financial transactions. You can see in Table 1 that the US in 2003 was the net recipient of $542.7b 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, and some other minor items.

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, so 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 selling assets or accumulating liabilities with respect to the rest of the world. The same accounting truism applies to a firm or 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.

**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. In an equation, we would say

\[ B_{t+1} - B_t = rB_t + X_t - M_t + \text{asset revaluations} \]  

(1)

where \( B_t \) denotes net foreign assets, \( rB_t \) is net foreign income, and \( X_t - M_t \) is net exports.

An analogous relation for an individual goes like this. Suppose you start with no assets or liabilities, then borrow 50,000 for the first year of your MBA and 50,000 more for the second year. You spend the entire 50,000 each year and have no other source of funds. After two years you have a net asset position of –100,000. Equation (1) is the same thing for a country. 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 the 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.
Table 2: US Net International Investment Position, 2003 Yearend, billions of dollars.

At the end of 2003, the US had a net financial asset position of −$2,651b, meaning that foreign claims on the US exceeded US claims on the rest of the world by this amount. A complete accounting of assets and liabilities is reported in Table 2.

Interpreting 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 concerned? 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 a firm is accumulating liabilities. Should it be concerned? The answer is that it depends what the liabilities are used to finance. If they finance productive investments, then there should be no difficulty serving the liabilities. 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 at the start of the course:

\[ S \equiv Y - C - G = I + X - M. \]

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

\[ \frac{S}{Y} \equiv \left( 1 - \frac{C + G}{Y} \right) = \frac{I}{Y} + \frac{X - M}{Y}. \]

If we run a trade deficit \( (X < M) \), it must (as a matter of accounting) reflect some combination of low saving or high investment (high \( I \)). High investment is typically not a concern. 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. We might guess that the ability to borrow from abroad is useful in the same way that a firm’s ability to borrow allows it to pursue positive NPV projects. But 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.

**Sustainability analysis**

If we put aside asset revaluations, equation 1 looks very similar to the accounting we did for government debt in the lecture notes on ‘Fiscal Policy’. Basically, the trade position $X_t - M_t$ plays the role of the primary deficit/surplus and net income from abroad pays the same role as the government’s interest payments. It should be much of a surprise then that we could examine the sustainability of foreign debt using many of the same concepts.

Imagine a situation in which a current account deficit leads to an increasingly negative net foreign asset position. That sounds ominous, but is it a problem for the economy? We generally look at NFA relative to GDP, so the question is which is growing more rapidly. If the current situation leads the ratio of NFA to GDP to explode, we say the situation is not sustainable.

What happens if the foreign debt is unsustainable? Our accounting relationships can’t tell us, 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.

**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.

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 current account reflects some combination of personal saving, investment in plant and equipment, and the government deficit.
Further reading

- 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 2002, the world trade balance was $44b, meaning that countries reported $44b 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.