Macroeconomics with an Open Economy

An open economy is one that trades with the rest of the world.

So far, we have been studying closed economies, i.e., ones that do not trade with the rest of the world.

The world itself is a closed system — at least until Earth starts trading with the Moon (or Mars) — but individual countries (typically) are not.
National Income Accounting in an Open Economy

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

\[ X - M = \text{net exports (or NX).} \]

\( Y = \) spending on goods and services produced in the domestic (or home) country

\( C = \) spending on consumption goods in the domestic country (some of these goods may have been produced abroad in a foreign country)

\( I = \) spending on investment goods in the domestic country (some of these goods may also have been produced abroad in a foreign country)
\( G = \) spending on (consumption and investment) goods by the government in the domestic country (some of which may have been produced abroad)

\( X = \) foreign spending on goods produced in the domestic country

\( M = \) domestic spending on goods (for consumption, investment, or government) produced abroad in a foreign country

\( Y \) includes spending by domestic residents and spending by foreign residents on goods produced at home (in the domestic country).
In light of these definitions, exports \((X)\) must be added to \(C + I + G\) (because \(C + I + G\) is total domestic spending on goods and services ≠ spending on goods and services produced in the home country).

Likewise, imports \((M)\) must be subtracted from \(C + I + G\) (because \(C + I + G\) includes spending in the domestic country on foreign goods and services).
A Simple Example

Two countries: USA and France

USA produces culture (Britney Spears CD’s).
France produces wine.

Britney Spears CD’s consumed by USA residents: $100
Britney Spears CD’s consumed by French residents: $30

French wine consumed by USA residents: $40
French wine consumed by French residents: $80
Constructing the National Income Accounts

\[ Y_{USA} = 100 + 30 = 130 \]
\[ C_{USA} = 100 + 40 = 140 \]
\[ NX_{USA} = \text{Exports of CD's} - \text{Imports of wine} = 30 - 40 = -10 \]

As required: \[ Y_{USA} = C_{USA} + NX_{USA} \quad (I_{USA} = G_{USA} = 0) \]

\[ Y_{France} = 40 + 80 = 120 \]
\[ C_{France} = 30 + 80 = 110 \]
\[ NX_{France} = \text{Exports of wine} - \text{Imports of CD's} = 40 - 30 = 10 \]

As required: \[ Y_{France} = C_{France} + NX_{France} \quad (I_{France} = G_{France} = 0) \]

The world is a closed system: \[ NX_{USA} + NX_{France} = 0 \]
Saving and Investment in an Open Economy

\[ Y - (C + G) = I + NX \]

- Spending by domestic residents and the domestic government on consumption goods (government spending is counted as consumption even if some of this spending is, say, investment in infrastructure)

\[ \Rightarrow \text{National saving} \quad S = Y - C - G = I + NX \]
Lesson: In an open economy, national saving (by the domestic country) need not equal spending on investment goods in the domestic country.

A trade deficit \((NX < 0)\) implies that \(I > S\).

A trade surplus \((NX > 0)\) implies that \(I < S\).

Net exports \((NX)\) is sometimes called the current account.
Trade Deficits and International Capital Flows

- When a country is running a trade deficit (net exports < 0), it is borrowing from foreign countries to cover this deficit. Put differently, foreign countries are investing in the home country (i.e., acquiring assets in the home country).

- Alternatively, when \( NX < 0 \), a country is buying more goods and services from foreign countries than it is selling to them. How does it finance this positive net purchase of goods and services from the rest of the world? By selling assets in the home country to foreigners.
Another Simple Example

Suppose \textit{USA} buys $100 of French wine. With this $100, France could buy $100 of Britney Spears CD's. In this case, \( NX_{\text{USA}} = 0 \) (the USA trade deficit equals zero).

But suppose the French don't like Britney Spears! What can they do with 100 dollars?

1. They could hold on to it. In this case, they have acquired a \textit{USA} asset (dollars, which are a liability of the Federal Reserve).

2. They could buy \textit{USA} Treasury bonds, or stocks of companies in the \textit{USA}. In both cases, they have acquired a \textit{USA} asset.
Lesson: Changes in the current account (or trade deficit) are exactly balanced by changes in the financial (or capital) account.

The capital account measures changes in a country's net financial position with respect to the rest of the world. A trade deficit (surplus) is a net flow of capital into (out of) a country.

- A country that runs persistent trade deficits eventually becomes a debtor to the rest of the world.
- A country that runs persistent trade surpluses eventually becomes a creditor to the rest of the world.
Figure 5.6 The Trade Balance, Saving, and Investment: The U.S. Experience
Mankiw: Macroeconomics, Sixth Edition
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