The Balance of Payments

The balance of payments equation for a country is

$$\begin{aligned} X^g - M^g \ + \ X^s - M^s \ + \ D^i - D^o \ + \ UT^i - UT^o \\ + \ CA^i - CA^o \\ + \ FDI^i - FDI^o \ + \ PI^i - PI^o \ + \ FDR^i - FDR^o \ + \ OI^i - OI^o \\ + \ \Delta FXB \ = \ 0 \end{aligned}$$

where

Y^i	$\equiv$	inflow of Y
Y^o	$\equiv$	outflow of Y
X^g	$\equiv$	exports of goods
M^g	$\equiv$	imports of goods
X^s	$\equiv$	exports of services
M^s	$\equiv$	imports of services
D	$\equiv$	income from investments (profits, dividends, interest) and employee compensation
UT	$\equiv$	unilateral, or unrequited, transfers
CA	$\equiv$	non-produced, non-financial assets (patents, copyrights, real estate or forgiveness of liabilities
FDI	$\equiv$	foreign direct investments
PI	$\equiv$	portfolio investments (equity and debt)
FDR	$\equiv$	investments in financial derivatives
OI	$\equiv$	investments that do not fall in the previous categories such as banks loans, trade credits, currency holdings, etc.
ΔFXB	$\equiv$	change in official reserves and related items

The balance of payments account is divided into four subaccounts: The current account, the capital account, the financial account and the official settlements, or official reserves, account.

The **current account balance** is given by

$$X^g - M^g \ + \ X^s - M^s \ + \ D^i - D^o \ + \ UT^i - UT^o \ .$$

Note that goods or services that leave the country (exports) are recorded as credits whereas goods or services that enter the country (imports) are recorded as debits. For income and unilateral transfers, inflows are recorded as credits and outflows are recorded as debits. Note that unilateral transfers refer to the change in net worth of the donor or the recipient of a gift. For example, if a Canadian organization donates \$100,000 in goods to Ethiopia, say, then net exports of goods increase and net unilateral transfers decrease. When cash is directly donated, the offsetting transaction appears in the capital account, as described below.

The **capital account balance** is given by

$$CA^i \ - \ CA^o \ .$$

Transactions involving copyrights, patents, land, real estate or any other non-produced, intangible asset are recorded in this account. This account is sometimes used to offset unilateral transfers. For example, if a Canadian organization donates \$100,000 in cash to Ethiopia, this may be seen as if a resident was buying goodwill from Ethiopia, and thus goodwill capital is then flowing into the country.

The **financial account balance** is given by

$$FDI^i - FDI^o \ + \ PI^i - PI^o \ + \ FDR^i - FDR^o \ + \ OI^i - OI^o \ .$$

The category "other investments" includes bank loans, bank deposits, intermediated investments, etc.. A loan to a foreigner by a domestic bank will increase OI^o, i.e. it will be recorded as an outflow of this account. On the other hand, the export of a liability will be recorded as an inflow of this account. That is, IO^i increases whenever a resident pays a foreigner with a check drawn on a domestic bank.

The **official settlements account balance** is given by

$$\begin{aligned} \Delta FXB \ &= \ \text{outflow of official foreign reserves} \\ &\qquad\qquad\qquad - \ \text{inflow of official foreign reserves.} \end{aligned}$$

Note that official reserves are similar to goods and services in the balance of payments equation, i.e. outflows enter as credits and inflows enter as debits.

In practice, transactions are not all recorded perfectly due to missing data or illegal trades so there is another item that has to be incorporated into the balance of payments equation, which is **net errors and omissions**.

The balance of payments is based on double-entry bookkeeping; for every transaction recorded as a credit there is an offsetting debit entry, and vice versa. According to accounting convention, a source of funds (decrease in assets or increase in liabilities) is recorded as a credit and a use of funds (increase in assets or decrease in liabilities) is recorded as a debit.

BOP compilation is based on the residence of the participants to a transaction. An institutional unit is a resident of an economy if its centre of interest lies within the economy. That is, a branch of a U.S. bank operating in Canada is considered resident of Canada. Similarly, an individual is considered as resident of an economy if this is where he/she normally stays.

Here are some examples of how transactions are recorded in the balance of payments.

Example 1 *A Chinese citizen sells a patent of interactive dress-up doll for \$100,000 to a Canadian citizen who pays by drawing a check on its Canadian bank account. A debit will be recorded in the capital account as a non-financial asset has been purchased and a credit will be recorded in the financial account, in the category "other investments", as a liability has been exported abroad, as depicted in the following table.*

	Credit	**Debit**
Purchase of a non-financial assets ($CA^o \uparrow$)		*\$100,000*
Increase in liabilities to foreigners ($OI^i \uparrow$)	*\$100,000*	

Example 2 *A Canadian company exports machine tools to Switzerland at a price of 2,000,000 Swiss francs (SFr). At the exchange rate 1 SFr = C\$1.1214 (Bloomberg, Friday January 17, 4:49 pm), this means C\$2,242,800. The Swiss importer pays with a check drawn on its Swiss bank account. A credit is then recorded as an export of goods,* X^g*, and a debit is recorded in*

the financial account in "other investments" as there has been an increase in private foreign assets, as depicted in the following table.

	Credit	**Debit**
.05in Export of goods ($X^g \uparrow$)	*\$2,242,800*	
Increase in foreign currency holdings ($OI^o \uparrow$)		*\$2,242,800*

Example 3 *The Canadian company in the previous example decides to sell its Swiss francs for Canadian dollars. A credit would then be recorded in the financial account, as the sale of foreign currency by the Canadian company represents a source of funds, and a debit would be recorded in the official reserves account, as buying more foreign currency is a use of funds.*

Example 4 *Suppose an Italian migrates to Canada, bringing \$500,000 worth of goods with him. How is this recorded in the balance of payments? This is an import of goods, so $X^g \uparrow$. At the same time, this is a unilateral transfer from an Italian to a Canadian (note that the goods keep the same owner but the latter's residency status changes, thus making this transaction similar to a donation from a non-resident to a resident), i.e. $UT^i \uparrow$.*

Describe how the following transactions are recorded in the balance of payments.

1. A Canadian business exports \$80 million of soybeans to China and receives payment in the form of a check drawn on a Canadian bank.

2. The Canadian government provides refugee assistance to Somalia in the form of corn valued at \$1 million.

3. A Canadian company invests \$500 million in a chemical plant in Germany financed by issuing bonds London.

4. Canadian Tire pays \$1 million in dividends to foreign residents, who choose to hold the dividends in the form of bank deposits in New York.

5. A Mexican company sells \$2 million worth of cement to a Canadian company and deposits the check in a bank in Toronto.