UNIVERSITY OF OTTAWA

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National and International Accounts: Balance of Payments

For every economy as a whole, income must equal expenditure.

An economy's income is the same as expenditure because every transactions have two properties: a buyer and a seller.

Every dollar of spending by some buyer is a dollar of income for some seller.

We will start with a closed economy, where a country does not deal at all with non-residents or non-nationals

•Subsequently, we will open the economy where goods, capital and labor mobility is allowed across countries.

•A closed economy is characterized by a circular flow of payments.

•At the top is gross national expenditure (GNE) or gross national product (GNP), the total expenditure on *final* goods and services *produced* in any given period of time (a calendar year).

Flow of Payments in a Closed Economy

GNE is made up of three parts: personal consumption (C), investment (I) and government spending (G). Consumption is the amount consumed by private domestic residents,

Investment is the amount put aside by private firms to build new plants and equipment for future production and

Government is the amount used by the government (either for C or I). Hence

(1) GNE = C + I + G

As the economy is closed, the nation's expenditure must be spent on the final goods and services *produced within its borders*, the gross domestic product (GDP). GDP is value of final and intermediate goods *minus* value of intermediates.

–In a closed economy, as intermediate sales must be equal to intermediate purchases, in GDP these two terms cancel out.

So, GNE = GDP.

•Once GDP is sold where do the payment flow next?

•Because GDP measures the value of firms outputs *minus* the costs of firm inputs, and the remaining flow is paid by firms as incomes to factors of production such as the owners of labor, capital and land employed by the firms.

•This all income is paid for domestic entities, either households, firms or the government, called as gross national income (GNI).

•So, in the closed economy,

•(2) GNE = GDP = GNI = GNP

•Once GNI is received, where do the payments flow next?

•There is no way for closed economy to finance expenditure except out of its income, the payment flows as GNE.

Flow of Payments in an Open Economy: Balance of Payments Accounts

In an open economy also, we have (as there are only three entities for final expenditure)

GNE = C + I + G

However, some home expenditure made in C, I and G is spent to purchase foreign final goods and services.

These imports of goods and services (M) must be subtracted from GNE because those goods are produced (sold) by domestic firms.

In addition, some foreign expenditure is used to purchase domestic final goods and services from home.

These exports (X) must be added to home GNE because those goods are sold (produced) by domestic firms (similar argument applies to intermediate inputs).

The difference between payments received for exports and payments made for imports is called trade balance (TB), and it equals the net payments to domestic firms due to trade.

(3) TB = X – M

TB is net payments to domestic firms due to trade.

Because of trade, not all of the GNE payments go to GDP and not all of GDP payments arise from GNE.

•To find the contribution of GNE going to GDP, we must subtract the value of *final* goods imported (home spending that goes to foreign firms) and add the value of *final* good exported (foreign spending that goes to home firms).

•We must also subtract the value of imported *intermediate* goods (in GDP they also count as home's purchased inputs) and add the value of exported intermediates (in GDP they also count as home's produced output. However, intermediate inputs sold by home firms and purchased by other home firms will still cancel out in GDP as is the case with a closed economy.

•Hence, the total value of production within the political boundary (no matter whether produced by nationals or foreign nationals)—GDP-- is given as

•(4) GDP = C + I + G + X – M

•where X = exports of both final and intermediates and M = imports of final and intermediates.

Putting differently,

•(5) GDP = GNE + TB GNE differs from GDP by the amount of TB.

•If there were no movement of factors of production (capital and labor) across countries (except trade), then GDP (produced within the borders) would be the same as GNP (or GNI) (produced by nationals).

•Otherwise GDP and GNP (GNI) differ by the amount of *net factor income abroad*.

•Some GDP is paid to *factor service imports* (domestic payments to capital, labor and land owned by foreign entities), and as this income is not paid to factors at home, imports of factor services (MFS) should be subtracted while computing national income.

–This is payment in all three categories of foreign investment: portfolio investment, direct investment and other investment.

•On the other hand, some foreign GDP may be paid to domestic entities as payments to *factor services exports* (XFS) (to domestic-owned capital, labor and land in foreign countries). –This is receipt for three categories of domestic investment in foreign countries.

The value of (XFS) minus (MFS) is known as net factor income from abroad (NFIA).

• (6) NFIA = XFS - MFS

• Therefore

• (7) GNI = GNP = GDP + NFIA

• Yet, there is yet another component of national income to discuss.

• Domestic entities might give some of its income away—for example, as foreign aid or remittances by migrants to their families back home.

• Similarly, domestic entities might receive gift from abroad and such gifts may take the form of cash or "in kind" transfers of goods and services.

• These transactions are considered unilateral (because there is no two-way flows as is the case in all other concepts of BOP) transfers.

• The value of unilateral transfers the country receives from the rest of the world—ROW— (TIN) *minus* those it gives to the ROW (TOUT) is net unilateral transfers (NUT).

• (8) NUT = TIN -TOUT

• When we add NUT to GNI, we get gross national disposable income (GNDI), which represents the total resources available to the home country.

• (9) GNDI = GNI + NUT

The balance of payment accounts collect together TB, NFIA and NUT and call it current account (CA).

• (10) CA = TB + NFIA + NUT

• Replacing GNI in ((9) using equation (7), and replacing GDP using equation (5), equation (9) becomes

• (11) GNDI = GNE + CA

•Replacing CA by TB, NFIA and NUT as given in (10) and using longer expressions for TB (3), NFIA (6) and NUT (8), equation. In general, economists and policy maker prefer to use GDNI because to measure national income. **Why?** GDP does not include net factor income from abroad GNI leaves out international transfer. But these two factors, NFIA and NUT, are relatively small.

Financial account and capital account

Using equation (11), if CA > 0, GNDI (income) > expenditure (GNE); the country has higher income than it is spending. This country should be lending which would be dealt in another account, Financial Account.

Conversely, if CA < 0, then GNDI < GNE; this country has lower income than expenditure, it should be borrowing to spend (again this is dealt in Financial Account).

The current account (CA) is not a complete picture of international transactions.

There are two other accounts: financial account and capital account. Current account deals only with the income side of the economy whereas the assets side is not included in it.

Capital account (KA) is not that important for any country, and we will not discuss further.

Financial Account (FA) is the more important one and it includes assets transaction among countries, whereas Capital Account is not that significant**.**

We have already described NFIA, but how does it happen?

•It happens because of the movement of financial assets across borders in the past.

•The financial assets transactions happens, mainly, in three forms: Portfolio investment (investment in share, stock, bonds and money market)

Direct investment (equity capital, reinvested earnings)

Other investment (long and short term trade credit, loans)

•Financial account (FA) records such financial transactions.

•Asset trade in FA can be broken down into two types: assets issued by home entities (home assets) and assets issued by foreign entities (foreign assets).

•When home assets are acquired by foreign entities (home is exporting assets), additional resources (money) are available for spending at home; it is an external liability of the home country because Home has obligation to pay in the future to rest of the world (ROW). Conversely, when foreign assets are bought by Home entities (imports of assets by home country), less resources are available for spending at home; it is an external asset of the home country because ROW has obligation to pay to the home country. For example, when a Chinese firm acquires an oil sand company in Canada, the acquisition is an external liability for Canada (and an external asset for China). When a Canadian company invest in the US or acquire a factory located in the US, the acquisition is an external asset for Canada (and an external liability for the US).

•The net financial account (FA) between two countries will be given by the following expression where the variable with an asterisk denotes that for foreign country

Net exports of home assets is the net of home assets bought by foreigners (denoted as exports) *minus* Canadian assets which were foreign-owned are now repurchased by Canadians (imports).

Similarly, net import of foreign assets is the net of foreign assets purchased by Canadians (imports) and foreign assets repurchased by foreigners (X).

The home country can free up resources by sale and purchase of assets, which is not included in equation (11).

•Adding FA and KA on both sides in equation (11), we have

•(14) GNE + CA + KA + FA = GNDI + KA + FA As CA + KA + FA = 0, we have

•(15) GNE = GNDI + KA + FA

•Total expenditure is equal to resources due to income and transfer *plus* asset transactions.

External Wealth of a Country

Surpluses (deficits) on the CA of the BOP accounts must be offset by deficits (surpluses) on the asset side.

By telling how CA imbalances are financed, BOP makes the connection between a country's income and spending decision, the evolution of that country's wealth.

It's not only a nation's income flow that is important, the stock of wealth, which is a outcome of flow of income over time is also a very important aspect. As is the case of an individual, the spending capacity of a country depends on both its income and wealth.

The level of a country's external wealth (W) is computed as:

External wealth (W) = ROW assets owned by home (A-for assets) – Home assets owned by ROW (L-for liabilities)

(18) W = A - L

A country's level of external wealth is also called its *net international investment position* or *net foreign assets*. It is a stock measure not a flow measure.

If W > 0, home is a net creditor country: external assets exceed external liabilities.

If W < 0, home is a net debtor country: external liabilities exceed external assets.

In order words,

Globalization shows up in the BOP account through CA, KA and FA.

• The more a country is integrated with the ROW, the larger are the magnitudes of the components of its BOP.

• A more integrated country will be able to benefit more if things go well in the international market, but in the event of global crisis, will bear larger negative impact as well.

• So, what determines the CA and FA of a country are important in order to understand the relative position of a country.