

Tools for the analysis of international economic relations

Balance of Payments and external imbalances

International Economics

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[Link to updated version](#)

Bibliografía:

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Chapter 3
- Krugman, Obstfeld, & Melitz (2018). *International Economics: Theory and Policy*. Pearson.
Chapters 13, 18

Topics

Measuring foreign flows

Balance of Payments and External Imbalances

What do we measure?

Measurement of transaction value **between residents and non-residents**, considering:

- Nature of agents

Residents:

national and foreign agents who **regularly carry out their activity** in the reference country

→ includes: diplomats, military, nationals with defined contracts abroad

Non-residents:

national and foreign agents who usually carry out their activity abroad

→ includes: seasonal or cross-border workers

- Nature of transactions

current, capital and financial operations

initial valuation in national currency (i.e., Euros)

→ applies the **exchange rate at the time of the transaction**

- Complexity of valuation

some of the information results from **estimates**

→ adjustment process prolonged for months

Sources of information

There are two direct sources of information

- National Accounting

Accounts for current and financial operations with the Rest of the World

Part of the aggregate accounts of the economy

 In Spain:

- **Done** by the National Institute of Statistics (INE)
- Follows **criteria** of the European System of National Accounts

- Balance of Payments

Current, capital and financial flows with the Rest of the World

Monthly information, and prior to that of National Accounts

Sources: mandatory declarations for international transactions (over certain thresholds), banking entities (act as intermediaries), customs records, transport statistics, investment surveys, tax collections

 In Spain:

- **Done** by the Bank of Spain (BdE)
- Follow **criteria** of the International Monetary Fund

Structure

🇪🇸 Adaptation of Spain to international criteria:

- **Current Account Balance (CAB)**

Transactions directly related to the real activity of the economy

- **Capital Balance (KB)**

Capital transfers and operations related to the purchase and sale of land and intangibles

- **Financial Balance (FB)**

Flows of acquisition, sale, and amortization of financial instruments

- **Movement of Reserves (MRE)**

Net changes in reserves

Current Account Balance (CAB)

Current Account Balance (CAB)

It includes transactions **directly related** to the **real activity** of the economy (i.e., goods and services, property income from productive factors, current transfers without counterpart).

Structure:

- **Trade Balance (TB)**

Records value of exports and imports of merchandise, including supplies to means of transportation (e.g., fuel).

→ Registered values FOB (*free on board*)

⇒ the cost of insurance and freight must be deducted from CIF imports (*cost, insurance and freight*)

- **Services Balance (SB)**

Records value of exports and imports related to the provision of services.

- Tourism and travel

 - i.e., for tourism, business, or studies*

- Freight, tickets, and other transportation

 - i.e., air, sea, or land*

- Insurance

 - e.g., premiums and compensation, pension funds*

 - does not include: export credit insurance (considered as a financial service)*

- Financial Services

 - e.g., commissions, issuance, placement, and amortization expenses*

 - does not include: dividends, interest (recorded in income balance)*

- IT services

 - e.g., advice, configuration, maintenance of computer equipment*

 - does not include: software packages (recorded in balance of trade)*

- Business services

 - e.g., intermediation in foreign trade operations, equipment leasing, advertising, market studies, consulting*

- Other services

 - e.g., audiovisual services, derived from the use of technology*

- **Primary Income Balance (PIRoW)**

Records the value of income from the ownership of factors of production.

→ Labor income

i.e., wages, other labor income (remittances from seasonal migrants, cross-border workers)

→ Capital income

i.e., profits, dividends, real estate rents, interest on commercial/financial credits

- **Current Transfer Balance (CTRoW)**

Records value of transactions of goods and services without counterpart.

e.g., government aid, contributions to the budget of international organizations, pensions, taxes, remittances from permanent emigrants, inheritances

Accounts from the Rest of the World

The National Accounts consider the Rest of the World as another institutional sector. Such information is necessary to be able to balance the National Accounts and obtain the macromagnitudes of the economy as a whole.

National Accounts follow a common logic:

Uses (-)		Resources (+)	
€ XX:	Use A	Resource B	€ XX:
€ XX:	Balance C		

Uses (-)		Resources (+)	
€ XX:	Use D	Balance C	€ XX:
€ XX:	Balance F	Resource E	€ XX:

The **interpretation is counterintuitive**. RoW resources are uses in the national economy, and vice versa. Consequently, the **resulting balances are opposite** in all cases.

Account for foreign exchange of goods and services

Uses (-)		Resources (+)	
X	Exports	Imports	M
NFB	Net Foreign Balance		

$$NFB = X - M$$

Rest of the World Accounts reminder

The balances resulting from the Rest of the World Accounts are opposite to those of the national economy.

The definition for the national economy is detailed in the definition of $NFB = X - M$.

The result of the Rest of the World account is $NFB = -(X - M) = M - X$

All the following definitions follow the same logic.

Example: Account for foreign exchange of goods and services

- Export of Pharmaceuticals to Portugal for € 10:
- Export of Ham to France € 40:
- Income from German tourists in Mallorca € 20:
- Import of crude oil from Saudi Arabia € 60:
- Import of Meat from Argentina € 5:
- Resident expenses on American electronic platforms € 20:

Uses (-)		Resources (+)	
€70:	Exports of goods and services	Imports of goods and services	€85:
€ 15:	Net Foreign Balance		

Foreign account of primary income and current transfers

Uses (-)		Resources (+)	
		Net Foreign Balance	NFB
LI	Labor Income paid to residents	Labor Income paid to non-residents	LI
PI	Property Income to receive	Property Income to pay	PI
CT	Current Transfers to receive	Current Transfers to pay	CT
CAB	Current Account Balance		

$$CAB = FNB \pm PI_{RoW} \pm CT_{RoW}$$

Example: Foreign account of primary income and current transfers

- Net Foreign Balance for - € 15:
- Salaries of Spanish residents in Andorra per €5:
- Zara benefits in Italy for €10:
- Inheritances to Spanish residents from France € 1:
- Salaries of Portuguese residents in Galicia for € 3:
- Zara dividends paid to residents of Colombia € 2:
- Spain's contribution to the EU budget € 1:

Uses (-)		Resources (+)	
		Net Foreign Balance	€ 15:
€ 5:	Labor Income to residents	Labor Income to non-residents	€ 3:
€ 10:	Property Income to receive	Property Income to pay	€ 2:
€ 1:	Current Transfers to receive	Current Transfers to pay	€ 1:
€ 5:	Current Account Balance		

Capital Balance (KB)

Capital Balance (KB)

Collects transactions of **capital transfers** and related to the **purchase and sale of land and intangibles**.

- Capital Transfers to the Rest of the World (KTRoW)

Records transfers of **asset ownership** and donations intended to **finance investments**.

→ *includes: movements of funds for liquidation of assets from non-residents to residents, transfer of EU capital (e.g., funds for regional development)*

- Acquisitions of land and intangibles from the Rest of the World (ALIRoW)

Records transfers of ownership of **non-produced assets** that can be used for production.

→ Tangibles

e.g., land, subsoil resources

→ Intangibles

e.g., patents, trademarks, copyrights

Capital account of the Rest of the World

CFA (-)		CFL (+)	
		Current Account Balance	CAB
KT	Capital transfers to pay	Capital transfers to receive	KT
FSRoW Financial Savings of the Rest of the World			

$$FSRoW(\pm) = CAB \pm KTRoW$$

Example: Capital account of the Rest of the World

- Current Account Balance for - € 5:
- Opening of Telefónica subsidiaries in Mexico for €20:
- British buying Spanish land in Alicante for €30:

CFA (-)		CFL (+)	
		Current Account Balance	€ 5:
€30:	Capital transfers to pay	Capital transfers to receive	€20:
Financial Savings of the Rest of the World			€ 5:

Financial Balance (FB)

Financial Balance (FB)

Collects flows resulting from the acquisition/sale/amortization of **financial instruments** between resident and non-resident agents.

Concepts:

- Recording

Always in terms of **variations** of financial assets and liabilities:

→ In expenditures column: CFA (\pm)

Outflow/inflow of funds due to the acquisition/sale/amortization by residents of instruments issued by non-residents *e.g., purchase of Amazon shares by a Spaniard*

→ In income column: CFL (\pm)

Inflow/outflow of funds due to the acquisition/sale/amortization by non-residents of instruments issued by residents *e.g., purchase of Spanish treasury bonds by a Japanese*

- Exclusions

Income from operations (e.g., dividends, interest)

→ registered in PIReW

Commissions/brokerage expenses

→ registered in SB

- Possible classifications

Institutional sectors that carry out the operations

Origin/destination of flows

Nature of financial flows

Classification:

- **Direct Investments (DInv)**

Flows that aim for **permanent and stable profitability**.

- *includes: investments in shares and participations that represent more than 10% of the share capital, flows to subsidiary companies, real estate*

- **Portfolio Investments (PInv)**

Flows **sensitive to prices/exchange rates/interest rates**.

- *includes: stocks, bonds, exchange-traded obligations, money market instruments*

- **Other Capital (OK)**

Flows not included in the previous items.

- Long-term deposits and credits (over 1 year)
e.g., with banking entities, granted to finance exports/imports
- Short-term deposits and credits (less than 1 year)
e.g., with banking entities, granted to finance exports/imports
- repos operations
are purchase and sale operations of financial instruments with a repurchase agreement

Financial account of the Rest of the World

CFA (-)	CFL (+)
	Financial Savings of the Rest of the World FSRoW
Net Acquisition of Assets	Net Issuance of Liabilities
Gold and other reserves	Gold and other reserves
Cash and deposits	Cash and deposits
Shares and other participations	Shares and other participations
Other instruments	Other instruments

$$FSRoW = CFA - CFL$$

Example: Financial account of the Rest of the World

- Financial Savings from the Rest of the World for €5:
- Indebtedness in Other Reserves for € 1;; Purchasing Gold for €0.5:
- Opening of non-resident current accounts for €2;; UK resident repo transaction for €2:
- Purchase of Google shares from residents for €1;; Purchase of Endesa shares from non-residents for €4:
- Purchase of Spanish Treasury bonds from non-residents for €1.5:

CFA (-)		CFL (+)	
Net Acquisition of Assets		Financial Savings from the Rest of the World - € 5:	
€ 0.5:	Gold and other reserves	Net Issuance of Liabilities	
		Gold and other reserves	€ 1:
€ 2:	Cash and deposits	Cash and deposits	€ 2:
€ 1:	Shares and other participations	Shares and other participations	€ 4:
€ 0:	Other instruments	Other instruments	€ 1.5:

Movement in Reserves (MRE)

Movement in Reserves (MRE)

Includes the net variations in reserves due to income and payments resulting from foreign operations.

- Reflects surplus/deficit situations in the **entire BoP**

- $MRE = RE + FFA$

Reserves (RE)

- Foreign financial assets controlled by the monetary authority and freely available to finance BoP imbalances
e.g., foreign currencies, gold, Special Drawing Rights (SDR), net position with the IMF

Net Foreign Financial Assets (FFA)

- Resulting credits that are not settled in the same year
e.g., selling credit from a Spanish exporter to a foreign company
also recorded: results of commercial transactions with the national currency

Topics

Measuring foreign flows

Balance of Payments and External Imbalances

Balance of Payments Reading

$$BoP = CAB + KB + FB \pm MRE$$

MRE plays an **accommodating role** to obtain an **accounting balance** of the *BoP*

- *BoP* responds to the accounting principle of **double entry**
 - Each net income/change in liabilities must be offset by a net payment/change in assets
 - Totals in each column must be equal
 - \therefore the *accounting balance* of the *BoP* **always 0**
- *MRE* are posted **always in the payments column**
 - The corresponding sign is used to achieve an accounting balance

Example: Balance of Payments Equilibrium

- Current Income of €35;; Current Expenditures for €30:
- Capital Income of €10;; Capital Expenditures of €15:
- Net change in Financial Liabilities of € 7.5;; Net change in Financial Assets per €4:

	Income/CFL	Expenditures/CFABalance	
Current Account Balance	€ 35:	€ 30:	€ 5:
Capital Balance	€ 10:	€ 15:	- €5:
Financial Balance	€ 7.5:	€ 4:	€ 3.5:
Movement of Reserves	-	€ 3.5:	- € 3.5:
Balance of Payments	€ 42.5:	€ 42.5:	€ 0:

Balance of Payments Interpretation

$MRE(-) \Rightarrow BoP \text{ surplus} \Rightarrow \Delta RE / FFA$

$MRE(+) \Rightarrow BoP \text{ deficit} \Rightarrow \nabla RE / FFA$

Economic interpretation is **counterintuitive**

- Negative values of MRE correspond to surplus
- Positive values of MRE correspond to deficit

External Imbalances

- The zero balance of the BoP ($BP = 0$) should **not be interpreted as an external equilibrium**
- Both **deficits and surpluses are imbalances**
 - The assessment of external imbalances depends on internal performance
e.g., gross domestic product, national demand, final consumption, prices

Equilibria/Imbalances to analyze

- Movement of Reserves
 - Utility:
 - Gives a **first impression** of the external imbalance of an economy
 - Limitations:
 - There is no exact correspondence between MRE and foreign transactions
e.g., credit operations, barter, in kind

External Imbalances

- Net Foreign Balance

- Exclusively includes operations related to goods and services

$$SNE = BC + BS$$

- Utility:

- It is linked to real activity: it measures the degree of coherence between internal supply and demand

$$NFB = TB + SB = (X - M)$$

$$Y = C + I + G + (X - M)$$

$$\Rightarrow NFB = Y - (C + I + G) = Y - ND$$

- $NFB(-) \Rightarrow$ trade and services deficit $\Rightarrow Y < ND$: excess demand

- $NFB(+)$ \Rightarrow trade and services surplus $\Rightarrow Y > ND$: excess supply

External Imbalances

- Current Account

- Collects operations related to goods and services, primary income, and current transfers

$$CAB = TB + SB + PIRoW + CTRoW$$

- Utility:

- Linked to the need/capacity for investment financing

$$CAB = NFB + PIRoW + CTRoW$$

$$DI = FC + GCF + CAB$$

$$\Rightarrow GS = DI - FC = FBC + BCC \Rightarrow CAB = GS - GCF$$

- $CAB(-) \Rightarrow$ current account deficit $\Rightarrow AHB < GCF$: need for external financing

- $CAB(+)$ \Rightarrow current account surplus $\Rightarrow AHB > GCF$: external financing capacity

- Limitations:

- This is an approximation:

The net capital received from the rest of the world is not being considered

CAB usually dominates KB

External Imbalances

- Current Account + Capital Account

- Add net capital movements to the *CAB* analysis

$$CAB + KB = TB + SS + PIRoW + CTRoW + KTRoW$$

- Utility:

- Reflects the need/capacity for investment financing

$$CAB + KB = FNB + PIRoW + CTRoW + KTRoW$$

$$DI = FC + GCF + CAB$$

$$FS + KTRoW = KR: \text{ capital resources}$$

$$\Rightarrow RC = GCF + CAB + KTRoW \Rightarrow CAB + KB = KR - GCF$$

- $CAB + KB(-) \Rightarrow KR < GCF$: need for external financing

- $CAB + KB(+)\Rightarrow KR > GCF$: external financing capacity

- Limitations:

- The interpretation of deficits/surpluses is not linear

Deficit: May be desirable if it finances expansions of productive capacity

Surplus: May be undesirable if it implies misallocations of available savings