Uniwersytet Warszawski
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Macroeconomics 1

Open economy: basics

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Agenda

- Autarky and the open economy
- Balance of payments (BP)
  - Definition
  - Double entry
  - BP accounts
  - BP core identity
  - BP imbalance
  - BP and SNA
- The basic identity of the SNA in an open and closed economy
- Exchange rate
  - Exchange rate system
  - Quoting
  - Change in exchange rate

- Closed economy - autarky

- Open economy

Quick task

- *Using data from the World Bank database, compare the degree of opening of different economies. Are there any patterns visible in the relationship between opening and the size of economies and the degree of their economic development?*
- *How can we assess the degree of opening of the Polish economy compared to other countries?*
- *How is it possible that some countries have a degree of openness (measured by exports to GDP) above 100%?*

Balance of Payments

- List of all transactions concluded over a period of time between residents and non-residents of a given country:
  - What does resident mean?
  - Transaction types
  - Balance as a streaming category (like GDP)

Who is responsible for compiling the balance of payments?

- The National Bank of Poland is responsible for compiling the balance of payments. The following documents are prepared:
  - Quarterly Balance of Payments of the Republic of Poland
  - Monthly Balance of Payments of the Republic of Poland
  - Annual publication of the balance of payments
  - International investment position

Where do the definitions come from?

- Balance of Payments and International Investment Position Manual Sixth Edition (BPM6)
- Manual on Statistics of International Trade in Services 2010 (MSITS 2010)
- System of National Accounts(SNA 2008)
- European System of Accounts (ESA 2010)

Double record

- Double entry convention
- on the credit side
- on the debit side

What do these entries mean??

- An entry on the debit side means an increase in foreign assets held by residents or a decrease in their liabilities towards abroad (income)

- An entry on the credit side means an increase in liabilities towards foreign countries (e.g. an increase in domestic assets held abroad) or a decrease in residents' receivables (expenses).

The credit side entries

- On the credit side of the balance of payments we write:
  - export of goods and services
  - resident income due from abroad
  - transfers received from abroad
  - increasing national obligations towards foreign countries
  - reduction in foreign assets held by residents
- From the point of view of the currency market, provisions on the credit side result in an increase in the supply of foreign currencies

The debit side entries

- On the debit side of the balance of payments we write:
  - import of goods and services
  - non-resident income due from the country
  - transfers for abroad
  - a decline in domestic liabilities towards foreign countries
  - increase in foreign assets held by residents
- From the point of view of the currency market, entries on the debit side result in an increase in demand for foreign currencies

Balance of payments structure (BPM6)

The balance of payments consists of several accounts where particular types of transactions are recorded

1. Current account

- Goods (acquired/sold goods, non-monetary gold, merchanting)
- Services (transport, tourism, communication, refining, insurance repairs, financial, etc.)
- Primary income
  - Labor wages
  - Investment income (direct, portfolio, other)
  - Other income
- Secondary income
  - Government Sector
  - Other sectors

Balance of payments structure (BPM6)

2. Capital account - includes capital transfers, which include gifts and non-repayable aid funds made for the express purpose of financing Fixed Assets, as well as debt cancellation and the acquisition/sale of non-financial capital assets (patents, licenses, property rights, trademarks, land for building embassies)

Balance of payments structure (BPM6)

3. Balance of financial account

- **Direct investments** - transactions related to the establishment of lasting and direct economic ties (purchase of at least 10% of shares in companies' capital)
- **Portfolio investments** – payments for the purchase and sale of equity securities (not being direct investments) and debt securities
- **Other investments** – financial transactions that are not included in direct investment, portfolio investment or official reserve assets and that affect domestic receivables and liabilities

Balance of payments structure (BPM6)

3. **Official reserve assets -** transactions made by the central bank in the field of turnover on current accounts and deposits in foreign banks, turnover in foreign securities, the IMF reserve tranche, and purchases and sales of monetary gold.
4. **Balance of errors and omissions -** results from transactions that were not recorded or incorrectly included in the reports

Basic balance of payments identity (slightly out of date)

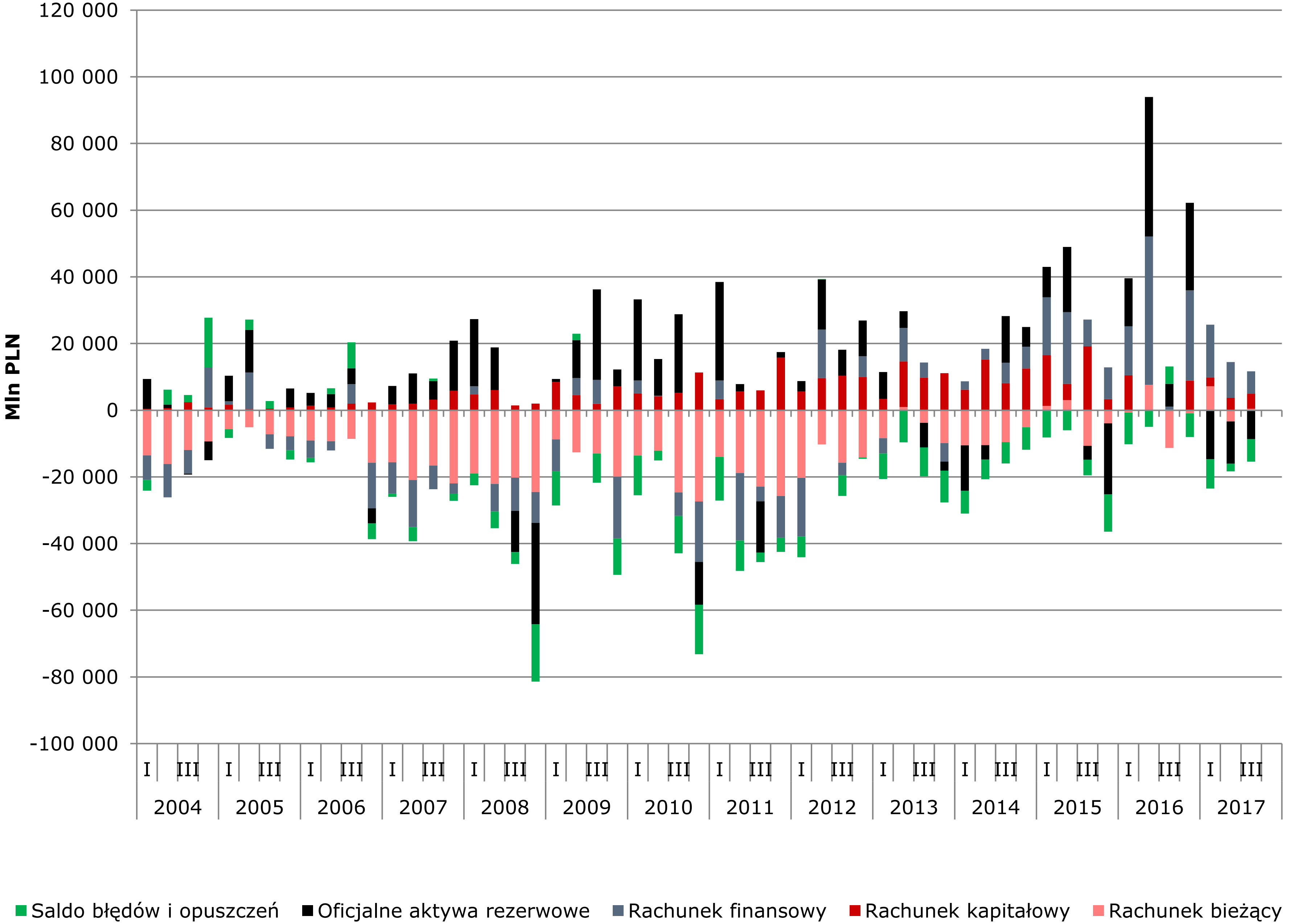
- Basic identity of the balance of payments (from the double entry principle):

$$CA + KA + FA + SD + RES = 0$$

Where:

- CA – current account
- KA – capital account
- FA – financial account
- SD – statistical discrepancy (errors and omissions)
- RES – reserves (change of reserves)

The balance of payments always adds up to 0 (in the accounting sense)!



Mln PLN
120 000
100 000
80 000
60 000
40 000
20 000
0
-20 000
-40 000
-60 000
-80 000
-100 000
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III
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2006
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2011
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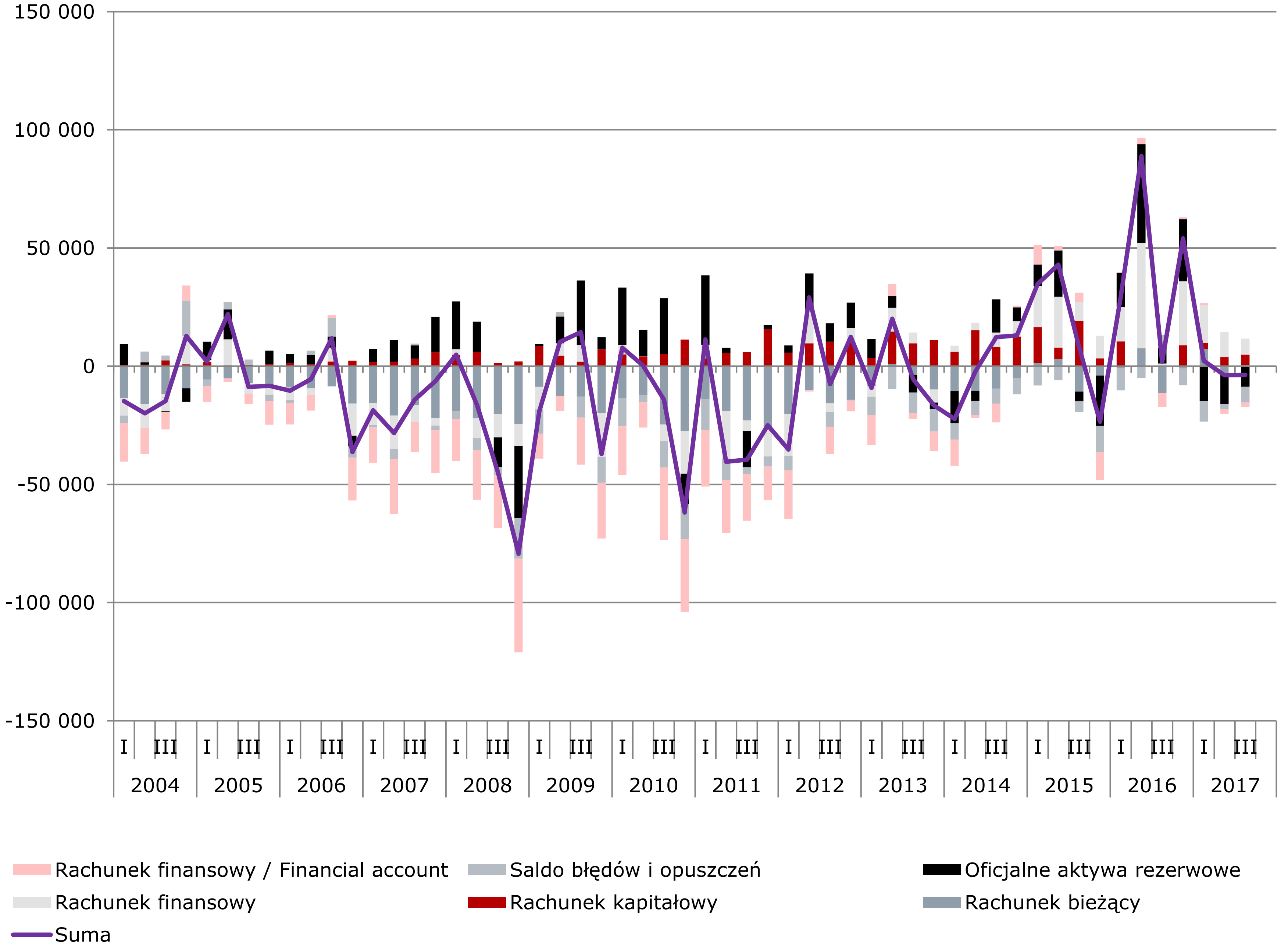
2014
2015
2016
2017
Saldo błędów i opuszczeń
Oficjalne aktywa rezerwowe
Rachunek finansowy
Rachunek kapitałowy
Rachunek bieżący


150 000
100 000
50 000
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-50 000
-100 000
-150 000
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Rachunek finansowy / Financial account
Saldo błędów i opuszczeń
Oficjalne aktywa rezerwowe
Rachunek finansowy
Rachunek kapitałowy
Rachunek bieżący
Suma

Basic identity of the balance of payments

- Why didn't the identity work?
  - Changing the way data is presented:
  - Current and capital account unchanged
  - A financial account with the opposite sign
- Example

	2018 III	
	BPM 5 (the old way)	BPM 6 (the new way)
Current account	-10 909	-10 909
Capital account	10 072	10 072
Financial account	-7 201	7 201
E & O	-6 364	-6 364
SUM	-14 402	0

Bop Task

Using data on the Polish balance of payments in the period 2010-2022, assess the truthfulness of the following statements:

- *The Polish economy is characterized by a persistent surplus on the financial account and a deficit on the capital account.*
- *In recent years, the two components of the current account with a positive balance were services and transfers.*
- *The current account deficit is financed primarily from direct investment.*
- *In recent years, we have observed a positive balance of errors and omissions.*
- *In 2012, Poland's balance of payments in the narrow sense was in deficit.*
- *The balance of primary income in Q3 2017 compensated for declines in goods.*

Which EU countries have a current account surplus and which have a current account deficit? Is it permanent or impermanent - refer to past data?

Od wydatków do dochodu rozporządzalnego w gospodarce otwartej

- $GDP = C + I + G + NX$
- GNP = GDP + Net income from abroad(R)
- NNP = GNP – Amort.
- NI = NNP + net unilatera transfers (TR) – T_{VAT}
- $DPI = NI + B - T_{PIT}$
- $DPI = C + S$
- $C + I + G + NX + R - \text{Depr.} + TR - T_{VAT} + B - T_{PIT} = C + S$
- $I = S + (T_{VAT} + T_{PIT} - B - G) - (NX + R + TR) + \text{Depr.}$
- Investment = Private savings + Gov. Savings + Abroad savings + depreciation
- Investment = Private savings + General government ballance – Current account ballance + deprec.

I = S – Gov deficit – CA

Task

Using data from the World Bank database, download data on Current account balance (% of GDP), Gross savings (% of GDP), Gross capital formation (% of GDP). Check whether there is a relationship from the National Accounts regarding investment savings and the current account. Suggested countries are USA, Germany any other country.

The identity of savings and investment: an interpretation

- **I = S – Gov. deficit– CA**
- **S = I + Gov. Deficit + CA**
- In a closed economy, only domestic savings are the source of investment financing; in an open economy they can be financed from foreign savings
- A closed economy can use private savings to invest or finance the budget deficit
- An open economy can allocate savings to build its own capital resources, finance the budget deficit or purchase foreign assets (investing abroad, borrowing abroad)

The identity of savings and investment: an interpretation

- Unlike a closed economy, an open economy with profitable investment opportunities does not need to increase domestic savings to take advantage of them
- It is possible to increase investment and increase foreign debt at the same time, without changing domestic savings

Exchange rate

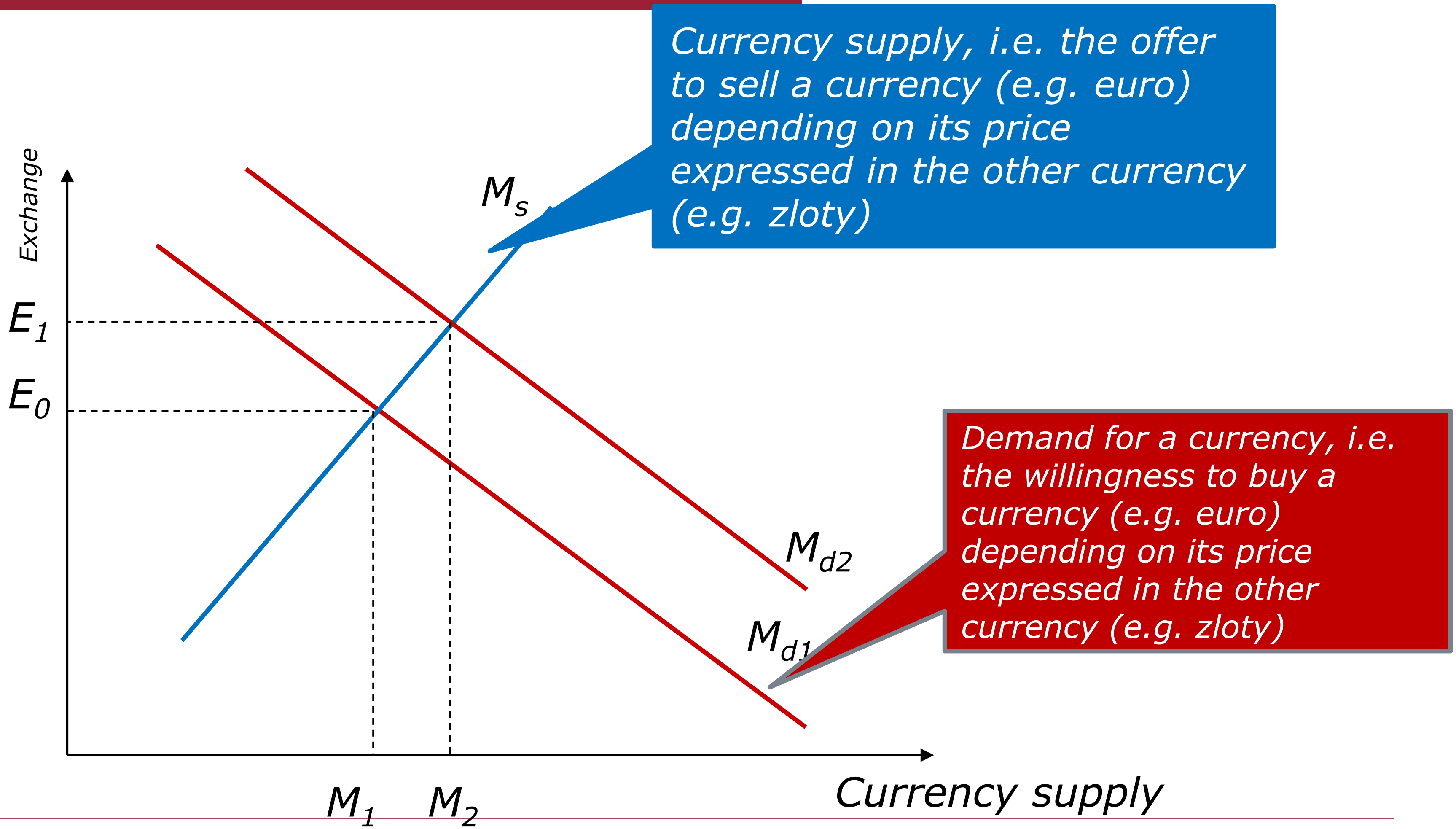
- **An exchange rate is the price of one currency expressed in another currency**
- Any exchange rate can be expressed in two ways:
  - **in direct quotation -** providing the price of foreign currencies in domestic currency
  - **in indirect quotation -** specifying how much the domestic currency costs in foreign currencies
- One way of quoting is the opposite of the other
- In Poland, we most often use direct quotation
- The entry 3.08 PLN/USD means the exchange rate (price) of the dollar expressed in Polish zlotys
- We often use the notation: USD/PLN 3.08

The currency system of a given country

- The monetary system (exchange rate system, exchange rate regime) is the range of exchange rate variability intended by the monetary authorities

- The authorities can decide that the exchange rate should not fluctuate at all or that it can change freely depending on the market situation (demand and supply system) or choose various intermediate variants

Kurs ustala się na rynku



Demand and supply of foreign currencies

The exchange rate is determined by the demand for and supply of a given currency; examples of factors causing their changes:

- **Foreign trade**, e.g. if a Polish company exports its product to Germany, its contractor pays the amount due in euro. The company incurs costs in PLN (employee wages, raw materials, energy, etc.), and therefore must sell euros on the currency market (convert them into zlotys) → the supply of euros increases
- **Remuneration of production factors employed abroad**, e.g. if an American company has a branch in Poland and operates on the Polish market, it earns profits in PLN, and the company's profit is transferred to the USA - first, PLN must be converted (on the currency market) into dollars → demand for dollars is growing
- **Capital flow**, e.g. the Finnish pension fund buys Polish government bonds; the fund has euros, and the government sells bonds for zlotys; the buyer of bonds must first buy zlotys on the currency market → the supply of euros is increasing