University of Warsaw
Faculty of Economic Sciences

International finance.

Łukasz Matuszczak, Phd

Introduction

1. Grading:

   To have a positive grade from the course you need to pass the exam ☺

   a) An obligatory requirement to attempt the exam
   b) You need to have 50% point from the exam
   c) The exam will include both the theoretical and practical questions.

2. Activity and presence:

   a) Extra points from activity are possible
   b) Presence

3. **The final grading:**

$$\boldsymbol{Grade = min[exam + activity; 100\%]}$$

Introduction

1. Literature:

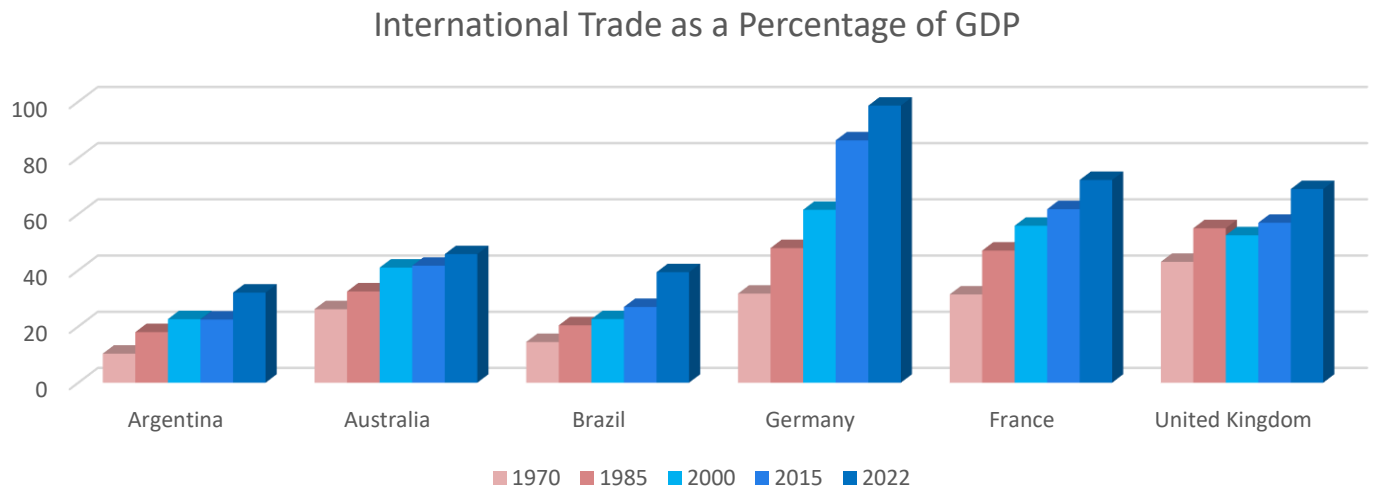
- Bekaert, G., & Hodrick, R. (2017). International financial management. Cambridge University Press.
- Harms P. (2016). International Macroeconomics 2nd, Neue ökonomische Grundrisse
- Madura, J. (2020). International financial management. Cengage Learning.
- Feenstra, R., Taylor, A. (2021). International Macroeconomics. Macmillan
- Ferrara, L., Hernando, I., & Marconi, D. (Eds.). (2018). International Macroeconomics in the wake of the Global Financial Crisis (Vol. 46). Springer.
- Haincourt, S. (2018). The Nature of the Shock Matters: Some Model-Based Results on the Macroeconomic Effects of Exchange Rate. International Macroeconomics in the Wake of the Global Financial Crisis, 233-247.
- Bussière, M., Schmidt, J., & Valla, N. (2018). International financial flows in the new normal: Key patterns (and why we should care) (pp. 249-269). Springer International Publishing.
- Giudici, G., Milne, A. & Vinogradov, D. Cryptocurrencies: market analysis and perspectives. J. Ind. Bus. Econ. 47, 1–18 (2020). https://doi.org/10.1007/s40812-019-00138-6
- U. Mukhopadhyay, A. Skjellum, O. Hambolu, J. Oakley, L. Yu and R. Brooks, "A brief survey of Cryptocurrency systems," 2016 14th Annual Conference on Privacy, Security and Trust (PST), Auckland, New Zealand, 2016, pp. 745-752, doi: 10.1109/PST.2016.7906988.
- Fang, F., Ventre, C., Basios, M. et al. Cryptocurrency trading: a comprehensive survey. Financ Innov 8, 13 (2022). https://doi.org/10.1186/s40854-021-00321-6
- Dyntu, V., & Dykyi, O. (2018). CRYPTOCURRENCY IN THE SYSTEM OF MONEY LAUNDERING. Baltic Journal of Economic Studies, 4(5), 75-81. https://doi.org/10.30525/2256-0742/2018-4-5-75-81

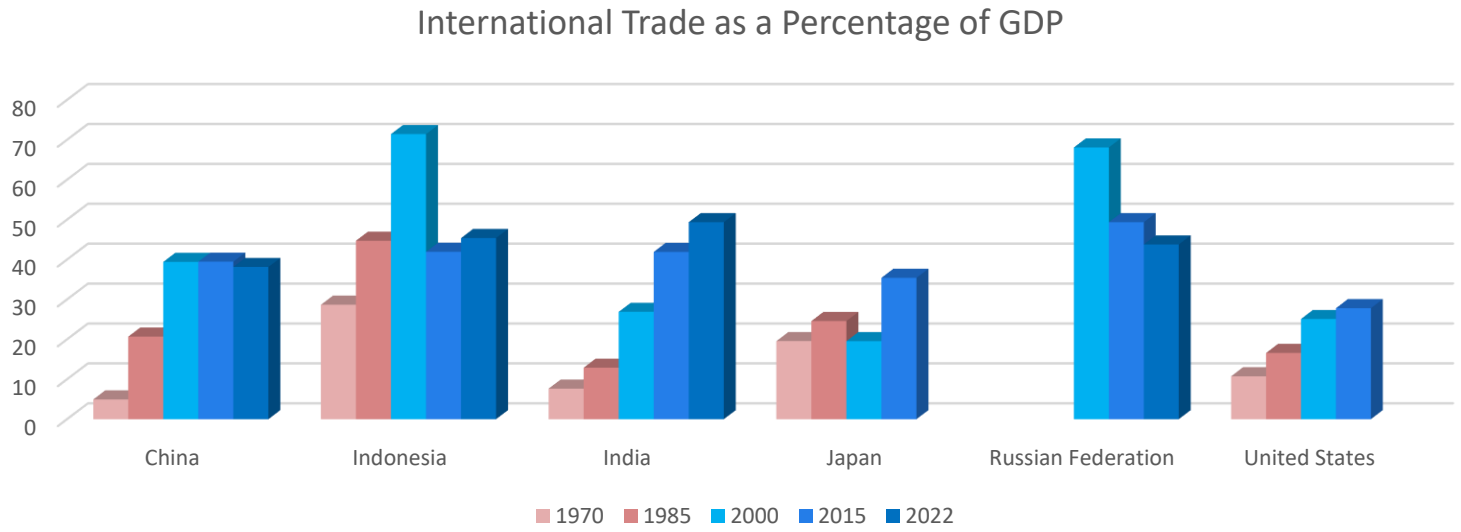
Introduction

- Globalization: affects all aspects of society, but economically, two main trends define it.
  - First, countries continue to expand their trade in goods and services.
  - Second, countries continue to reduce their barriers to capital flows.

1. The Growth of International Trade Trade Liberalization
2. International Efforts to Promote Free Trade
   - The **General Agreement on Tariffs and Trade (GATT)** , signed in 1947
     - **The World Trade Organization (WTO)** established in 1995
     - **RTA reduction: European Union (EU) , the North America Free Trade Agreement (NAFTA) , Mercosur in South America, and the Association of Southeast Asian Nations (ASEAN) .**

4. The Growth in Trade

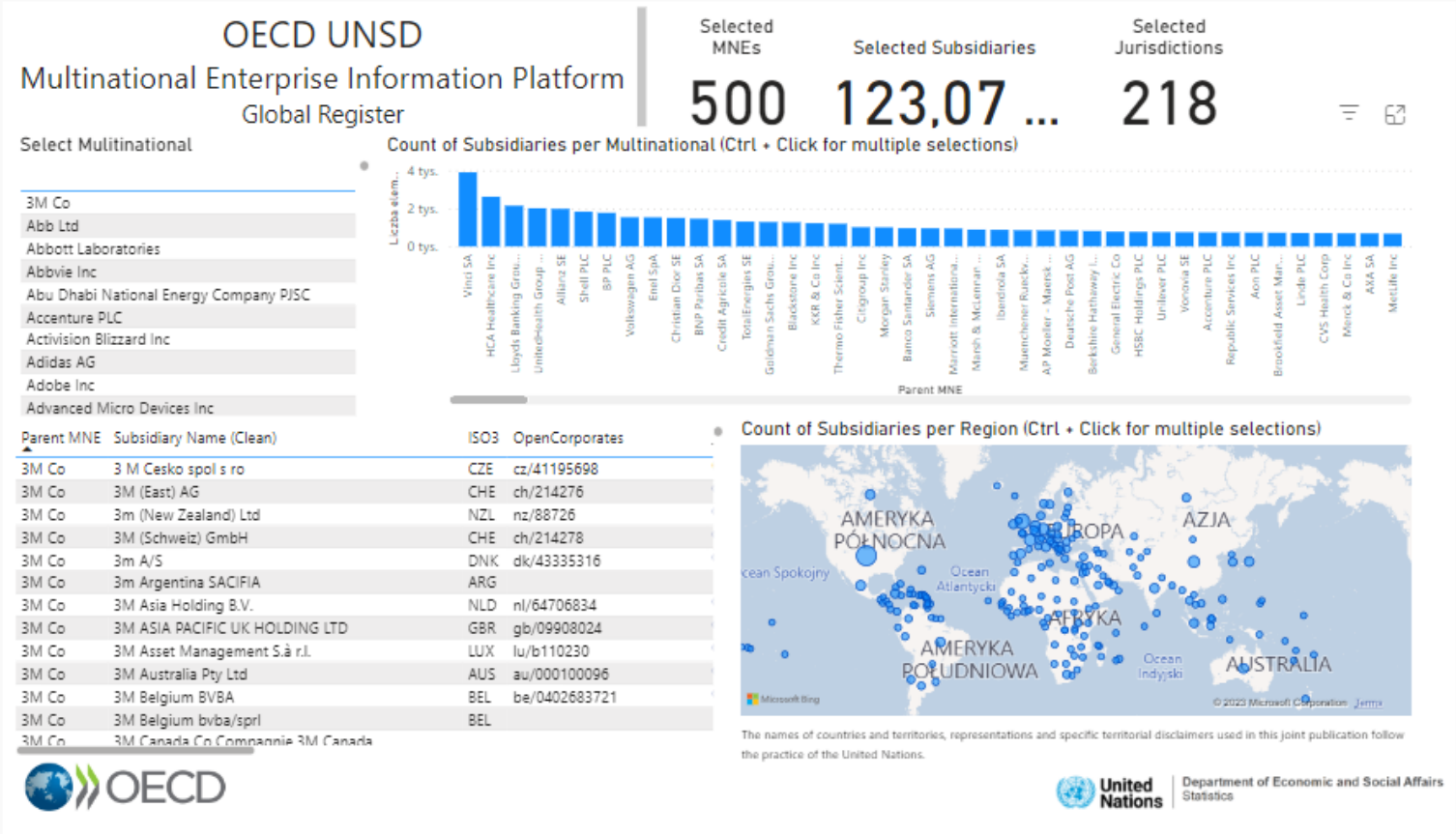




Introduction

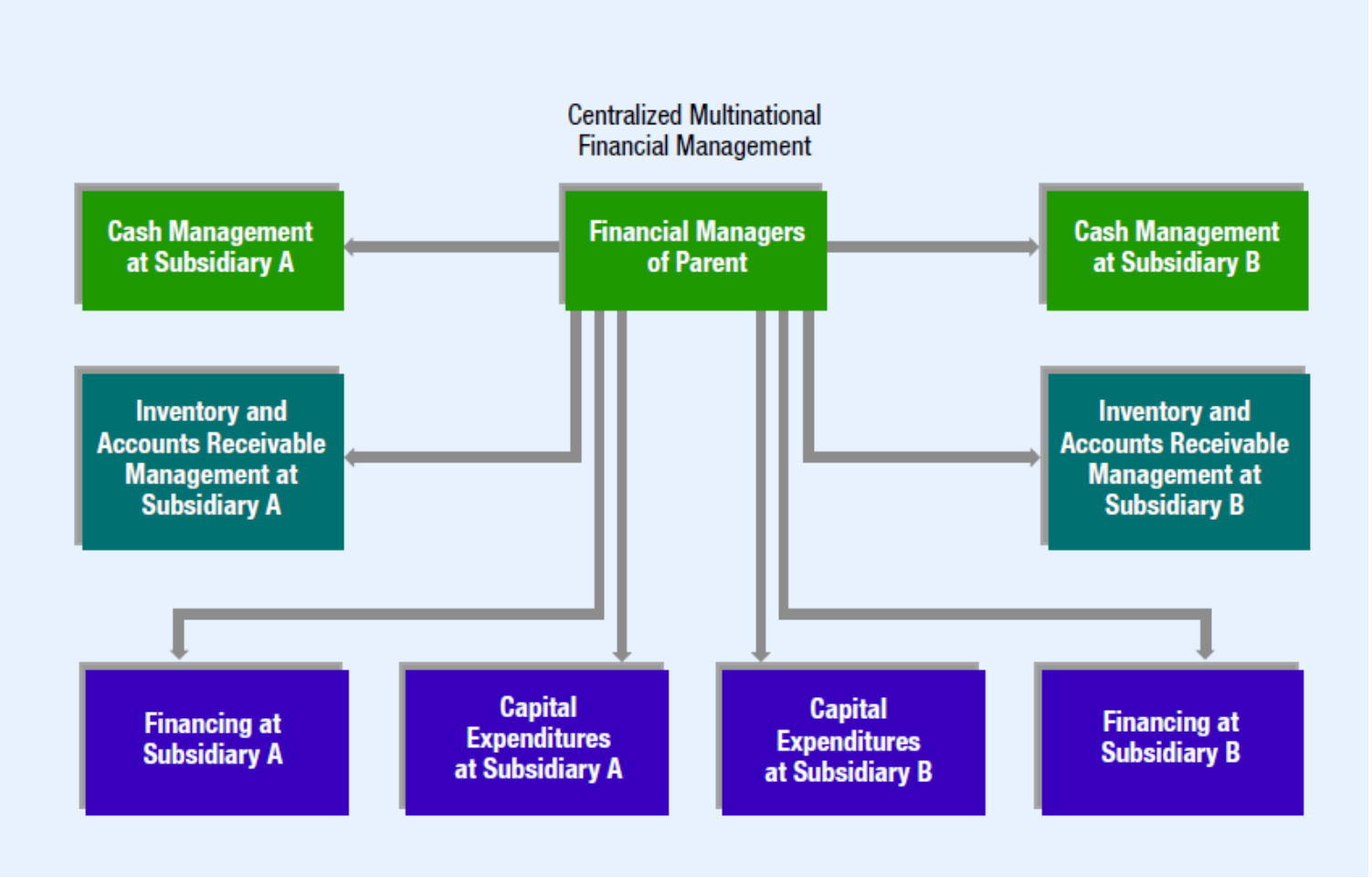
5. How Multinational Corporations Are Affecting Trade

Visualise the database using the dashboard:



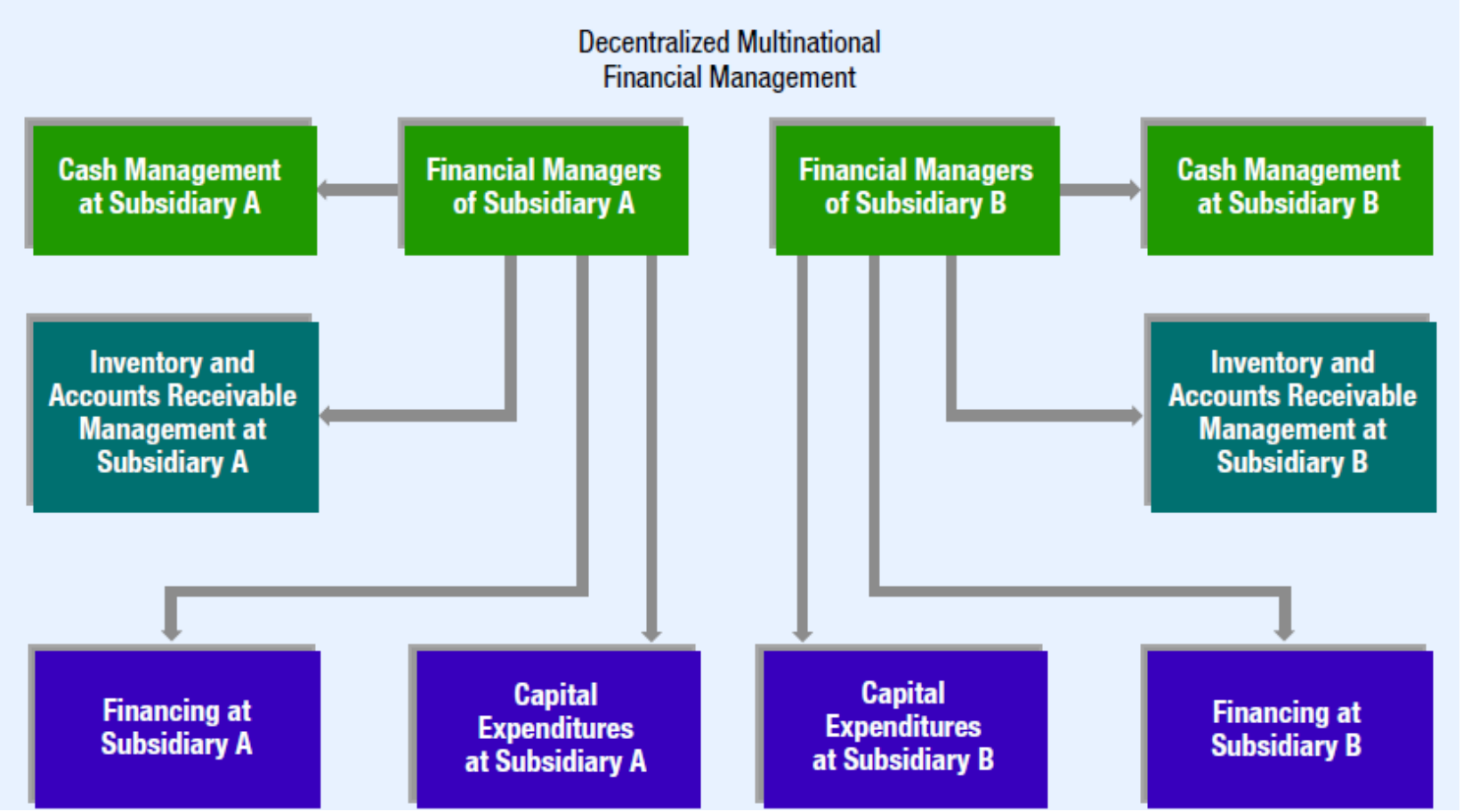
https://www.oecd.org/sdd/its/mne-platform.htm

Multinational Corporations – management style

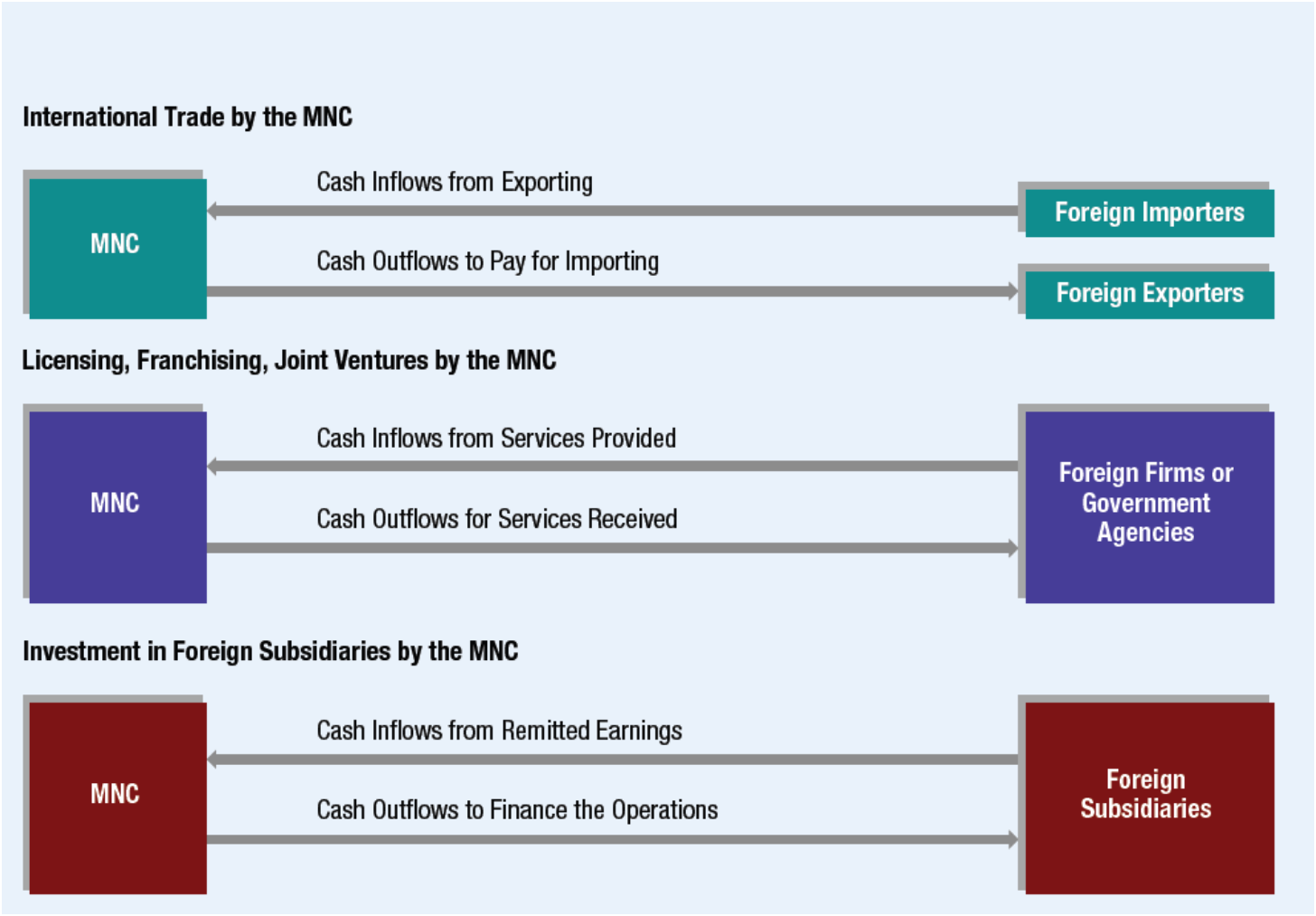


Introduction

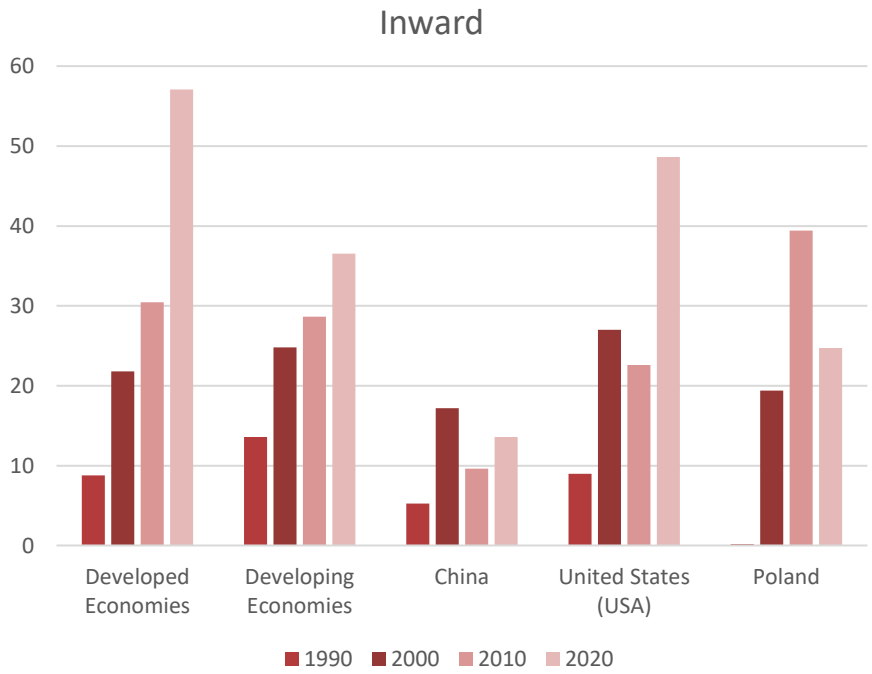
Multinational Corporations – management style

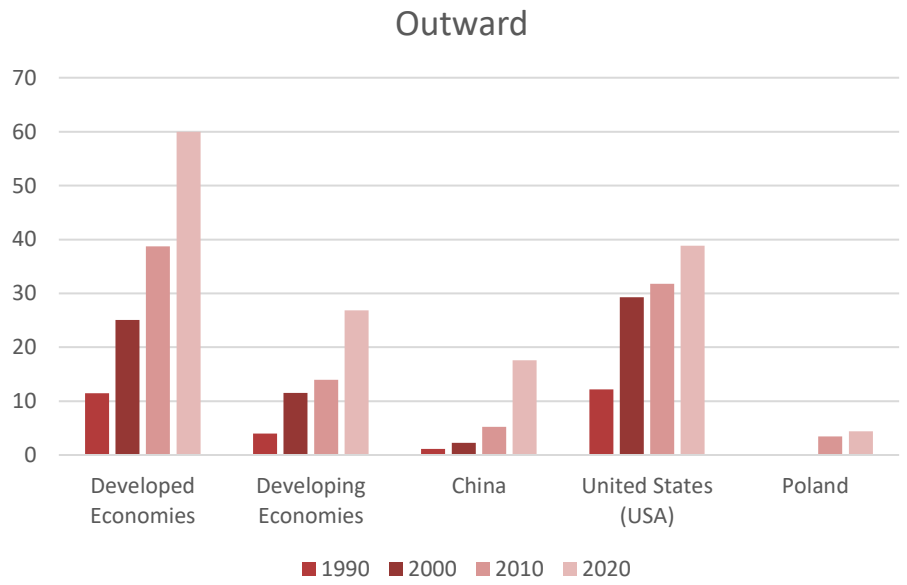


Multinational Corporations – Cash Flow Diagrams for MNCs



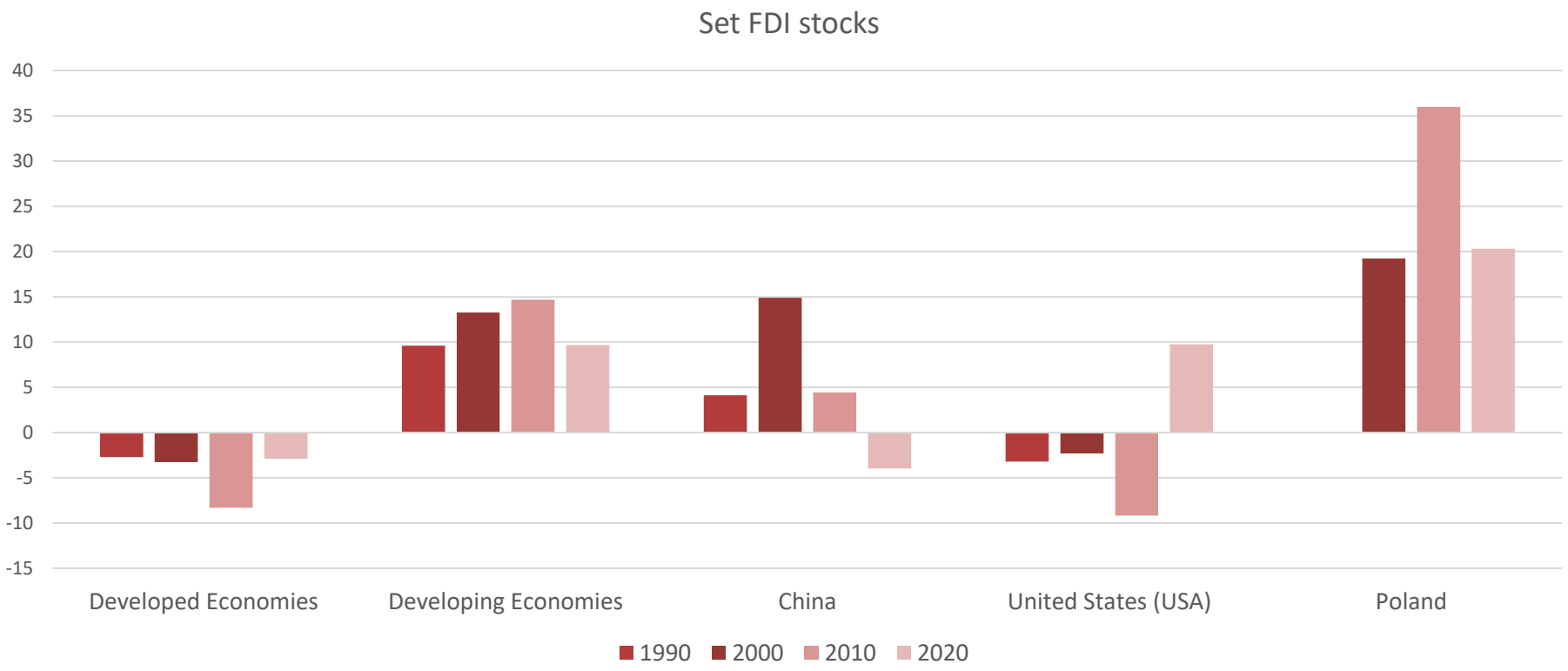
Foreign direct investment: Inward and outward and stock, annual





https://unctadstat.unctad.org/datacentre/dataviewer/US.FdiFlowsStock

Foreign direct investment: Inward and outward and stock, annual



https://unctadstat.unctad.org/datacentre/dataviewer/US.FdiFlowsStock

Introduction

What is the main purpose/aim of MNC?

Introduction

Multinational Corporations - Valuation Model for an MNC

- Valuation Model for an MNC

Domestic Model:

$$V = \sum_{t=1}^{n} \left(\frac{E(CF_{\$,t})}{(1+k)^t} \right)$$

where:

- **V (value)** is specified as the present value of its expected dollar
- $E(CF_{\$,t})$ is expected net cash flows to be received at the end of period **t**
- **n** is the number of future periods in which cash flows are received
- **k** represents not only the weighted average cost of capital but also the required rate of return by investors and creditors who provide funds to the MNC

Multinational Model:

$V = \sum_{t=1}^{n} \left(\frac{E(CF_{\$,t})}{(1+k)^t} \right)$, **where**

$$E(CF_{\$,t}) = \sum_{j=1}^{m} \left[E(CF_{j,t}) \times E(S_{j,t}) \right]$$

- $CF_{j,t}$ represents the amount of cash flow denominated in a particular foreign curency j at the end of period t
- **Sj,t** denotes the exchange rate

Introduction

Multinational Corporations - Valuation Model for an MNC - EXAMPLE

Carolina Co. has expected cash flows of $100,000 from local business and 1 million Mexican pesos from business in Mexico at the end of period t. Assuming that the Peso's value is expected to be $.09 when converted into dollars, the expected dollar cash flows are:

$$E(CF_{\$,t}) = \sum_{j=1}^{m}[E(CF_{j,t}) \times E(S_{j,t})] = \$CF\ from\ U.S\ operations + \$\ CF\ operations\ from\ Mexico =$$
$$= \$100,000 + [Pesos\ 1,000,000 * (\$0,9)] = \$100,000 + \$90,000 = \$190,000$$

$$V = \sum_{t=1}^{n}\left(\frac{\sum_{j=1}^{m}[E(CF_{j,t}) \times E(S_{j,t})]}{(1+k)^t}\right)$$

To avoid double counting, cash flows of the MNC's subsidiaries are considered in the valuation model only when they reflect transactions with the U.S. parent. Therefore, any expected cash flows received by foreign subsidiaries should not be counted in the valuation equation unless they are expected to be remitted to the parent.

Introduction

Multinational Corporations - Uncertainty Surrounding an MNC's Cash Flows

- Exposure to International Economic Conditions

Uncertain foreign currency cash flows due to uncertain foreign economic and political conditions

Uncertainty surrounding future exchange rates

$$V = \sum_{t=1}^{n} \left\{ \frac{\sum_{j=1}^{m} [E(CF_{j,t}) \times E(S_{j,t})]}{(1+k)^t} \right\}$$

Uncertainty Surrounding an MNC's Valuation:

Exposure to Foreign Economies: If $[CF_{j,t} < E(CF_{j,t})] \rightarrow V\downarrow$

Exposure to Political Risk: If $[CF_{j,t} < E(CF_{j,t})] \rightarrow V\downarrow$

Exposure to Exchange Rate Risk: If $[S_{j,t} < E(S_{j,t})] \rightarrow V\downarrow$

Introduction

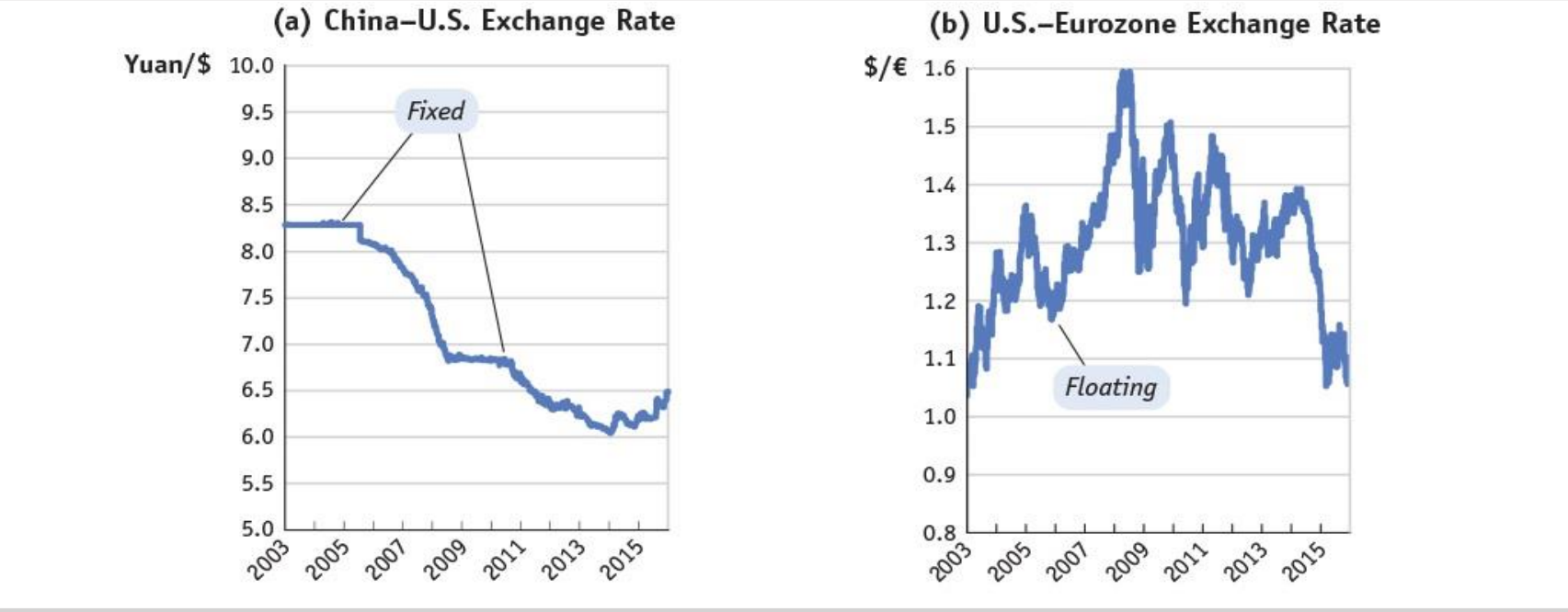
- Key features of international finances:
  1. The world has many monies/currencys (*not one*).
  2. Countries are financially integrated (*not isolated*).
  3. In this context economic policy choices are made (*but not always very well*).

- Countries have different currencies; therefore, a complete understanding of how a country's economy works requires that we study the exchange rate (the price of foreign currency).

- Because products and investments move across borders, fluctuations in exchange rates have significant effects on the relative prices of home and foreign:
  - Goods (such as autos and clothing)
  - Services (such as insurance and transportation)
  - Assets (such as equities and bonds)

How Exchange Rates Behave

FIGURE 1-1



Major Exchange Rates The chart shows two key exchange rates from 2003 to 2016. The China–U.S. exchange rate varies little and would be considered a fixed exchange rate, despite a period when it followed a gradual trend. The U.S.–Eurozone exchange rate varies a lot and would be considered a floating exchange rate.

1 Foreign Exchange: Currencies and Crises

How Exchange Rates Behave

Based on differences in exchange rate behavior, economists divide the world into two groups of countries: those with **fixed** (or *pegged*) **exchange rates** and those with **floating** (or *flexible*) **exchange rates**.

Why Exchange Rates Matter

Changes in exchange rates can affect an economy in two ways:

- Changing international relative prices of goods: One country's goods become more or less expensive relative to another's.

- Changing international relative prices of assets: Fluctuations in wealth can then affect firms, governments, and individuals.

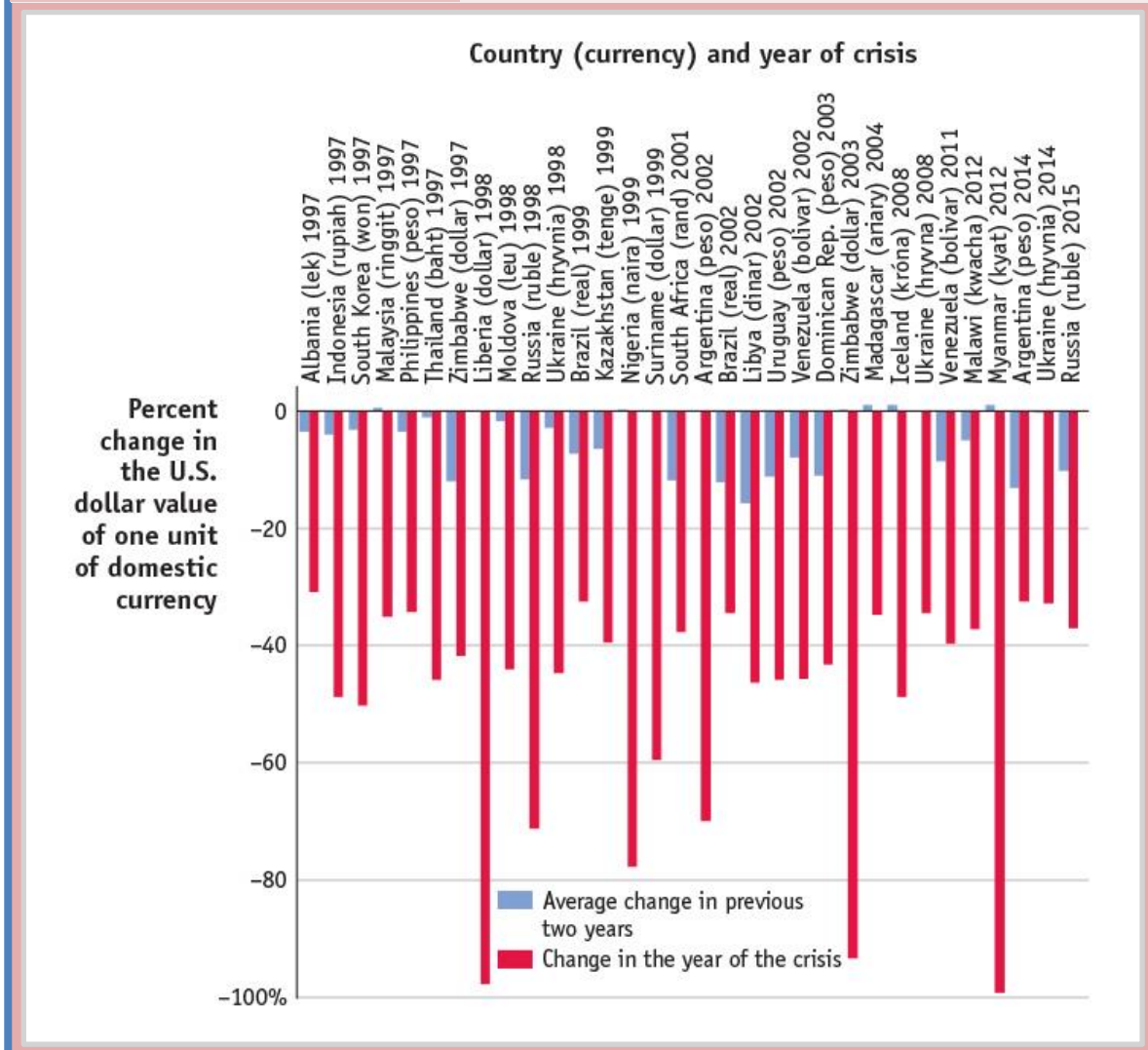
When Exchange Rates Misbehave

- In an **exchange rate crisis** a currency experiences a sudden and pronounced loss of value against another currency following a period in which the exchange rate had been fixed or relatively stable.

- There were more than 32 exchange rate crises in the 18-year period from 1997 to 2015.

- Quite often, e.g., Argentina in 2002, an exchange rate crisis can coincide with other types of crises: a financial crisis (bank failures) and/or a sovereign debt crisis (government default).

FIGURE 1-2



Currency Crashes

The chart shows that exchange rate crises are common events. An exchange rate crisis is defined here as an event in which a currency loses more than 30% of its value in U.S. dollar terms over one year, having changed by less than 20% each of the previous two years.

When Exchange Rates Misbehave

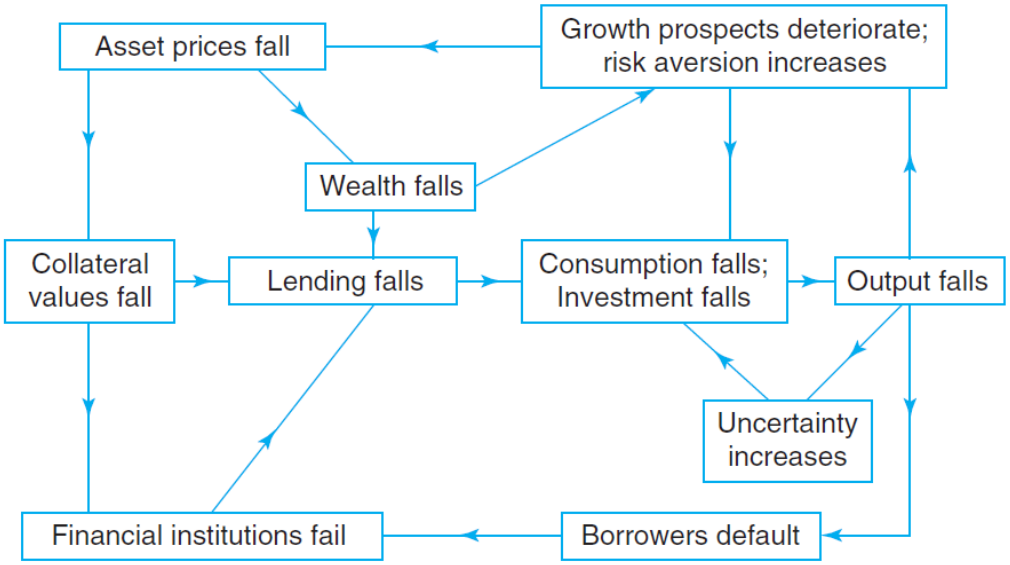
- In an **exchange rate crisis** a currency experiences a sudden and pronounced loss of value against another currency following a period in which the exchange rate had been fixed or relatively stable.

- There were more than 32 exchange rate crises in the 18-year period from 1997 to 2015.

- Quite often, e.g., Argentina in 2002, an exchange rate crisis can coincide with other types of crises: a financial crisis (bank failures) and/or a sovereign debt crisis (government default).

1 A Global Financial Crisis

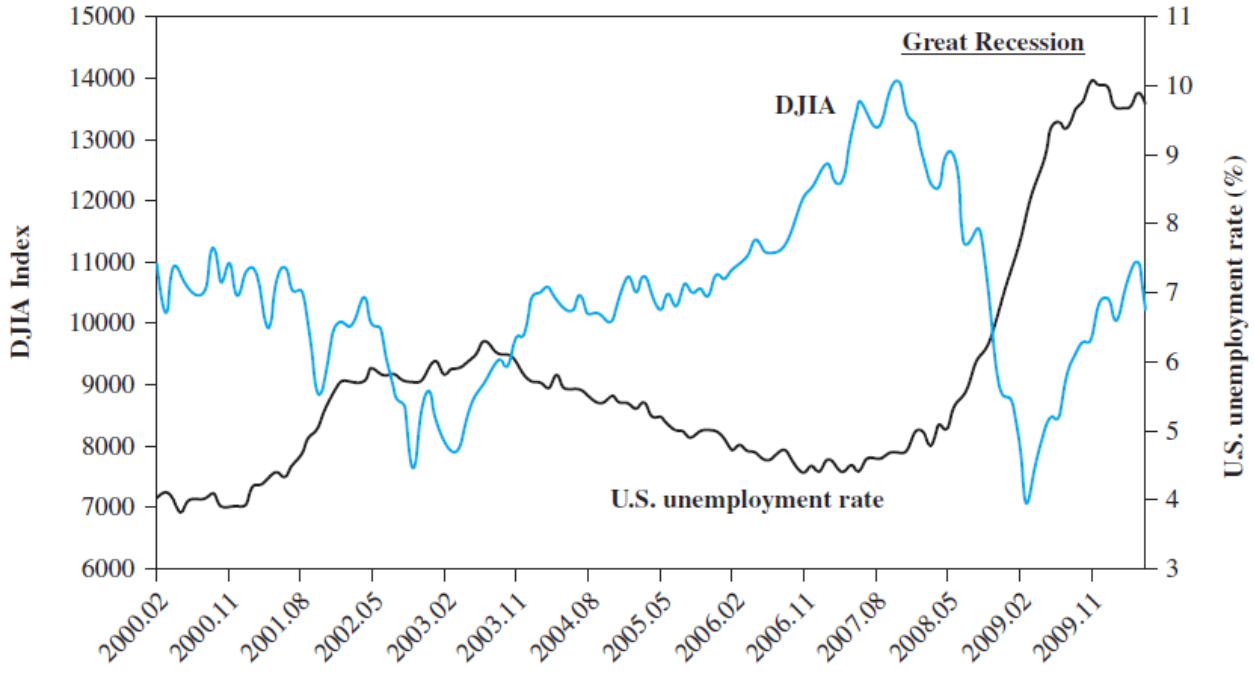
- In the United States, securitization and the government-condoned quest to allow every household to own a home fueled spectacular growth in subprime mortgages between 2000 and 2006.



Note: This exhibit is inspired by Figure 19-1 in Gregory Mankiw and Laurence Ball (2011).

- **Subprime mortgages** are made to borrowers with relatively low credit scores, and such mortgages may have special features to reduce loan payments in the early years of the loan. Because house prices kept increasing, many people bought houses they could not really afford or speculated on rising house prices

U.S. Unemployment Rate and Dow Jones Industrial Average (DJIA)

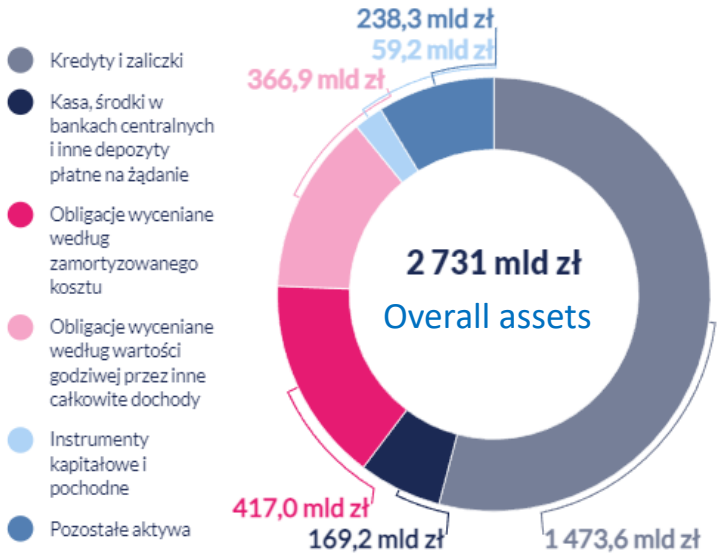


- Financial institutions securitized these mortgages and initially sold them to investors (pension funds, hedge funds, and banks) across the world, but as time went by, the institutions increasingly held the least risky parts of the tranches on their books
- However,in 2006 and 2007, house prices started to fall and defaults on subprime mortgages started to rise. In 2007, two companies specializing in subprime mortgages declared bankruptcy
- This raised the specter of a liquidity crisis in the U.S. financial system. In the United States, haircuts on securitized loans began to creep up (see Gorton, 2010), but in the United Kingdom, Northern Rock Bank faced a classic bank run in September 2007, after it ran short of liquid assets and asked the Bank of England, the United Kingdom's central bank, for a loan.

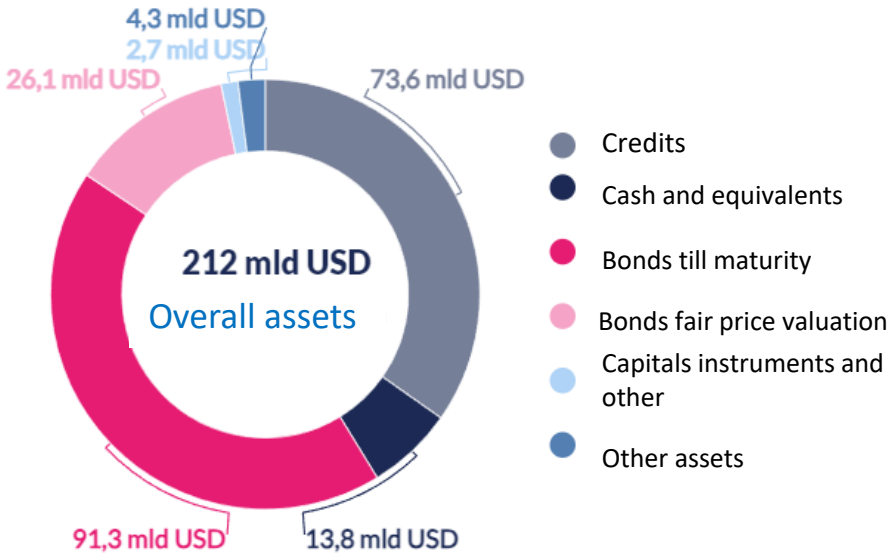
- On March 16, 2008, JPMorgan Chase
- On September 15th, Lehman Brothers, an investment bank founded in 1850, declared bankruptcy

Polish banks do not go Silicon Valley Banks path

Polish banking sector Assets structure, January 2023



Silicon Valley Bank Assets structure, December 2022



Source: NBP, SVB report

2 Globalization of Finance: Debts and Deficits

Financial globalization has taken hold around the world, starting in the economically advanced countries and spreading to many emerging market countries.

Deficits and Surpluses: The Balance of Payments

- At the national level, economic measurements such as **income**, **expenditure**, **deficit**, and **surplus** are important barometers of economic performance, and the subject of heated policy debate.

- The income measure is called *gross national disposable income*; the expenditure measure is called *gross national expenditure*. The difference between the two is a key macroeconomic aggregate called the *current account*.

Deficits and Surpluses: The Balance of Payments

TABLE 1-1 (1 of 2) Inflation Performance and the Exchange Rate Regime

Income, Expenditure, and the Current Account The table shows data for the United States from 1990 to 2015 in billions of U.S. dollars.

	Income *Gross National Disposable Income*	Expenditure *Gross National Expenditure*	Difference *Current Account*
1990	$5,983	$6,058	−$75
1991	6,211	6,203	8
1992	6,529	6,574	−46
1993	6,865	6,944	−79
1994	7,287	7,401	−115
1995	7,649	7,754	−105
1996	8,083	8,197	−114
1997	8,581	8,711	−129
1998	9,047	9,252	−205
1999	9,631	9,917	−287
2000	10,257	10,661	−404
2001	10,602	10,991	−389
2002	10,953	11,404	−451

Deficits and Surpluses: The Balance of Payments

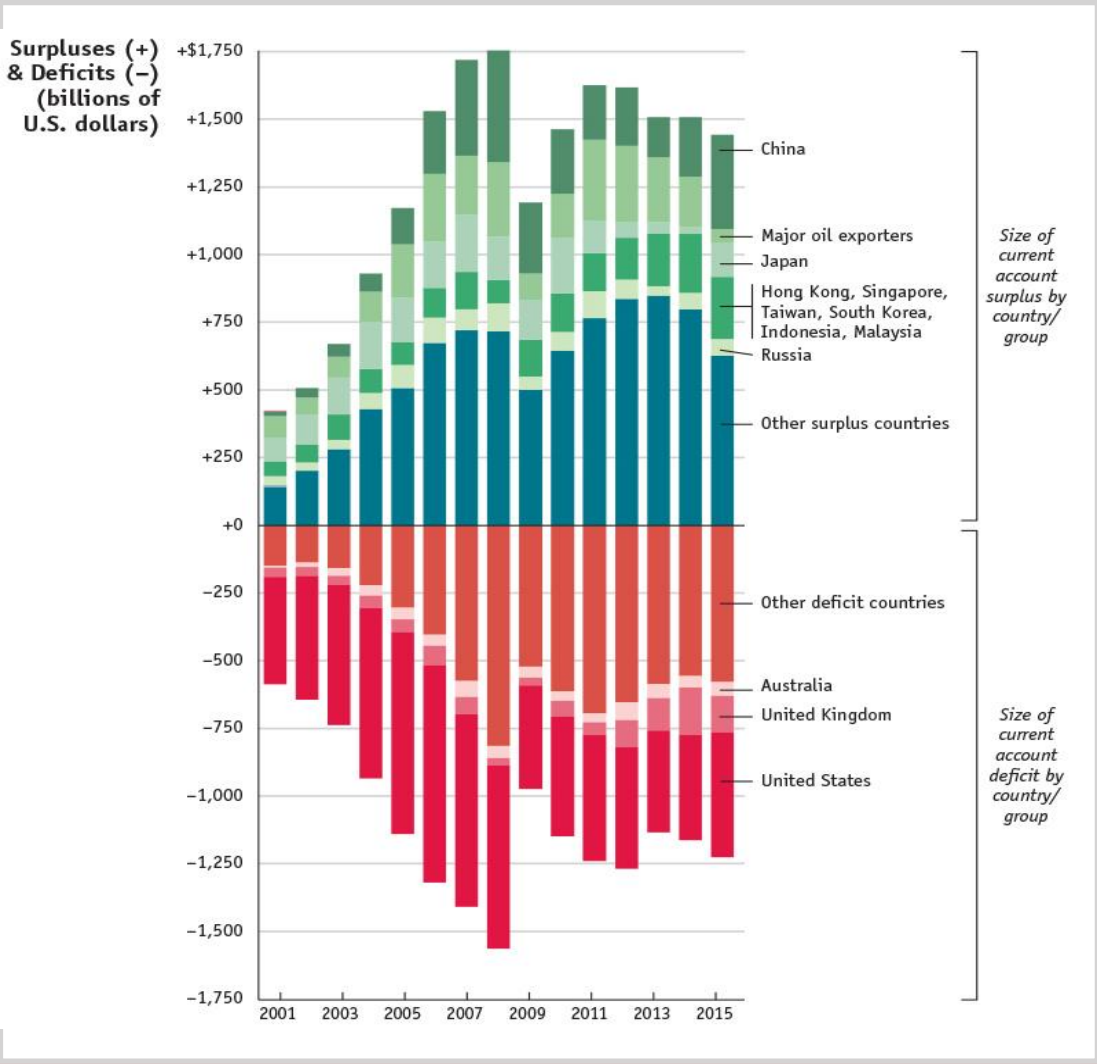
TABLE 1-1 (2 of 2) Inflation Performance and the Exchange Rate Regime (continued)

Income, Expenditure, and the Current Account The table shows data for the United States from 1990 to 2015 in billions of U.S. dollars. During this period, in all but one-year U.S. expenditure exceeded income, with the U.S. current account in deficit. The last (small) surplus was in 1991.

	Income *Gross National Disposable Income*	Expenditure *Gross National Expenditure*	Difference *Current Account*
2003	11,499	12,014	−516
2004	12,267	12,894	−627
2005	13,077	13,815	−738
2006	13,825	14,627	−802
2007	14,478	15,196	−718
2008	14,750	15,442	−692
2009	14,432	14,814	−382
2010	15,031	15,477	−446
2011	15,616	16,098	−482
2012	16,253	16,721	−468
2013	16,776	17,172	−396
2014	17,477	17,878	−401
2015	18,011	18,476	−465

2 Globalization of Finance: Debts and Deficits

FIGURE 1-3



Global Imbalances

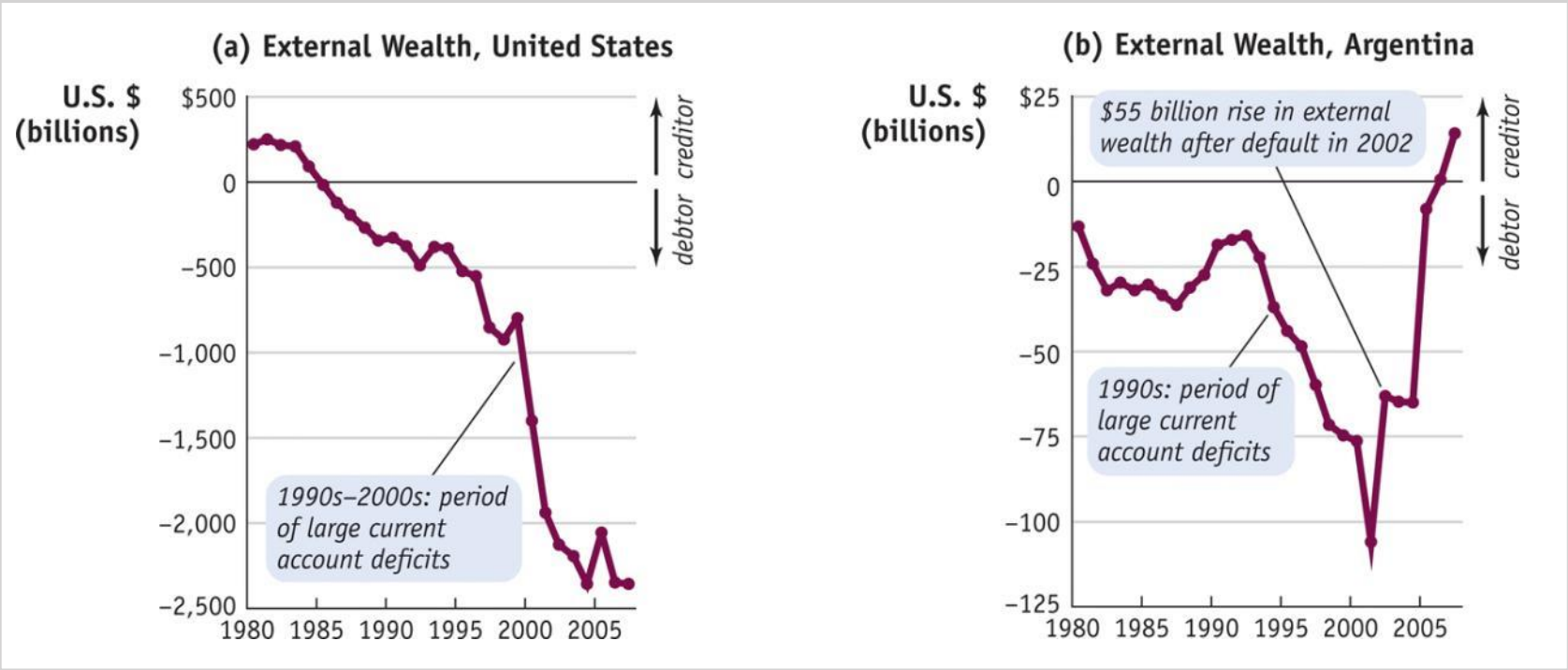
For more than a decade, the United States current account deficit has accounted for about half of all deficits globally. Major offsetting surpluses have been seen in Asia (e.g., China and Japan) and in oil-exporting countries.

Debtors and Creditors: External Wealth

- Total **wealth** or net worth is equal to your assets (what others owe you) minus your liabilities (what you owe others).
    - When you run a surplus and save money (buying assets or paying down debt), your total wealth, or net worth, tends to rise.
    - Similarly, when you have a deficit and borrow (taking on debt or running down savings), your wealth tends to fall.
- From an international perspective, a country's net worth is called its ***external wealth*** and it equals the difference between its foreign assets (what it is owed by the rest of the world) and its foreign liabilities (what it owes to the rest of the world).
- Positive external wealth makes a country a creditor nation; negative external wealth makes it a debtor nation.

Debtors and Creditors: External Wealth

FIGURE 1-4



External Wealth A country's net credit position with the rest of the world is called external wealth. The time series charts show levels of external wealth from 1980 to 2007 for the United States in panel (a) and Argentina in panel (b). **All else equal**, deficits cause external wealth to fall; surpluses (and defaults) cause it to rise.

Darlings and Deadbeats: Defaults and Other Risks

- Sovereign governments can repudiate debt without legal penalty or hurt creditors in other ways such as by taking away their assets or changing laws or regulations.
- The difference between the interest paid on a safe U.S. Treasury bond and the interest paid by on a bond issued by a nation with greater risk is called **country risk**.
  - On January 8, 2016, the *Financial Times* reported that relatively good investment-grade governments such as Poland (grade A−) carried a country risk of +1.48%, while governments with junk-bond grades such as Turkey (grade BBB–) had a country risk of 3.38%.

3 Government and Institutions: Policies and Performance

- Government actions influence economic outcomes in many ways via decisions about exchange rates, macroeconomic policies, debt repayment, and so on.
- To gain a deeper understanding of the global macroeconomy, economists study **policies**, rules and norms, or **regimes** in which policy choices are made.
- At the broadest level, research also focuses on **institutions**, a term that refers to the overall legal, political, cultural, and social structures that influence economic and political actions.

3 Government and Institutions: Policies and Performance

Three important features of the broad macroeconomic environment in the remainder of this book are:

- The rules that a government decides to apply to restrict or allow capital mobility.
- The decision that a government makes between a fixed and a floating exchange rate regime.
- The institutional foundations of economic performance, such as the quality of governance that prevails in a country.

Integration and Capital Controls: The Regulation of International Finance

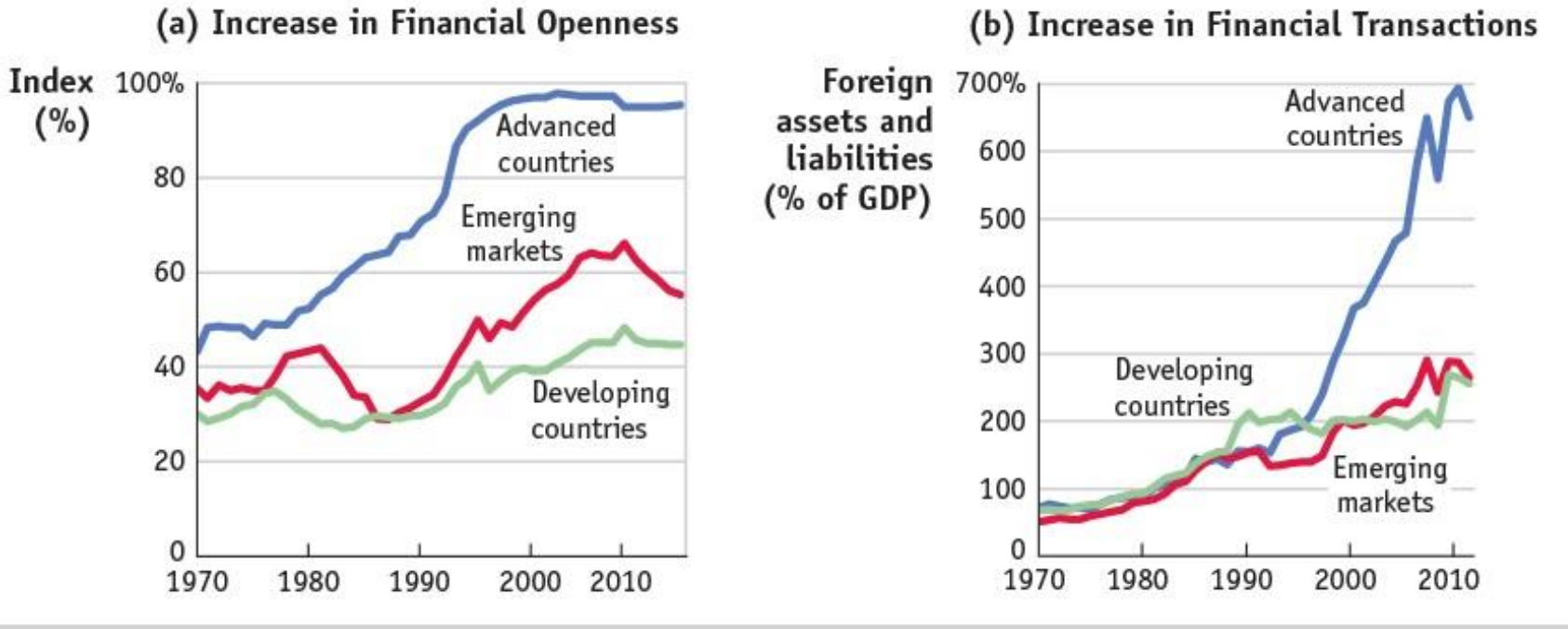
International trade has grown as trade barriers have diminished, and many nations have encouraged international capital movement by lifting restrictions on financial transactions.

Three groups of countries that will figure often in our analysis are:

- **Advanced countries**—countries with high levels of income per person that are well integrated into the global economy.
- **Emerging markets**—mainly middle-income countries that are growing and becoming more integrated into the global economy.
- **Developing countries**—mainly low-income countries that are not yet well integrated into the global economy.

3 Government and Institutions: Policies and Performance

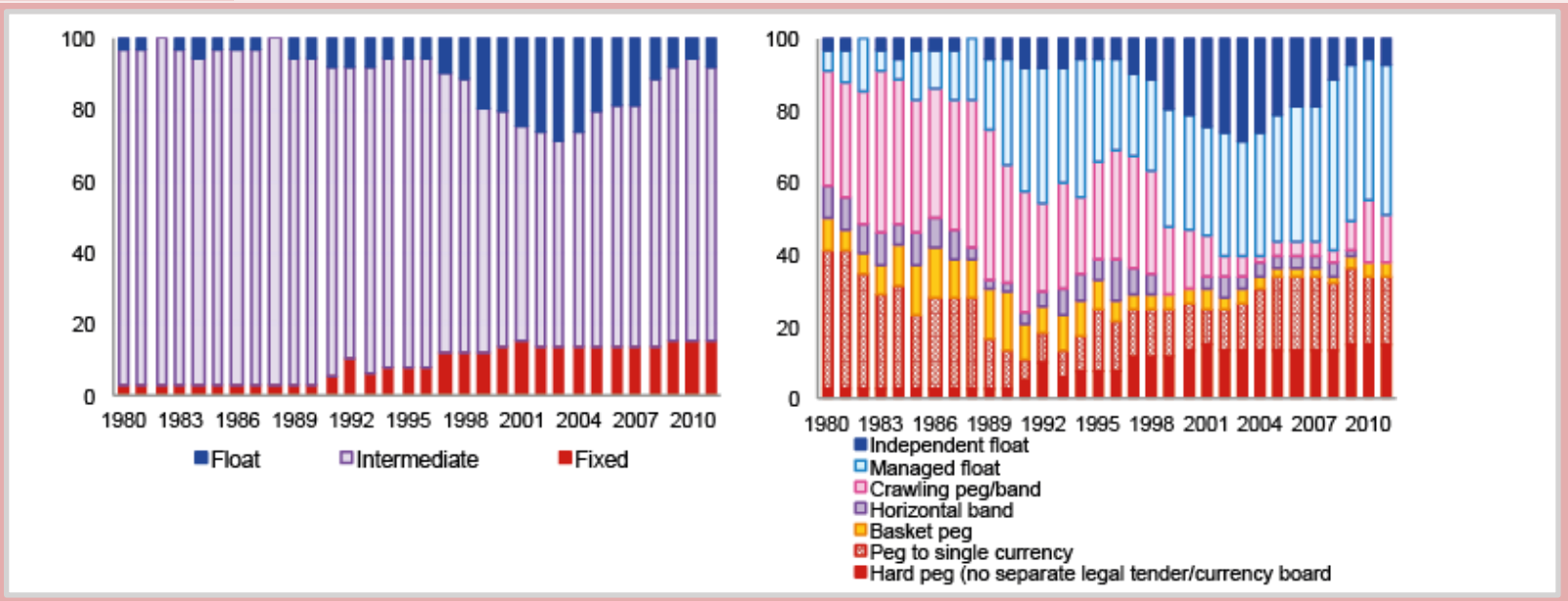
FIGURE 1-5



Financial Globalization Since the 1970s, many restrictions on international financial transactions have been lifted, as shown by the time series chart in panel (a). The volume of transactions has also increased dramatically, as shown in panel (b). These trends have been strongest in the advanced countries, followed by the emerging markets and the developing countries.

Independence and Monetary Policy: The Choice of Exchange Rate Regimes

FIGURE 1-6



Exchange Rate Regimes The chart shows a classification of exchange rate regimes around the world using the data for the year 2010.

Independence and Monetary Policy: The Choice of Exchange Rate Regimes

Despite the abundance of currencies, we also see newly emerging forms of monetary organization.

- Some groups of countries have sought to simplify their transactions through the adoption of a **common currency** with shared policy responsibility. The most notable example is the Eurozone.
- Still other countries have chosen to use currencies over which they have no policy control, as with the recent cases of **dollarization** in El Salvador and Ecuador.

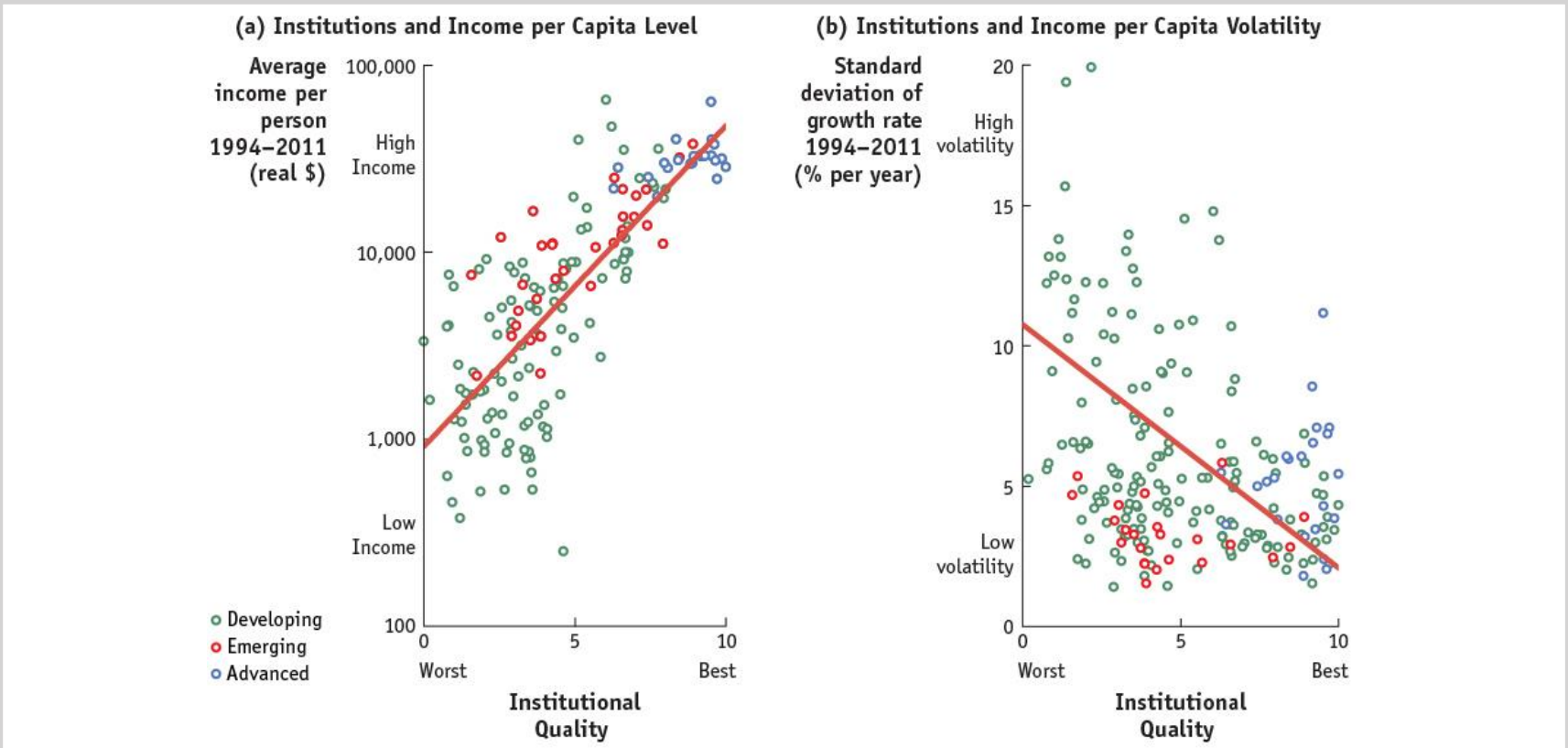
Institutions and Economic Performance: The Quality of Governance

The legal, political, social, cultural, ethical, and religious structures of a society set the environment for economic prosperity and stability, or poverty and instability.

- Better quality institutions are correlated with higher levels of **income per capita**.
- Better quality institutions are correlated with lower levels of **income volatility**.

3 Government and Institutions: Policies and Performance

FIGURE 1-7



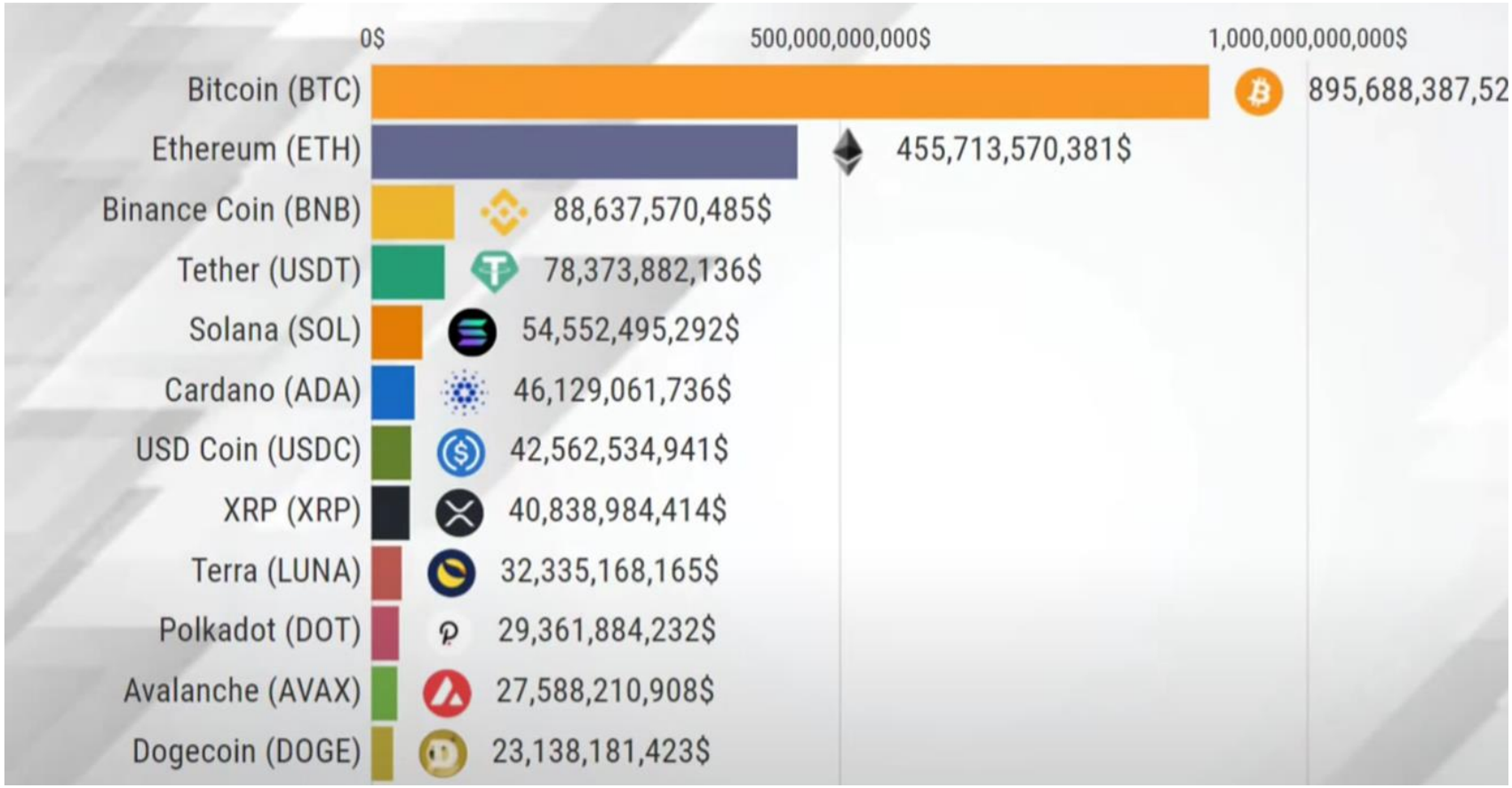
Institutions and Economic Performance The scatterplots show how an index measuring the quality of a country's institutions is positively correlated with the level of income per capita as shown in panel (a) and is inversely correlated with the volatility of income per capita as shown in panel (b). In each case, the line of best fit is shown.

4 Cryptocurrencies

Top 12 Cryptocurrency by Market Capitalization, September 22

4 Cryptocurrencies

Top 12 Cryptocurrency by Market Capitalization, 2 January 2023



4 Cryptocurrencies

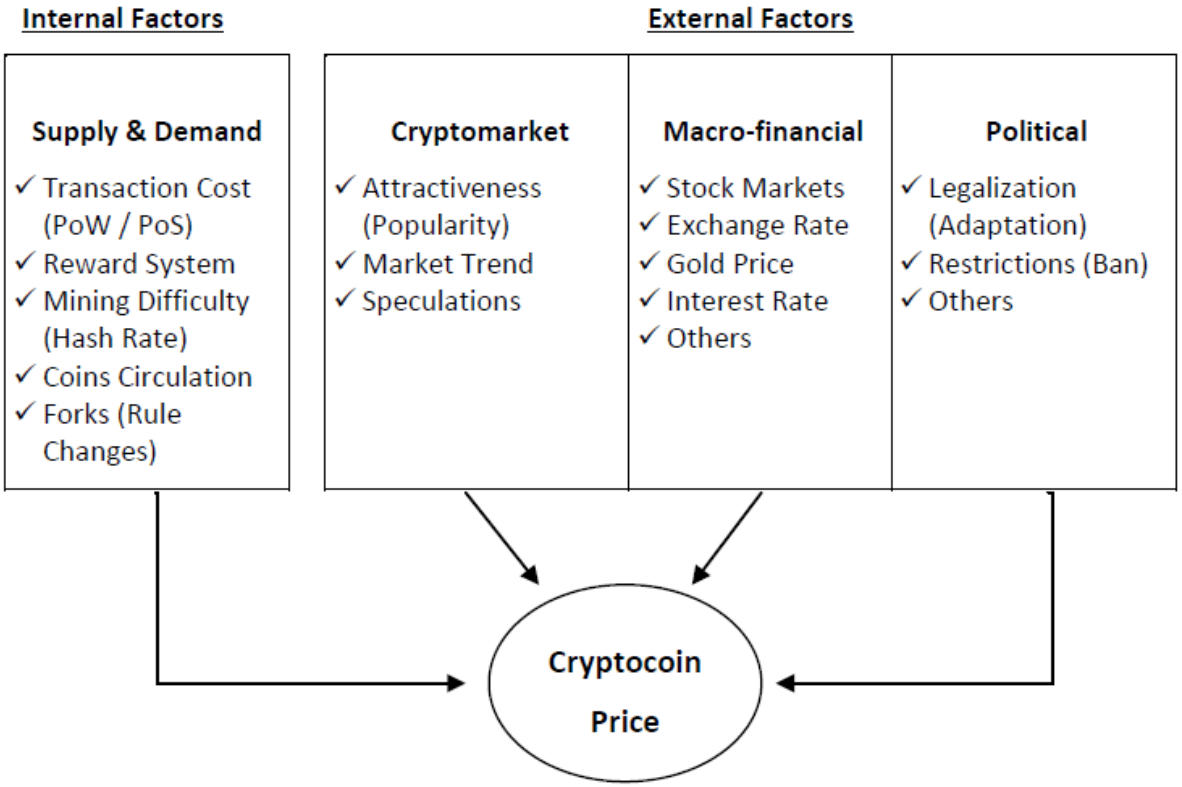


Figure 1. Factors that Influence Cryptocurrency Prices

Source: Yhlas S.,(2018): Factors Influencing Cryptocurrency Prices: Evidence from Bitcoin, Ethereum, Dash, Litcoin, and Monero London School of Commerce

Conclusions

Today's global macroeconomy is increasingly integrated. Therefore, to effectively study macroeconomic outcomes, we must understand the economic linkages between different countries—their currencies, their trade, and their capital flows.

Only then can we begin to understand some of the most important economic phenomena in the world today, such as:

- The fluctuations in currencies
- The causes of crises
- The determinants of global imbalances
- The problems of economic policy making
- The causes and consequences of the gap between rich and poor countries

KEY POINTS

1. Countries have different currencies, and the price at which these currencies trade is known as the exchange rate. In learning what determines this exchange rate and how the exchange rate is linked to the rest of the economy, we confront various questions: Why do some countries have fixed exchange rates and others floating? Why do some go from one to the other, often in response to a crisis? Why do some countries have no currency of their own?

KEY POINTS

2. When countries are financially integrated, it allows them to decouple their level of income from their level of expenditure; the difference between the two is the current account. An important goal is to understand what determines the current account and how the current account is linked to the rest of a nation's economy. Along the way, we learn how a country's current account affects its wealth, how its credits and debts are settled, and how the current account changes.

KEY POINTS

3. Countries differ in the quality of their policy choices and in the quality of the deeper institutional context in which policies are made. In studying international macroeconomic interactions and events, it is essential to understand how policy regimes and institutions affect policy choices and economic outcomes. How does quality of governance affect economic outcomes? Why might some policies, such as a fixed exchange rate, work better in some contexts than others? Do country characteristics affect the costs and benefits of financial globalization?

KEY POINTS

4. One of the key players in global economies are MNE. The pay highrer wages, are more productivi, use higher human capitall and get bigger return from capital.
   They are also major entities organizing global value chains.

Thank You for your attention!