Chapter 13

National Income Accounting

and the Balance of Payments

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Learning Objectives

13.1 Discuss concept of current account balance.

13.2 Use the current account balance to extend national income accounting to open economies.

13.3 Apply national income accounting to the interaction of saving, investment, and net exports.

13.4 Describe balance of payments accounts and explain their relationship to the current account balance.

13.5 Relate the current account to changes in a country’s net foreign wealth.

Preview

- National income accounts
  - measures of national income
  - measures of value of production
  - measures of value of expenditure
- National saving, investment, and the current account
- Balance of payments accounts

The National Income Accounts (1 of 5)

- Records the value of **national income** that results from **production and expenditure.**
  - Producers earn income from buyers who spend money on goods and services.
  - The amount of expenditure by buyers = the amount of income for sellers = the value of production.
  - **National income** is often defined to be the income earned by a nation’s factors of production.

The National Income Accounts (2 of 5)

- **Gross national product** (GNP) is the value of all final goods and services produced by a nation's factors of production in a given time period.

  - What are factors of production? Factors that are used to produce goods and services: workers (labor services), physical capital (such as buildings and equipment), natural resources, and others.

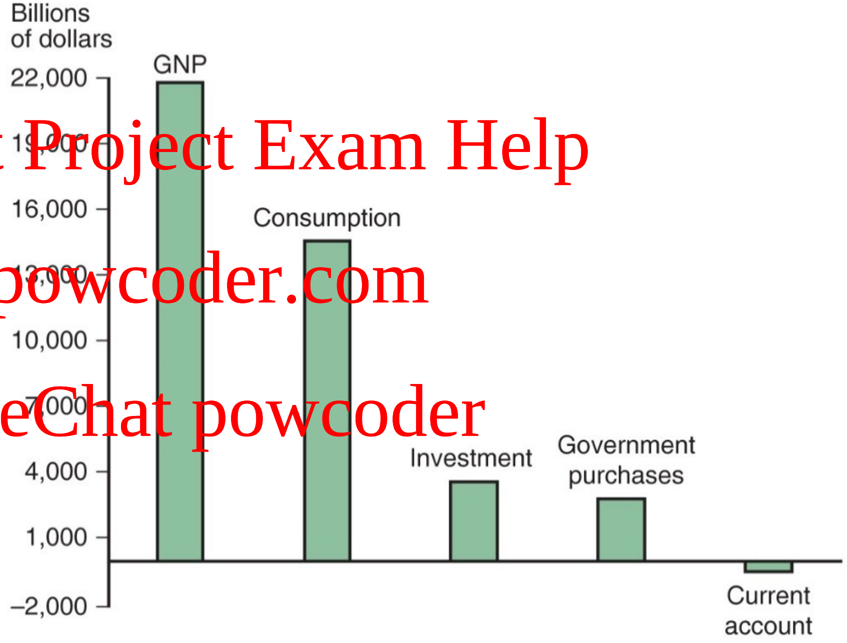
  - The value of final goods and services produced by U.S.-owned factors of production are counted as U.S. GNP.

The National Income Accounts (3 of 5)

- GNP is calculated by adding the value of expenditure on final goods and services produced:

1. Consumption: expenditure by domestic consumers
2. Investment: expenditure by firms on buildings and equipment
3. Government purchases: expenditure by governments on goods and services
4. Current account balance (exports minus imports): net expenditure by foreigners on domestic goods and services

Figure 13.1 U.S. GNP and Its Components



America's gross national product for the first quarter of 2016 can be broken down into the four components shown.

Source: U.S. Department of Commerce, Bureau of Economic Analysis. The figure shows 2016:QI GNP and its components at an annual rate, seasonally adjusted.

The National Income Accounts (4 of 5)

- GNP is one measure of national income, but a more precise measure of national income is GNP adjusted for following:

1. **Depreciation** of physical capital results in a loss of income to capital owners, so the amount of depreciation is subtracted from GNP.

2. **Unilateral transfers** to and from other countries can change national income: payments of expatriate workers sent to their home countries, foreign aid, and pension payments sent to expatriate retirees.

The National Income Accounts (5 of 5)

- Another approximate measure of national income is **gross domestic product** (GDP):

  - Gross domestic product measures the final value of all goods and services that are produced **within a country** in a given time period.

  - GDP=GNP – payment from foreign countries for factors of production
    + payments to foreign countries for factors of production

National Income Accounting for an Open Economy (1 of 2)

- The national income identity for an open economy is

$$Y = C+I+G+EX-IM = C+I+G+CA$$

  - where $C + I + G$ is expenditure by domestic individuals and institutions

  - and CA is net expenditure by foreign individuals and institutions

National Income Accounting for an Open Economy (2 of 2)

$$CA=EX-IM=Y-(C+I+G)$$

- When production > domestic expenditure, exports > imports: current account > 0 and trade balance > 0
  - when a country exports more than it imports, it earns more income from exports than it spends on imports
  - net foreign wealth is increasing
- When production < domestic expenditure, exports < imports: current account < 0 and trade balance < 0
  - when a country exports less than it imports, it earns less income from exports than it spends on imports
  - net foreign wealth is decreasing

Table 13.1 National Income Accounts for Agraria, an Open Economy (Bushels of Wheat)

GNP (total output)	=	Consumption	+	Investment	+	Government purchases	+	Exports	−	Imports
100	=	75[a]	+	25	+	10	+	10	−	20[b]

[a] 55 bushels of wheat + (0.5 bushel per gallon) × (40 gallons of milk).

[b] 0.5 bushel per gallon × 40 gallons of milk.

Saving and the Current Account

- National saving (S) = national income (Y) that is not spent on consumption (C) or government purchases (G).

$$S = Y - C - G$$

- An open economy can save by building up its capital stock or by acquiring foreign wealth.

$$S = I + CA$$

Private and Government Saving

- **Private saving** is the part of disposable income (national income, Y, minus taxes, T) that is saved rather than consumed:

$$S^P = Y - T - C$$

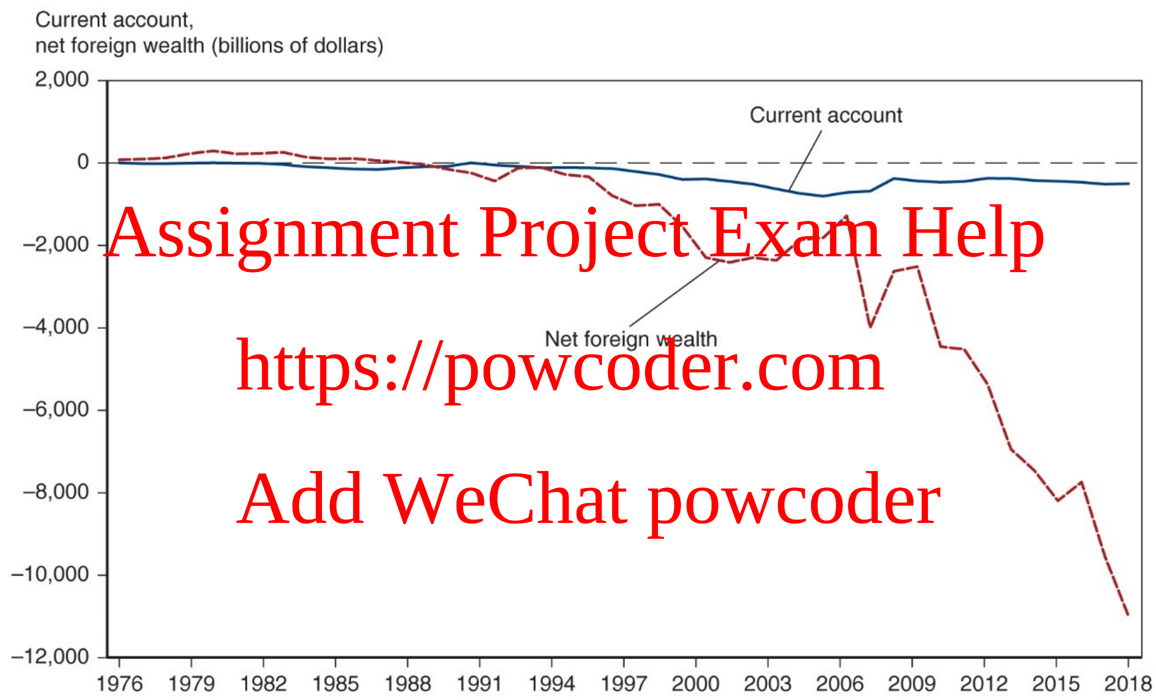
- **Government saving** is net tax revenue, T, minus government purchases, G.

$$S^g = T - G$$

- Private and government saving add up to national saving.

$$S = (Y - T - C) + (T - G) = S^P + S^g$$

Figure 13.2 The U.S. Current Account and Net International Investment Position, 1976–2019



A string of current account deficits starting in the early 1980s reduced America's net foreign wealth until, by the early 21st century, the country had accumulated a substantial net foreign debt.

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

Balance of Payments Accounts (1 of 2)

- A country's balance of payments accounts for its payments to and its receipts from foreigners.
- An international transaction involves two parties, and each transaction enters the account twice: once as a credit (+) and once as a debit (-).

Balance of Payments Accounts (2 of 2)

- The balance of payments accounts are separated into three broad accounts:
  - **current account**: accounts for flows of goods and services (imports and exports).
  - **financial account**: accounts for flows of financial assets (financial capital).
  - **capital account**: flows of special categories of assets (capital): typically non-market, non-produced, or intangible assets such as debt forgiveness, copyrights, and trademarks.

Examples of Balance of Payments Accounting (1 of 4)

- You import a fax machine from Olivetti.
- Olivetti deposits your check in a U.S. bank.

Fax machine purchase **(Current account, U.S. good import)**	–$1000
Sale of bank deposit **(Financial account, U.S. asset sale)**	+$1000

Examples of Balance of Payments Accounting (2 of 4)

- You buy lunch in France and pay by credit card.
- French restaurant receives payment from your credit card company.

Meal purchase **(Current account, U.S. service import)**	**−$200**
Sale of credit card claim **(Financial account, U.S. asset sale)**	+$200

Examples of Balance of Payments Accounting (3 of 4)

- You buy a share of British Petroleum (BP).
- BP deposits the money in a U.S. bank.

Stock purchase **(Financial account, U.S. asset purchase)**	–$95
Bank deposit **(Financial account, U.S. asset sale)**	+$95

Examples of Balance of Payments Accounting (4 of 4)

- U.S. banks forgive a $5,000 debt owed by the government of Bygonia through debt restructuring.
- U.S. banks who hold the debt thereby reduce the debt by crediting Bygonia’s bank accounts.

U.S. banks debt forgiveness **(capital account, U.S. transfer payment)**	**–$5,000**
Reduction in bank’s claims on Bygonia **(financial account, U.S. asset sale)**	+$5,000

How Do the Balance of Payments Accounts Balance?

- Due to the double entry of each transaction, the balance of payments accounts will balance by the following equation:

current account + financial account + capital account =0

Balance of Payments Accounts (1 of 8)

The three broad accounts are more finely divided:

- **Current account**: imports and exports

1. merchandise (goods like DVDs)

2. services (payments for legal services, shipping services, tourist meals, etc.)

3. income receipts (interest and dividend payments, earnings of firms and workers operating in foreign countries)

Balance of Payments Accounts (2 of 8)

- **Current account**: **net unilateral transfers**
  - gifts (transfers) across countries that do not purchase a good or service nor serve as income for goods and services produced

- **Capital account**: records special transfers of assets, but this is a minor account for the United States

Balance of Payments Accounts (3 of 8)

- **Financial account**: the difference between sales of domestic assets to foreigners and purchases of foreign assets by domestic citizens.
- **Financial inflow**
  - Foreigners loan to domestic citizens by buying domestic assets.
  - Domestic assets sold to foreigners are a credit (+) because the domestic economy acquires money during the transaction.
- **Financial outflow**
  - Domestic citizens loan to foreigners by buying foreign assets.
  - Foreign assets purchased by domestic citizens are a debit (-) because the domestic economy gives up money during the transaction.

Balance of Payments Accounts (4 of 8)

- **Financial account** has at least three subcategories:
  1. Official (international) reserve assets
  2. All other assets
  3. Statistical discrepancy

Balance of Payments Accounts (5 of 8)

- **Statistical discrepancy**
  - Data from a transaction may come from different sources that differ in coverage, accuracy, and timing.
  - The balance of payments accounts therefore seldom balance in practice.
  - The statistical discrepancy is the account added to or subtracted from the financial account to make it balance with the current account and capital account.

Balance of Payments Accounts (6 of 8)

- An economy's **central bank** is the institution responsible for managing the supply of money.
  - In the United States, the central bank is the Federal Reserve.

- Central banks often buy or sell international reserves in private asset markets to affect macroeconomic conditions in their economies.

- Official transactions of this type are called **official foreign exchange intervention**.
- One reason why foreign exchange intervention can alter macroeconomic conditions is that it is a way for the central bank to inject money into the economy or withdraw it from circulation

Balance of Payments Accounts (7 of 8)

- **Official (international) reserve assets**: foreign assets held by central banks to cushion against financial instability.
  - Assets include government bonds, currency, gold, and accounts at the International Monetary Fund.
  - Official reserve assets owned by (sold to) foreign central banks are a credit (+) because the domestic central bank can spend more money to cushion against instability.
  - Official reserve assets owned by (purchased by) the domestic central bank are a debit (−) because the domestic central bank can spend less money to cushion against instability.

Balance of Payments Accounts (8 of 8)

- The negative value of the official reserve assets is called the **official settlements balance** or “balance of payments.”
  - It is the sum of the current account, the capital account, the non-reserve portion of the financial account, and the statistical discrepancy.
  - A negative official settlements balance may indicate that a country
    - is depleting its official international reserve assets, or
    - may be incurring large debts to foreign central banks so that the domestic central bank can spend a lot to protect against financial instability.

The Mystery of the Missing Deficit (1 of 1)

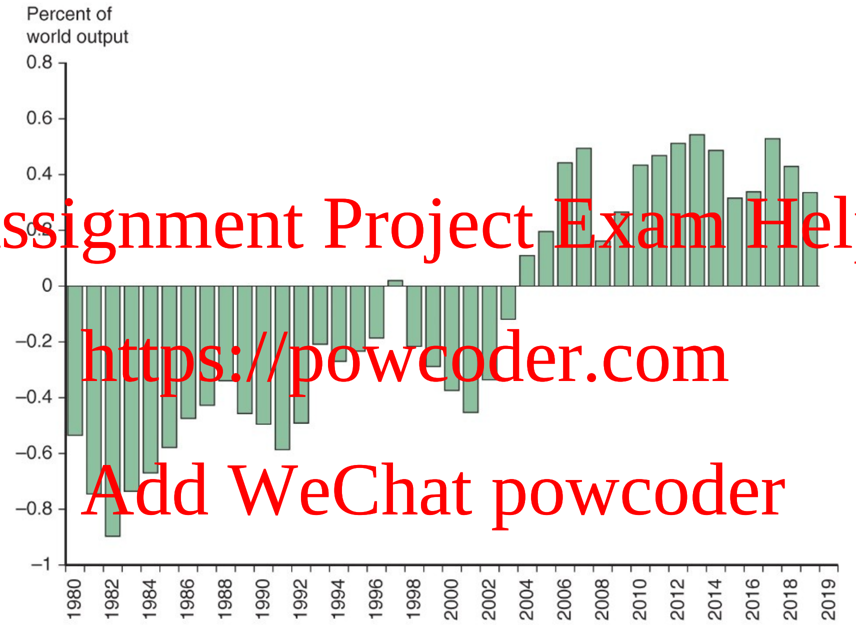
- Because each country's exports are other countries' imports, the world's current account balances must add up to zero. But they don't.

- In all but one year between 1980 and 2003, the sum of global current accounts was negative.

  – Partly due to incomplete reporting of international investment income?

- Since 2004, the measured global current account has been positive.
  – Partly due to growing international trade in services?

The Global Current Account Discrepancy Since 1980



Once big and negative, implying missing current account credits, the world's current account balance has become big and positive, implying missing current account debits.

Source: International Monetary Fund, **World Economic Outlook** database, October 2019.

Table 13.2 U.S. Balance of Payments Accounts for 2019 (Billions of Dollars) (1 of 2)

Current Account		
(1)	Exports and current transfer receipts	**3,805.94**
	Of which:	
	Goods	1,652.44
	Services	875.83
	Income receipts (primary income)	1,135.69
	Current transfer receipts (secondary income)	141.98
(2)	Imports and current transfer payments	4,286.16
	Of which:	
	Goods	2,516.77
	Services	588.36
	Income receipts (primary income)	899.35
	Current transfer receipts (secondary income)	281.69
	Balance on current account [(1) – (2)]	**–480.22**
(3)	**Capital Account**	**–6.24**

Source: U.S. Department of Commerce, Bureau of Economic Analysis, June 196, 2020, release. Totals may differ from sums because of rounding.

Table 13.2 U.S. Balance of Payments Accounts for 2019 (Billions of Dollars) (2 of 2)

Financial Account		
(4)	Net U.S. acquisition of financial assets, excluding financial derivatives Of which:	**440.75**
	Official reserve assets	4.66
	Other assets	436.09
(5)	Net U.S. incurrence of liabilities, excluding financial derivatives Of which:	**797.96**
	Official reserve assets	61.63
	Other assets	736.33
(6)	Financial derivatives, other than reserves, net	
	Net financial flows	**–38.34**
Statistical Discrepancy	**[(4) – (5) – (6)]** [Net financial flows less sum of current and capital accounts]	**–395.54**

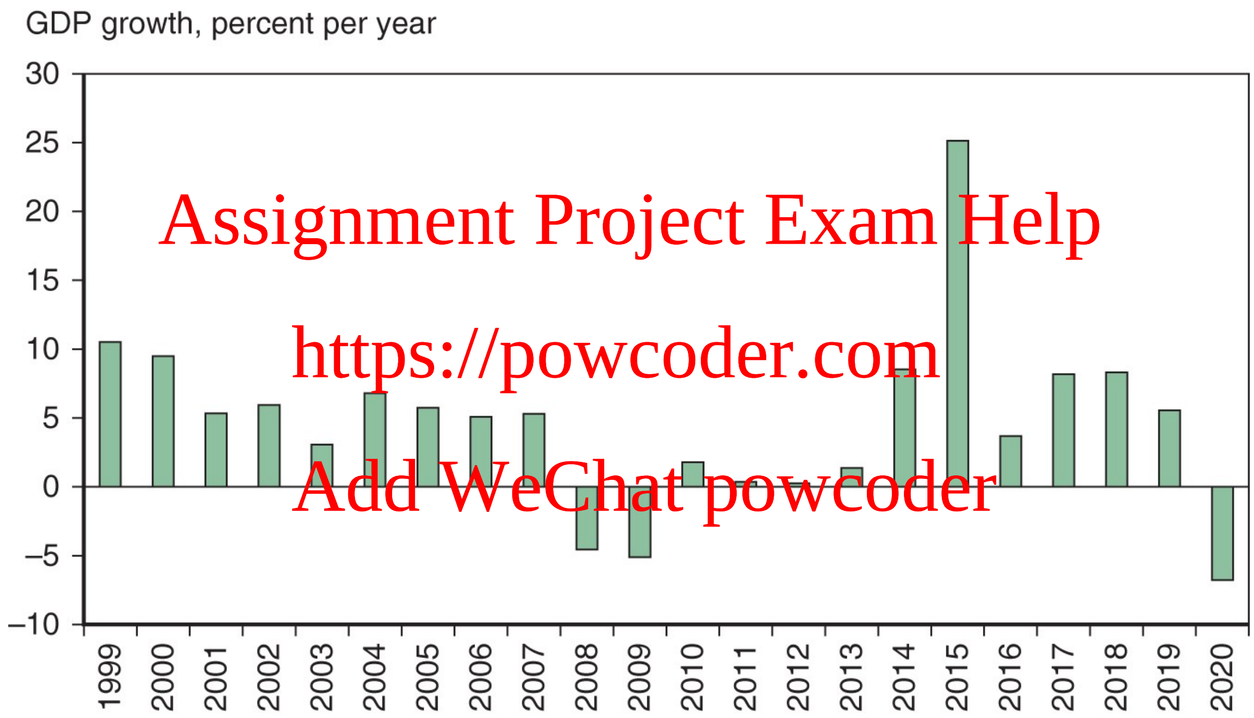
Source: U.S. Department of Commerce, Bureau of Economic Analysis, June 196, 2020, release. Totals may differ from sums because of rounding.

Multinationals' Profit Shifting and Ireland's Volatile GDP

- Ireland's GDP rose by a whopping 26.3% between 2014 and 2015, an outlier compared to growth rates since 1999.
- No massive increase in factors of production such as employment occurred.

- In large part, was an accounting phenomenon reflecting tax avoidance by large multinationals from other countries.
  - Ireland's comparatively low corporate tax rate of 12.5% leads to multinationals allocating their intellectual property (IP) assets to Ireland (and other low-tax havens such as Bermuda).
- GDP has shortcomings as a measure of economic welfare.

Real GDP Growth in Ireland Since 1999



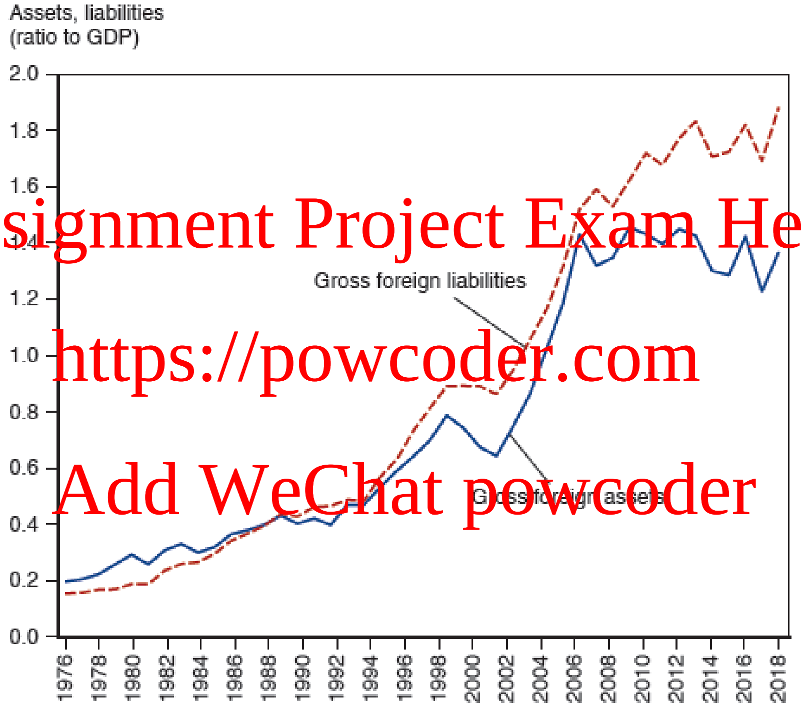
The huge jump in Ireland's 2015 real GDP was mostly an artifact of creative accounting.

Source: International Monetary Fund, **World Economic Outlook** database, April 2019. Data point for 2020 is a projection

U.S. Balance of Payments Accounts (1 of 2)

- The United States has the most negative net foreign wealth in the world, and so is therefore the world's largest debtor nation.
- Its current account deficit in 2012 was $440 billion dollars, so that net foreign wealth continues to decrease.
- The value of foreign assets held by the United States has grown since 1980, but liabilities of the United States (debt held by foreigners) have grown faster.

Figure 13.3 U.S. Gross Foreign Assets and Liabilities, 1976–2019



Since 1976, both the foreign assets and the liabilities of the United States have increased sharply. But liabilities have risen more quickly, leaving the United States with a substantial net foreign debt.

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

U.S. Balance of Payments Accounts (2 of 2)

- About 70% of foreign assets held by the United States are denominated in foreign currencies and almost all of U.S. liabilities (debt) are denominated in dollars.
- Changes in the exchange rate influence value of net foreign wealth (gross foreign assets minus gross foreign liabilities).
  - Appreciation of the value of foreign currencies makes foreign assets held by the United States more valuable, but does not change the dollar value of dollar-denominated debt for the United States

Summary (1 of 3)

1. A country's GNP is roughly equal to the income received by its factors of production.
2. In an open economy, GNP equals the sum of consumption, investment, government purchases, and the current account.
3. GDP is equal to GNP minus net income from foreign countries for factors of production. It measures the value of output produced within a country's borders.

Summary (2 of 3)

4. National saving minus domestic investment equals the current account $\left(\approx \textbf{exports minus imports}\right)$.
5. The current account equals the country's net foreign investment (net outflows of financial assets).
6. The balance of payments accounts records flows of goods and services and flows of financial assets across countries.
   – It has three parts: current account, capital account, and financial account, which balance each other.
   – Transactions of goods and services appear in the current account; transactions of financial assets appear in the financial account.

Summary (3 of 3)

7. Official international reserve assets are a component of the financial account, which records official assets held by central banks.

8. The official settlements balance is the negative value of official international reserve assets, and it shows a central bank's holdings of foreign assets relative to foreign central banks' holdings of domestic assets.

9. The United States is the largest debtor nation, and its foreign debt continues to grow because its current account continues to be negative.