



Survey of International Economics
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Learning Objectives

1. Define GDP and understand how it is used as a measure of economic well-being
2. Recognize the limitations of GDP as a measure of well-being
3. Identify the components of GDP defined in the national income identity
4. Understand why imports are subtracted in the national income identity
5. Learn the recent values for U.S. GDP and the relative shares of its major components
6. Learn the variety of ways exports and imports are classified in the balance of payments accounts

Learning Objectives

7. Understand the distinction between GDP and GNP
8. Learn how individual transactions between a foreign and domestic resident are recorded on the balance of payments accounts
9. Learn the interrelationship between a country's current account balance and its financial account balance and how to interpret current account deficits and surpluses in terms of the associated financial flows
10. Learn the recent values for U.S. balance of payments statistics and the ways transactions are classified on both the current account and the financial accounts

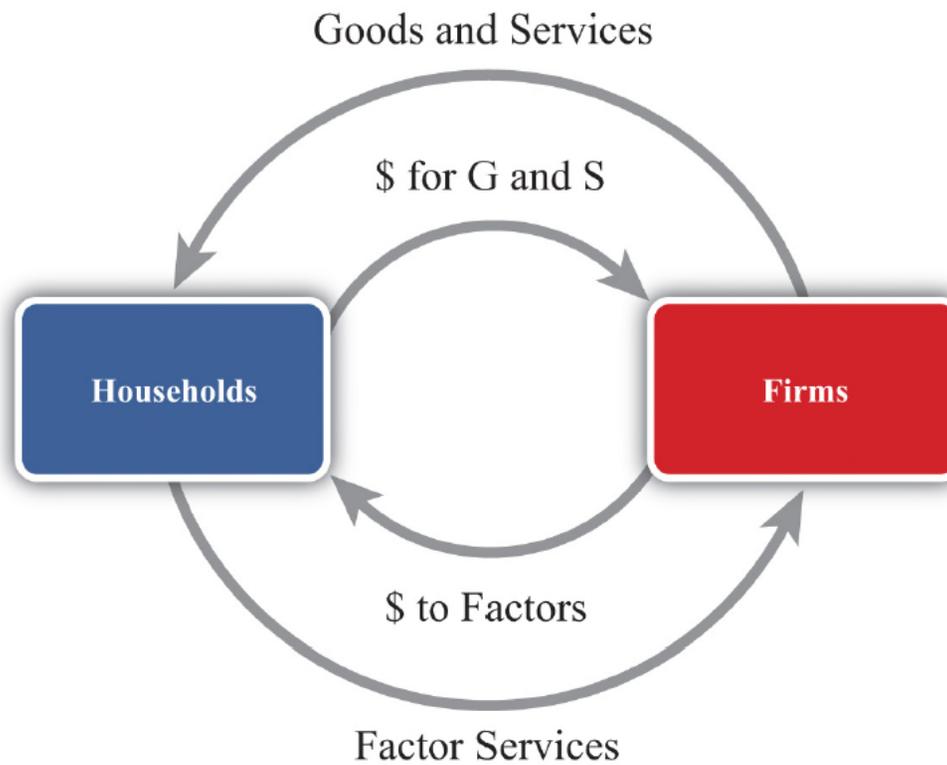
Learning Objectives

11. Learn the interrelationship between a country's government budget balance (deficit) and its current account balance (deficit)
12. Interpret the interrelationships of trade balances and budget balances in terms of the sources and uses of funds in the financial system
13. Learn how to define and interpret a country's international investment position
14. Understand how the international investment position is updated from year to year

National Income and Product Accounts

- National income represents the total amount of money that factors of production earn during the course of a year
- National product represents the market value of all goods and services produced by firms in a country
- According to the circular flow of money diagram, national product should always equal national income

Circular Flow of Money Diagram



The Circular Flow of Money

- The circular flow of money represents a simple economy consisting of households and firms
- National product measures the monetary flow from households to firms
- National income measures the monetary flow from firms to households

Gross Domestic Product

- Defined as the value of all final goods and services produced within the borders of a country during some period of time, usually a year
- Measured in terms of the monetary (or dollar) value at which the items exchange in the market
- Measures only final goods and services as opposed to intermediate goods
- Reflects the size of an economy
 - Rapid GDP growth is a sign of growing prosperity and economic strength
 - Falling GDP indicates a recession, a significant fall represents depression

Weaknesses of GDP as a Measure of Economic Well-Being

- GDP ignores the value of goods and services left over from previous years
- GDP, by itself, fails to recognize the size of the population that it must support
- GDP gives no account of how the goods and services produced by the economy are distributed among members of the economy
- GDP growth may overstate the growth of the standard of living

Weaknesses of GDP as a Measure of Economic Well-Being

- GDP does not account for negative production and consumption externalities
- GDP growth may not be indicative of a healthy economy in some circumstances
- GDP ignores the value of consumption in the economy which is more important for economic well-being

National Income Identity

- GDP is the sum of:
 - Personal consumption expenditures (C)
 - Private investment expenditures (I)
 - Government consumption expenditures (G)
 - Expenditures on exports (EX) minus expenditures on imports (IM)
- $GDP = C + I + G + EX - IM$

Components of GDP

- Personal consumption expenditure includes
 - Domestic as well as foreign goods and services purchased by domestic residents
 - Durable and nondurable goods
- Private domestic investment
 - Includes expenditures by businesses on fixed investment and changes in business inventories
 - Includes fixed investment, both residential and nonresidential, expenditures on commodities that will be used in a production process for more than one year
 - Does not include financial investments made by individuals or businesses

Components of GDP

- Government expenditures
 - Includes purchases of goods, services, and structures from domestic firms and from the rest of the world by federal, state, and local government
 - Does not include transfer payments
- Exports consist of goods and services that are sold to non-residents
- Imports include goods and services purchased from the rest of the world

The Role of Imports in the National Income Identity

- Imports are subtracted in the national income identity because they appear as hidden elements in consumption, investment, government, and exports
- If imports are not subtracted, the GDP of a country would be overstated
- $GDP = (C_D + C_F) + (I_D + I_F) + (G_D + G_F) + (EX_D + EX_F) - IM$
- $IM = C_F + I_F + G_F + EX_F$
- $GDP = C_D + I_D + G_D + EX_D$

U.S. National Income Statistics (2007–2008)

		2007	2008	2008 (Percentage of GDP)
GDP	Gross domestic product	13,807.5	14,280.7	100.0
C	Personal consumption expenditures	9,710.2	10,058.5	70.4
	Durable goods	1,082.8	1,022.8	7.2
	Nondurable goods	2,833.0	2,966.9	20.8
	Services	5,794.4	6,068.9	42.5
I	Gross private domestic investment	2,134.0	2,004.1	14.0
	Nonresidential	1,503.8	1,556.2	10.9
	Structures	480.3	556.3	3.9
	Equipment and software	1,023.5	999.9	7.0
	Residential	630.2	487.8	3.4
	Change in business inventories	-3.6	-39.9	-0.0
G	Government consumption expenditures and gross investment	2,674.8	2,883.2	20.2
	Federal	979.3	1,071.2	7.5
	National defense	662.2	734.3	5.1
	Nondefense	317.1	336.9	2.4
	State and local	1,695.5	1,812.1	12.6
EX	Exports	1,662.4	1,867.8	13.1
	Goods	1,149.2	1,289.6	9.0
	Services	513.2	578.2	4.0
IM	Imports	2,370.2	2,533.0	17.7
	Goods	1,985.2	2,117.0	14.8
	Services	385.1	415.9	2.9

U.S. National Income Statistics (2007–2008)

- The U.S. National Income Statistics (2007-2008) suggests that:
 - U.S. nominal GDP in 2008, measured in 2008 prices was just over \$14 trillion
 - Between 2007 and 2008, the U.S. added over \$600 billion to GDP
 - Consumption expenditures were the largest component of U.S. GDP, making up about 70 percent of output in 2008
 - Gross private domestic investment declined in 2008 reflecting the slide into the economic recession
 - The U.S. investment level as a percentage of GDP was lower than in many countries in Europe, especially in China and other Asian economies

U.S. National Income Statistics (2007–2008)

- The U.S. National Income Statistics (2007-2008) suggests that:
 - Government expenditures on goods and services in the U.S. amounted to 20 percent of GDP in 2008
 - The state and local spending was almost twice the level of federal spending
 - Most of the federal spending was on defense related goods and services
 - Exports in the U.S. accounted for 13 percent of GDP in 2008
 - Imports into the U.S. at \$2.5 trillion, amounted to almost 18 percent of GDP
 - In terms of the dollar value of trade, the U.S. is the largest importer and exporter of goods and services in the world

Balance of Payments Accounts

- It is a record of all international transactions that are undertaken between residents of one country and residents of other countries during the year
- Consists of the current account and the financial account
- Current account balance is defined as:

$$CA = EX^{G,S,IPR,UT} - IM^{G,S,IPR,UT}$$

- $CA > 0$ implies exports of goods and services exceed imports and the country has a current account surplus
- $CA < 0$ implies imports exceed exports and the country has a current account deficit

Components of the BoP

- The superscripts in the current account balance identity represent
 - Exports and imports of goods (G)
 - Exports and imports of services (S)
 - Income payments and receipts (IPR)
 - Unilateral transfers (UT)

Components of the BoP

- Merchandise trade balance
 - Defined as $GB = EXG - IMG$
 - $GB > 0$ implies the country would have a (merchandise) trade surplus
 - $GB < 0$ implies the country has a trade deficit
- Services balance
 - Defined as $SB = EXS - IMS$
 - $SB > 0$ implies the country has a service surplus
 - $SB < 0$ implies the country has a service deficit

Components of the BoP

- Goods and services balance
 - Defined as $GSB = EX^{G\&S} - IM^{G\&S}$
 - $GSB > 0$ implies the country would have a goods and services (G&S) surplus
 - $GSB < 0$ implies the country has a G&S deficit

GDP versus GNP

- GDP represents the value of all goods and services produced within the borders of the country
- GNP represents the value of all goods and services produced by domestic factors of production
- GDP includes only exports and imports of goods and services, implying that GDP excludes income payments and receipts and unilateral transfers
- $GDP = C + I + G + EX^{G\&S} - IM^{G\&S}$
- $GNP = C + I + G + EX^{G,S,IPR,UT} - IM^{G,S,IPR,UT}$

Financial Account Balance

- Defined as $KA = EX^A - IM^A$, where EX^A and IM^A refer to the export and import of assets, respectively
- $KA > 0$ implies the country is exporting more assets than it is importing and it has a financial account surplus
- $KA < 0$ implies the country has a financial account deficit
- Assets are two types:
 - IOUs (I owe you) which are contractual agreements in the form of bonds, savings accounts, treasury bills
 - Ownership shares in a business or property without any repayment obligations

Recording Transactions on the Balance of Payments

- The balance of payments accounts can be presented in ledger form with two columns, one recording debit entries and the other credit entries
- Every transaction must result in a credit and debit entry of equal value
- Any time an item (good, service, or asset) is exported from a country, the value of that item is recorded as a credit entry on the balance of payments
- Any time an item is imported into a country, the value of that item is recorded as a debit entry on the balance of payments

Recording Transactions under Current Account & Financial Account

- When an item in a transaction is a good or a service, the value of that item is recorded in the current account
- When an item in a transaction is an asset, the value of that item is recorded in the financial account

A Simple Exchange Story

- Consider two individuals, one a resident of the United States, the other a resident of Japan
- Each individual wishes to purchase something in the other country
- The summary statistics of the exchange story suggests that:
 - Current account balance + Financial account balance = 0
 - Anytime a country has a current account deficit (surplus), it must have a financial account surplus (deficit) of equal value
 - Anytime a country has balanced trade (a balanced current account), then it must have balance on its financial account

Important Lessons from the Exchange Story

- The relationship between the current account and the financial account is not an economic theory, it is an accounting identity
- The balance on current account plus the balance on the financial account rarely sums to zero because of the presence of measurement errors
- Thus, CA balance + Financial account balance + Statistical discrepancy = 0
- Whenever there is unequal exchange on the trade account, there must be equally opposite unequal exchange on the financial account
- In the aggregate, imbalances on a current account, a trade account or a financial account do not represent unequal exchanges between countries

The U.S. BoP Statistics (2008)

Line Number	Category	Value (credits [+], debits [-])
Current Account		
1	Exports of goods, services and income receipts	+2,591,233
3	Goods	+1,276,994
4	Services	+549,602
13	Income receipts on U.S. assets abroad	+761,593
14	Direct investment receipts	+370,747
15	Other private receipts	+385,940
16	U.S. government receipts	+4,906
18	Imports of goods, services, and income	-3,168,938
20	Goods	-2,117,245
21	Services	-405,287
30	Income payments on foreign assets in the United States	-636,043
31	Direct investment payments	-120,862
32	Other private payments	-349,871
33	U.S. government payments	-165,310
35	Unilateral transfers, net	-128,363
Capital Account		
39	Capital account transactions, net	+953
Financial Account		
40	U.S. assets abroad (increase/financial outflow [-])	-106
41	U.S. official reserve assets	-4,848
46	U.S. government assets	-529,615
50	U.S. private assets	+534,357
51	Direct investment	-332,012
52	Foreign securities	+60,761
53	U.S. claims reported by U.S. nonbanks	+372,229
54	U.S. claims reported by U.S. banks	+433,379
55	Foreign assets in the United States (increase/financial inflow [+])	+534,071
56	Foreign official assets in the United States	+487,021
63	Other foreign assets in the United States, net	+47,050
64	Direct investment	+319,737
65	U.S. Treasury securities	+196,619
66	U.S. securities other than T-bills	-126,737
67	U.S. currency	+29,187
68	U.S. liabilities reported by U.S. nonbanks	-45,167
69	U.S. liabilities reported by U.S. banks	-326,589
71	Statistical discrepancy (sum of above with sign reversed)	+200,055

Balances on the U.S. Balance of Payments, 2008 (Millions of Dollars Seasonally Adjusted)

Lines 1 + 18 + 35	Current Account Balance	-706,068
Lines 3 + 20	Trade (goods) balance	-840,251
Lines 4 + 21	Services balance	+144,315
Lines 2 + 19	Goods and services balance	-695,936
Lines 12 + 29	Investment income balance	+118,231
Lines 40 + 55	Financial account balance	+533,965
Line 71	Statistical discrepancy	+200,055

The U.S. BoP Statistics (2008)

- The BoP “balances” for 2008 reveal that the U.S. recorded:
 - A current account deficit of \$706 billion
 - A trade deficit of over \$840 billion
 - A goods and services trade deficit of over \$695 billion
 - A financial account surplus of over \$533 billion
 - The largest statistical discrepancy of over 200 billion
 - The primary source of statistical discrepancy was on the capital account side

The Twin-Deficit Identity

- The twin-deficit identity is a term in reference to a country's government budget deficit and a simultaneous current account deficit
- Circular Flow: Version 1
 - The simplest version of a circular flow diagram considers an economy consisting of two agents: households and firms
 - Firms produce goods and services using labor as an input
 - There are only households buying goods, thus all GNP consists of consumption
 - The money that flows to firms from sales of consumption goods is given to the workers in exchange for their labor services

Circular Flow of Money: Version 1

- Circular flow: version 1
 - Disposable income is all the money households have to spend, which in this case is equal to the national income (NI)
 - GNP rather than GDP is used to measure national income

Circular Flow of Money: Version 2

- In the circular flow: version 2
 - Financial institutions are introduced in the model
 - The presence of financial institutions allows some money to be diverted from the consumption flow
 - Part of the revenue earned by firms is retained in the form of profit and excess earnings
 - Retained earnings may be used directly to purchase new capital equipment, or saved by depositing in a financial institution

Circular Flow of Money: Version 2

- The circular income flow between firms, households and financial institutions suggests the following relationships:
 - The sum of the marginal propensity to consume and the marginal propensity to save is one
 - In the absence of the government sector and international trade, $GNP = C + I$
 - The sum of household and business saving equals investment or the aggregate private saving
 - Private savings equals investment

Circular Flow of Money: Version 3

- In version 3, the government sector is included
 - Taxes are represented as a flow of money directly from firms
 - Tax revenues (T) are shown to be spent in two separate ways
 - Transfer payments (TR) injected into the household income stream
 - Government spending (G) for the purchase of goods and services produced by firms

Circular Flow of Money: Version 3 (continued...)

- The flow of funds in the government sector is represented as: $S_G = T - TR - G$
- Negative (positive) S_G implies government budget deficit (surplus)
- The national income identity in this version will be: $GNP = C + I + G$
- The financial sector identity becomes: $S_{HH} + S_B + S_G = I$

Circular Flow of Money: Version 4

- In this version trade flows with the rest of the world (RoW) are included
- Trade with the RoW represented in the circular flow diagram by a flow into firms consists of:
 - Export of goods
 - Export of services
 - Income and transfers
 - Expenditures on exports (EX)
- Imports of goods, services, income and transfers, imports (IM) are subtracted away from firms

Circular Flow of Money: Version 4

- The national income identity becomes: $GNP = C + I + G + EX - IM$
- $EX - IM$ is the balance on the current account
- When $EX - IM > (<) 0$, the country would have a current account (CA) surplus (deficit)
- Since foreign saving offsets the CA deficit, a deficit on CA will result in financial account surplus

The Twin-Deficit Identity

- Derived by accounting for the monetary flows in and out of the financial sector in version four of the circular flow
- $S_{HH} + S_B + S_G + S_F = I$
- Household plus business saving equals private saving: $S_p + S_G + S_F = I$
- Given: $S_G = T - TR - G$; $S_F = IM - EX$; and $S_p = S_{HH} + S_B$, so the twin-deficit identity is: $SP + T - TR - G + IM - EX = I$ or $(SP - I) + (IM - EX) = (G + TR - T)$
- The identity shows that the difference between the government budget deficit and the trade deficit must equal the difference between private saving and investment

The Twin-Deficit Figures in the United States

	$(S_p - I) + \text{Current Account Deficit} = \text{Govt. Budget Deficit}$			
Year	Private Saving* (%)	Investment (%)	Current Account Deficit (%)	Govt. Budget Deficit (%)
2008	13.5	14.0	4.7	4.2
2007	11.7	15.4	5.3	1.6
2006	12.1	16.7	6.1	1.5
2005	12.9	16.5	6.1	2.5
2004	14.0	16.1	5.5	3.4
2003	14.0	15.2	4.8	3.6
2002	13.4	15.1	4.4	2.7
2001	11.6	15.9	3.8	-0.5
2000	11.0	17.7	4.2	-2.4
1999	12.6	17.5	3.2	-1.7
1998	13.8	17.3	2.4	-1.0
1997	15.2	16.7	1.7	0.2

* Private saving is calculated as a residual.

The Twin-Deficit Figures in China

	$(S_p - I) + \text{Current Account Deficit} = \text{Govt. Budget Deficit}$			
Year	Private Saving* (%)	Investment (%)	Current Account Deficit (%)	Govt. Budget Deficit (%)
2007	53.0	42.3	-11.3	-0.6
2006	52.8	42.6	-9.4	0.8
2005	51.1	42.7	-7.2	1.2
2004	48.1	43.2	-3.6	1.3
2003	46.0	41.0	-2.8	2.2
2002	43.0	37.9	-2.4	2.6
2001	40.1	36.5	-1.3	2.3
2000	39.5	35.3	-1.7	2.5
1999	39.6	36.2	-1.4	1.9
1998	40.2	36.2	-2.9	1.1
1997	40.6	36.7	-3.1	0.7

* Private saving is calculated as a residual.

International Investment Position

- A country's international investment position (IIP) is like a balance sheet in that it shows the total holdings of foreign assets by domestic residents and the total holdings of domestic assets by foreign residents at a point in time
- The financial account balance consists of flow variables, while the international asset position of a country consists of stock variables
- If the country's domestic liabilities (assets) to foreigners exceed domestic assets (liability), then the country would be called a debtor (creditor) country
- Asset holdings may consist of either debt obligations or equity claims

Debt Contract

- The debt contract establishes an obligation for the borrower to repay principle and interest in the future
- Risks associated with debt obligations:
 - The risk of possible default
 - Unexpected inflation and currency fluctuations

Equity Purchase

- Equity claims represent ownership shares in potentially productive assets
- Risks associated with equity purchases:
 - Return on equity purchases which are direct investment in a business will depend on how well the business performs
 - Equity purchases can suffer from exchange rate risk as well

The U.S. International Investment Position

- The United States is the largest debtor nation in the world
- International investment position was in deficit in the U.S. in 2008 and the monetary value of that deficit (\$3.5 trillion) was larger than all other countries across the world
- Foreign assets owned by U.S. residents amounted to \$19.888 trillion in 2008, while foreign-owned assets in the United States amounted to \$23.357 trillion
- In 2008, the U.S. debt position stood at 24.6 percent of GDP, slightly down from 24.9 percent of GDP in 2002