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Chapter 2
National Income and the Balance of Payments Accounts

1. National Income and Product Accounts

- Define GDP and understand how it is used as a measure of economic well-being.
- Recognize the limitations of GDP as a measure of well-being.

Section Outline

- National income represents the total amount of money that factors of production earn during the course of a year.
- National product, also called national output, represents the market value of all goods and services produced by firms in a country.
- The value of aggregate output (the national product) should always equal the value of aggregate income (national income) according to the circular flow of money diagram.
- The circular flow diagram represents a simple economy consisting of households and firms.
- Firms produce all the final goods and services in the economy using factor services (labor and capital) supplied by the households.
- The households purchase the goods and services supplied by the firms.
- When firms sell goods and services, the households give the money to the firms in exchange. National product measures this monetary flow.
- When the households supply labor and capital to firms, the firms give money to the households in exchange. National income measures this monetary flow.
- 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.
    - It is a measure of the size of an economy.
    - Differs from GNP which measures all production achieved by domestic factors of production regardless of where that production takes place.
    - 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

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- GDP measures only the amount of goods and services produced during the year and ignore 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. Therefore, per capita GDP is used to make cross country comparison.
- 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. Therefore real GDP is typically used to measure the growth rate of GDP.
- GDP does not account for negative production and consumption externalities like pollution.
- GDP growth may not be indicative of a healthy economy in some circumstances.
- GDP measures the value of production in the economy rather than consumption, which is more important for economic well-being.

Key Takeaways

- GDP is 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.
- The following are several important weaknesses of GDP as a measure of economic well-being:
- GDP measures income not wealth and wealth is a better measure of economic well-being.
- GDP does not account for income distribution effects that may be important to economic well-being.
- GDP measures "bads" like pollution as well as "goods."
- GDP measures production not consumption and consumption is more important to economic well-being.

Exercises

1. **Jeopardy Questions:** As in the popular television game show, you are given an answer to a question and you must respond with the question. For example, if the answer is "A tax on imports," then the correct question is "What is a tariff?"
    a. The term for the measure of national output occurring within the nation's borders.
    Answer: Gross domestic product (GDP)
    b. The term for the measure of national output that includes all production by domestic factors regardless of location.
    Answer: Gross national product (GNP)
    c. Of income or wealth, this term better describes the gross domestic product (GDP).
    Answer: Income

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d. Of income or wealth, this term better describes the gross national product (GNP).
   Answer: Income
e. The term used to describe the measure of GDP that takes account of price level changes or inflationary effects over time.
   Answer: Real GDP
f. The term used to describe the measure of GDP that allows better income comparisons between countries that have different population sizes.
   Answer: GDP per capita

2. Many people argue that the gross domestic product (GDP) is an inadequate measure of a nation's economic well-being. **List** five reasons why this may be so.
   Answer:
   a. Does not include income per capita or per household
   b. Does not describe distribution of income
   c. Considers only income, not national wealth
   d. Measures output but not domestic spending (C + I + G)
   e. Does not consider negative social effects of things like pollution
   f. Includes reconstruction after natural disasters
   g. Does not consider negative effects of some production, like military
   h. "Nominal" GDP value does not consider inflation effects
   i. Does not include many things that affect quality of life
   j. Does not include non-market activity – housework, barter, etc
   k. Et.al…….

3. GDP is used widely as an indicator of the success and economic well-being of the people of a nation. However, for many reasons it is not the perfect indicator. Briefly comment on the following statements related to this issue:
   a. Domestic spending is a better indicator of standard of living than GDP.
      Answer: DS = C + I + G. It includes all G&S purchased by domestic residents including imported goods. Thus, it is a better measure of what is "consumed" by domestics during than year and consumption is a better indicator of standard of living. Exports are not counted in DS, which since these are consumed by foreigners, do not contribute directly to domestic consumption.
   b. National wealth is a better indicator of standard of living than GDP.
      Answer: GDP is a measure of income, which means that it only counts what is produced during the current year. National wealth measures total G&S that currently exists, whether is was produced during the past year or not. Since well-being is more related to what we have that continues to provide value (usefulness) to us, wealth is a better measure of standard of living.

Additional Exercises

1. Refer to the data on U.S. GDP and GNP published by the Bureau of Economic Analysis under the U.S. Department of Commerce

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(http://www.bea.gov/national/index.htm#gdp) and identify some of the accounting heads common to both these measures. Also mention some of the accounting entries that are present in the GNP but absent in the GDP?

2. Discuss the positive as well as the negative aspects of using per capital GDP as an indicator of economic well-being of a nation.

2. National Income or Product Identity

- Identify the components of GDP defined in the national income identity.
- Understand why imports are subtracted in the national income identity.

Section Outline

- GDP is the sum of personal consumption expenditures (C), private investment expenditures (I), government consumption expenditures (G), and expenditures on exports (EX) minus expenditures on imports (IM): GDP = C + I + G + EX – IM.
- Personal consumption expenditure
  - Includes domestic as well as foreign goods and services purchased by domestic residents.
  - Consists of durable and nondurable goods.
- Private domestic investment
  - Includes expenditures by businesses on fixed investment and any change in business inventories.
  - Fixed investment, both residential and nonresidential, consists of 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.
- Government expenditures
  - Include purchases of goods, services, and structures from domestic firms and from the rest of the world by federal, state, and local government.
  - Transfer payments are not included as a part of government expenditures.
- 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 in the identity as hidden elements in consumption, investment, government, and exports.
  - Consumption, investment, government, and export expenditures measure domestic expenditures on both domestically produced and foreign-produced goods.
  - This suggests: GDP = $(C_D + C_F) + (I_D + I_F) + (G_D + G_F) + (EX_D + EX_F) - IM$

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- All imported goods are used in consumption, investment, or government or are ultimately exported: $IM = C_F + I_F + G_F + EX_F$.
- Thus $GDP = C_D + I_D + G_D + EX_D$.
- If imports are not subtracted, the GDP of a country would be overstated.

Key Takeaways

- GDP can be decomposed into consumption expenditures, investment expenditures, government expenditures, exports of goods and services minus imports of goods and services.
- Investment in GDP identity measures physical investment, not financial investment.
- Government includes all levels of government and only expenditures on goods and services. Transfer payments are not included in the government term in the national income identity.
- Imports are subtracted in the national income identity because imported items are already measured as a part of consumption, investment and government expenditures, and as a component of exports. This means that imports have no direct impact on the level of GDP. The national income identity does not imply that rising imports cause falling GDP.

Exercises

1. **Jeopardy Questions:** As in the popular television game show, you are given an answer to a question and you must respond with the question. For example, if the answer is "A tax on imports," then the correct question is "What is a tariff?"
    a. A measure of the value of all capital equipment and services purchased during a year.
    Answer: Investment
    b. The term for the goods and services sold to residents of foreign countries.
    Answer: Exports
    c. The component of GDP that includes household purchases of durable goods, nondurable goods, and services.
    Answer: Consumption
    d. The component of GDP that includes purchases by businesses for physical capital equipment used in the production process.
    Answer: Investment
    e. The government spending in the GDP identity does not count these types of government expenditures.
    Answer: Transfer payments
    f. Of true or false, imported goods and services are counted once in the C, I, G, or EX terms of the GDP identity.
    Answer: True

2. The National Income Identity says that gross domestic product is given by consumption expenditures plus investment expenditures, plus government

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expenditures, plus exports, minus imports. In short, this is written as $GDP = C + I + G + EX - IM$.

Consider each of the following expenditures below. Indicate in which category (ies)—*C*, *I*, *G*, *EX*, or *IM*—the item would be counted for the United States.

Product	Category
a. German resident purchase of a U.S.-made tennis racket	
b. U.S. firm purchase of a U.S.-made office copy machine	
c. Salaries to U.S. troops in Iraq	
d. School spending by county government	
e. U.S. household purchase of imported clothing	

Answer:

Product	Category
a. German resident purchase of a U.S.-made tennis racket	EX
b. U.S. firm purchase of a U.S.-made office copy machine	I
c. Salaries to U.S. troops in Iraq	G
d. School spending by county government	G
e. U.S. household purchase of imported clothing	C and IM

3. What is the gross domestic product in a country whose goods and services balance is a $300 billion deficit, consumption is $900 billion, investment is $300 billion, and government spending is $500 billion?
   Answer: GDP = C + I + G + (EX – IM) = 900 + 300 + 500 - 300 = $1,400 billion or $1.4 trillion.

4. Below is the economic data for the fictional country of Sandia. Write out the national income identity. Verify whether Sandia's data satisfies the identity.

Sandia Economic Data (in Billions of Dollars)

Gross Domestic Product	400

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Imports of Goods and Services	140
Investment Spending	20
Private Saving	30
Exports of Goods and Services	100
Government Transfers	40
Government Tax Revenues	140
Government Spending	140
Consumption Spending	280

Answer: 400 = 280 + 20 + 140 + 100 – 140 = 400. The identity is satisfied.

Additional Exercise

1. Why are imports subtracted from the national income identity?
   Answer: Imports are subtracted in the national income identity because imported items are already measured as a part of consumption, investment and government expenditures, and as a component of exports. This means that imports have no direct impact on the level of GDP. The national income identity does not imply that rising imports cause falling GDP.

2. Using the statistics (in billions of U.S. dollars)) for the accounting year 2008-2009 provided below, calculate the GDP of Country X.
   Consumption expenditure on domestically produced goods: 120
   Gross investment expenditure: 150
   Government expenditure on domestic goods: 140
   Investment expenditure on foreign goods: 60
   Answer: GDP = 120 + (150 -60) + 140 = $350 billion.

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

- Learn the recent values for U.S. GDP and the relative shares of its major components.

Section Outline

- Refer to Table 2.1 to study U.S. statistics for the national income and product accounts for the years 2007 and 2008.
- The table 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 are 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.

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- Investment represents how much the country is adding to the capital stock. Thus investment spending is viewed as an indicator of future GDP growth.
- The U.S. investment level as a percentage of GDP is lower than in many countries in Europe, especially in China and other Asian economies.
- Government expenditures on goods and services in the United States amounted to 20 percent of GDP in 2008.
- The state and local spending is almost twice the level of federal spending.
- Most of the federal spending is on defense related goods and services.
- Exports in the United States accounted for 13 percent of GDP in 2008.
- Imports into the United States are at $2.5 trillion, amounting to almost 18 percent of GDP.
- In terms of the dollar value of trade, the United States is the largest importer and exporter of goods and services in the world.

Key Takeaways

- U.S. GDP stands at just over $14 trillion per year in 2008.
- U.S. consumption is about 70 percent of GDP; investment, 14 percent; government expenditures, 20 percent; exports, 13 percent; and imports, about 18 percent.

Exercise

1. **Jeopardy Questions:** As in the popular television game show, you are given an answer to a question and you must respond with the question. For example, if the answer is "a tax on imports," then the correct question is "What is a tariff?"
    a. The approximate share of U.S. consumption as a share of U.S. GDP in 2008.
    Answer: 70 percent
    b. The approximate share of U.S. investment as a share of U.S. GDP in 2008.
    Answer: 14 percent
    c. The approximate share of U.S. government spending as a share of U.S. GDP in 2008.
    Answer: 20 percent
    d. The approximate share of U.S. exports of goods and services as a share of U.S. GDP in 2008.
    Answer: 13 percent
    e. The approximate share of U.S. imports of goods and services as a share of U.S. GDP in 2008.
    Answer: 18 percent
    f. This main category represents the largest share of GDP spending in the U.S. economy.
    Answer: Consumption, or Personal Consumption Expenditures

Additional Exercises

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1. Refer to the GDP estimate for the first quarter 2010 released by the Bureau of Economic Analysis (BEA) (http://www.bea.gov/newsreleases/national/gdp/2010/pdf/gdp1q10_3rd.pdf). Identify some of the sectors which had a positive impact on real GDP and real GNP during the first quarter.

4. Balance of Payments Accounts: Definitions

- Learn the variety of ways exports and imports are classified in the balance of payments accounts.
- Understand the distinction between GDP and GNP.

Section Outline

- The balance of payments (BoP) accounts is a record of all international transactions that are undertaken between residents of one country and residents of other countries during the year.
- The BoP accounts are divided into current account and the financial account.
- The current account is often further subdivided into the merchandise trade account and the service account.
- **Current Account**
  - The current account (CA) balance is defined as $CA = EX^{G,S,IPR,UT} - IM^{G,S,IPR,UT}$.
  - The G,S,IPR,UT superscript is meant to include exports and imports of goods (G), services (S), income payments and receipts (IPR), and unilateral transfers (UT).
  - If $CA > 0$, then exports of goods and services exceed imports and the country has a current account surplus.
  - If $CA < 0$, then imports exceed exports and the country has a current account deficit.
  - Income payments represent the money earned (i.e., income) by foreign residents on their investments in the United States.
  - Income receipts represent the money earned by domestic residents on their investments abroad.
  - Unilateral transfers represent payments that are made or received that do not have an offsetting product flow in the opposite direction.
  - The primary examples of unilateral transfers are remittances and foreign aid.
- **Merchandise Trade Balance**
  - The merchandise trade balance (or goods balance) can be defined as, $GB = EX^{G} - IM^{G}$.
  - If $GB > 0$, the country would have a (merchandise) trade surplus.
  - If $GB < 0$, the country has a trade deficit.
- **Services Balance**
  - The service balance can be defined as $SB = EX^{S} - IM^{S}$.

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    - If SB > 0, the country has a service surplus.
    - If SB < 0, the country has a service deficit.
- **Goods and Services Balance**
    - The goods and services balance (or goods balance) can be defined as, GSB = $EX^{G\&S} - IM^{G\&S}$.
    - If GSB > 0, the country would have a goods and services (G&S) surplus.
    - If GSB < 0, the country has a G&S deficit.
- **GDP versus GNP**
    - The gross domestic product (GDP) represents the value of all goods and services produced within the borders of the country.
    - The gross national product (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 also that GDP excludes income payments and receipts and unilateral transfers.
    - When income payments and receipts and unilateral transfers are included in the national income identity and the current account balance is used for EX – IM, the national income variable becomes the GNP.
    - GDP = $C + I + G + EX^{G\&S} - IM^{G\&S}$ while GNP = $C + I + G + EX^{G,S,IPR,UT} - IM^{G,S,IPR,UT}$.
- **Financial Account Balance**
    - The financial account balance can be defined as $KA = EX^{A} - IM^{A}$, where EX^{A} and IM^{A} refer to the export and import of assets, respectively.
    - If KA > 0, then the country is exporting more assets than it is importing and it has a financial account surplus.
    - If KA < 0, then the country has a financial account deficit.
    - Assets are two types:
        - IOUs (I owe you) - Bonds, savings accounts, Treasury bills.
        - Ownership shares in a business or property.
    - IOUs involve a contractual obligation to repay principal plus interest according to the terms of the contract or agreement while ownership shares do not have such obligations.

Key Takeaways

- The *trade balance* may describe a variety of different ways to account for the difference between exports and imports.
- The current account is the broadest measure of trade flows between countries encompassing goods, services income payments and receipts, and unilateral transfers.
- The merchandise trade balance is a more narrow measure of trade between countries encompassing only traded goods.
- Net exports often refer to the balance on goods and services alone.

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- GDP is a measure of national income that includes all production that occurs within the borders of a country. It is measured by using the goods and services balance for exports and imports.
- GNP is a measure of national income that includes all production by U.S. citizens that occurs anywhere in the world. It is measured by using the current account balance for exports and imports.
- The financial account balance measures all exports and imports of assets, which means foreign purchases of domestic assets and domestic purchases of foreign assets.

Exercises

1. **Jeopardy Questions:** As in the popular television game show, you are given an answer to a question and you must respond with the question. For example, if the answer is "A tax on imports," then the correct question is "What is a tariff?"
    a. A record of all international transactions for goods and services.
    Answer: the current account
    b. A record of all international transactions for assets.
    Answer: the financial account
    c. The name of the balance of payments account that records transactions for goods.
    Answer: merchandise trade account
    d. d. The term used to describe the profit earned by domestic residents on their foreign business operations.
    Answer: income receipts
    e. The term used to describe the profit earned by foreign residents on their domestic business operations.
    Answer: income payments
    f. The term used to describe remittances because they do not have a corresponding product flow to offset the money export or import.
    Answer: unilateral transfers
    g. Of net importer or net exporter of services, this describes a country that has more income payments than income receipts.
    Answer: net exporter of services
    h. This measure of national output includes only the imports and exports of goods and services in its trade balance.
    Answer: GDP (gross domestic product)
    i. This measure of national output includes income payments and receipts in its trade balance.
    Answer: GNP (gross national product)

Additional Exercises

1. Study the trends in international transactions in the U.S. between 1960 and 2009 from the statistics provided by the BEA (http://www.bea.gov/international/xls/table1.xls). Which of the components have

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contributed significantly to the fall in the value of the financial account (between 2000 and 2009)

5. Recording Transactions on the Balance of Payments

- Learn how individual transactions between a foreign and domestic resident are recorded on the balance of payments accounts.
- 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.

Section Outline

- The balance of payments accounts can be presented in ledger form with two columns.
- One column is used to record credit entries.
- The second column is used to record debit entries.
- The debit and credit columns in the ledger are used to record each side of every transaction.
- Every transaction must result in a credit and debit entry of equal value.
- Rules of thumb to help classify entries on the balance of payments:
  - 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.
- Entries in the balance of payments accounts are classified as the current account or the financial account.
- If an item in a transaction is a good or a service, the value of that item will be recorded in the current account.
- If an item in a transaction is an asset, the value of that item will be 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.
  - Refer to the Steps 1, 2, 3a, and 3b representing the series of hypothetical transactions between the two residents and the impact of their transactions on the balance of payments.
  - The exercise will provide insight into the relationship between the current account and the financial account and provide a mechanism for interpreting trade deficits and surpluses.
- **Important Lessons from the Exchange Story**
  - The summary statistics suggests that the following relationship must hold true: Current account balance + Financial account balance = 0.

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    - Anytime a country has a current account deficit, it must have a financial account surplus of equal value.
    - Anytime a country has a current account surplus, it must have a financial account deficit of equal value.
    - Anytime a country has balanced trade (a balanced current account), then it must have balance on its financial account.
    - This relationship between the current account and the financial account is not an economic theory, it is an accounting identity.
    - A country's balance of payments statistics reveals that the balance on current account plus the balance on the financial account rarely sums to zero because of the presence of measurement errors.
    - In terms of the measured balances on the balance of payments accounts, the following relationship will hold: Current account 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.

Key Takeaways

- Every transaction between a domestic and foreign resident can be recorded as a debit and credit entry of equal value on the balance of payments accounts.
- All components of transactions that involve assets, including currency flows, are recorded on the financial account; all other items are recorded on the current account.
- Trade deficits on a country's current account imply an equally sized financial account surplus, while all trade surpluses implies an equally sized financial account deficit.
- In the aggregate, imbalances on a current account, a trade account, or a financial account do not represent unequal exchanges, or inequities, between countries.

Exercises

1. **Jeopardy Questions:** As in the popular television game show, you are given an answer to a question and you must respond with the question. For example, if the answer is "A tax on imports," then the correct question is "What is a tariff?"
    a. The balance on a country's financial account when its current account has a deficit of $80 billion.
    Answer: Surplus of $80 billion, or +$80 billion.
    b. A country's financial account balance when its trade balance is –$60 billion and its service balance is +$25 billion.
    Answer: A surplus of $25 billion, or +$25 billion.
    c. The international transactions for shares of stock in corporations (in excess of 10 percent of the company's value) or for real estate.
    Answer: Foreign direct investment (FDI)

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d. Of credit or debit, this is how exports are recorded on the balance of payments.
   Answer: Credit
e. Of current account or financial account, this is where an export of a clock will be recorded.
   Answer: Current account
f. Of current account or financial account, this is where an import of currency from your aunt in Paraguay will be recorded.
   Answer: Current account

2. Use the information below from the 1997 U.S. national income accounts to calculate the following. (Assume the balance on income and unilateral transfers was zero.)
   a. Current account balance: _____
   b. Merchandise trade balance: _____
   c. Service balance: _____
   d. Net income payments and receipts: _____
   e. Goods and services balance: _____

Table 2.4. U.S. National Income Statistics, 1997 (in Billions of Dollars)	
Gross Domestic Product	8,080
Exports of Goods and Services	934
Merchandise Exports	678
Income Receipts	257
Imports of Goods and Services	1,043
Merchandise Imports	877
Income Payments	244
Net Unilateral Transfers	-45

Answer:
   a. The current account balance is the difference between exports of goods and services, and income receipts AND imports of goods and services and income payments plus net unilateral transfers. Thus,
      CA = $934 + 237 - $1043 – 244 – 45 = -$161 billion.
      The negative sign indicates a deficit.
   b. The merchandise trade balance accounts only for trade in merchandise goods. Thus,
      TB = $678 - $877 = -$199 billion. Also a deficit.
   c. First determine exports of services, EXS = EXG&S - EXG = $934 - $678 = $256 billion. Next determine imports of services, IMS = IMG&S - IMG = $1043 - $877 = $166 billion. Finally, SB = EXS - IMS = $256 - $166 = +$90 billion.

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The positive sign indicates a surplus.

d. Take income receipts minus income payments = +257 – 244 = +13 billion, a net receipt.
e. $EX_{G\&S} - IM_{G\&S}$ = +934 – 1043 = -$109 billion, a deficit.

6. U.S. Balance of Payments Statistics (2008)

- 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.

Section Outline

- Refer to the U.S. Department of Commerce, Bureau of Economic Analysis Web site, located at http://www.bea.gov to study the U.S. BoP statistics.
- Refer to the abbreviated version of the U.S. BoP statistics to understand the current account, the capital account and the financial account transactions.

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

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- **Summary Balances on the U.S. Balance of Payments (2008)**

Table 2.3. Balances on the U.S. Balance of Payments, 2008 (Millions of Dollars Seasonally Adjusted) (Credits [+], Debits [–])		
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

- In 2008, the United States 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 recorded since the BEA records began in 1960 of $200 billion (credit entry).
  - The primary source of the statistical discrepancy is on the capital account side rather than the current account side.

Key Takeaways

- The U.S. balance of payments records transactions on both the current and financial accounts concluding with several important balances.
- The United States had a current account deficit of $706 billion in 2008.
- The U.S. had a merchandise trade deficit that was larger than its current account deficit at over $840 billion in 2008.
- The U.S. had a financial account surplus of over $533 billion.
- The statistical discrepancy at $200 billion in 2008 demonstrates that all international transactions are not being recorded since the sum of the balance on the current account and the financial accounts does not equal zero.

Exercises

1. **Jeopardy Questions:** As in the popular television game show, you are given an answer to a question and you must respond with the question. For example, if the answer is “a tax on imports,” then the correct question is “What is a tariff?”

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a. The value of the statistical discrepancy if a country has a current account deficit of $250 billion and a financial account surplus of $230 billion.
   Answer: + 20 billion
b. The approximate value of the U.S. current account deficit in 2008.
   Answer: ~ $700 billion
c. The approximate value of the U.S. merchandise trade deficit in 2008.
   Answer: ~ 850 billion
d. Of U.S. domestic residents or foreign residents, this group profited more on its foreign investments because the United States ran a surplus on its investment income balance.
   Answer: U.S. domestic residents
e. The approximate value of the U.S. financial account surplus in 2008.
   Answer: ~ $535 billion
f. The approximate value of the statistical discrepancy in the U.S. balance of payments in 2008.
   Answer: + $200 billion

7. The Twin-Deficit Identity

- Learn the interrelationship between a country's government budget balance (deficit) and its current account balance (deficit).
- Interpret the interrelationships of trade balances and budget balances in terms of the sources and uses of funds in the financial system.

Section Outline

- 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 C.
  - The money that flows to firms from sales of consumption goods is given to the workers in exchange for their labor services.
  - Disposable income is all the money households have to spend, which in this case is equal to the national income (NI).
  - In this version GNP rather than GDP is used to measure national income.
- **Circular Flow: Version 2**
  - The circular flow can be extended by including financial institutions represented by Figure 2.3.
  - The presence of financial institutions allows some money to be diverted from the consumption flow.

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- The revenue earned by firms is not entirely given away to the workers. Some of it is retained in the form of profit and excess earnings.
- The retained earnings may be used directly to purchase new capital equipment, or may be saved by depositing in a financial institution.
- 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: Version 3**
  - The circular flow in version 2 can be further extended by including the government sector represented by Figure 2.4.
  - The government is shown both to take money out of the circular flow and to inject money back in.
  - 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.
  - The flow of funds in and out of the government sector is represented with the identity: $S_G = T - TR - G$.
  - When T exceeds the sum of TR and G, the government has extra saving that flows into the financial sector.
  - Negative government saving implies a government budget deficit.
  - Positive government saving implies a government budget 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: Version 4**
  - The circular flow in version 3 can be further extended by including the trade flows with the rest of the world, represented by Figure 2.5.
  - Trade with the RoW consists first of exports of goods, services, income and transfers, expenditures on exports (EX), represented by a flow into firms.
  - Imports of goods, services, income and transfers, imports (IM) are subtracted away from firms.
  - The national income identity with all major sectors included and now becomes: GNP = C + I + G + EX – IM.
  - EX – IM is the balance on the current account.
  - If EX – IM > 0, then the country would have a current account (CA) surplus, whereas if EX – IM < 0 the country would have a CA deficit.

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    - Foreign saving offsets the CA deficit. This implies a deficit on CA will result in financial account surplus.
- **The Twin-Deficit Identity**
    - The twin-deficit identity is derived by accounting for the monetary flows in and out of the financial sector in version four of the circular flow.
    - $S_{HH} + S_B + S_G + S_F = I$.
    - Since household plus business saving equals private saving, $S_P + S_G + S_F = I$.
    - This relationship is an accounting identity.
    - Given: $S_G = T – TR – G$, $S_F = IM – EX$, and $S_P = S_{HH} + S_B$, we get the twin-deficit identity as: $S_P + T – TR – G + IM – EX = I$ or $(S_P – I) + (IM – EX) = (G + TR – T)$.
    - The twin-deficit 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 Relationship in the United States and China**
    - Refer to the values in Table 2.4 and 2.5 for the twin-deficit identity in the United States and in China over the past ten years.
    - The twin deficit numbers reveal the following interesting patterns:
        - In 2008, the United States had twin deficits, with a CA deficit of 4.7 percent of GDP and a government budget deficit of 4.2 percent.
        - In 2007, government borrowing requirements were much lower, at 1.6 percent, but borrowing from foreigners was higher at 5.3 percent.
        - The United States has had twin deficits since 2001, when it finished a four-year run with a trade deficit and a government budget surplus.
        - During the budget surplus years the government was able to retire some of its outstanding debt, but the country also ran CA deficits implying, borrowings from foreigners.
        - Private saving and investment as a percentage of GDP were about three times more in China than the United States.
        - China's consumption figures are usually less than 50 percent of GDP.
        - In 2007, China had twin surpluses, a government budget surplus and a trade surplus.
        - Per capita GDP in China is much lower compared to the same in the U.S.

Key Takeaways

- Twin deficit occur when a country has both a current account deficit and a government budget deficit at the same time.
- When twin deficits occur, the sum of net private savings ($S_p – I$) and the current account deficit must equal the government budget deficit.

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- A government budget deficit represents a use of funds drawn from the financial sector.
- A trade deficit represents a source of funds for the financial sector.
- Private saving represents a source of funds for the financial sector.
- Private investment represents a use of funds drawn from the financial sector.
- The United States has run twin deficits for the past seven years. It can be reasonably described as a low-investment, low-saving, and high-consumption country.
- China has mostly run trade surpluses and budget deficits in the past decade. It can be reasonably described as a high-investment, high-saving, and low-consumption country.

Exercise

1. **Jeopardy Questions:** As in the popular television game show, you are given an answer to a question and you must respond with the question. For example, if the answer is "A tax on imports," then the correct question is "What is a tariff?"
    a. An excess of government receipts over expenditures.
    Answer: Government budget surplus
    b. National income minus taxes plus transfer payments.
    Answer: Disposable income
    c. The level of government spending when the government deficit is $100 billion, transfer payments are $800 billion, and tax revenues are $1300 billion.
    Answer: $600 billion
    d. The four different sources of saving described in this chapter.
    Answer: Household saving, business saving, government saving, and foreign saving.
    e. Of deficit, surplus, or balance, the balance on the current account if the expression IM − EX in the twin-deficit identity is positive.
    Answer: Deficit
    f. Of deficit, surplus, or balance, the balance on the government budget if the expression (G + TR − T) in the twin-deficit identity is positive.
    Answer: Deficit

2. What is the government's budget balance if government spending is $40 billion, private saving is $60 billion, government transfer payments are $10 billion, private investment is $80 billion and tax revenues are $50 billion?
Answer: Budget balance = G + TR – T = 40 + 10 – 50 = 0. The budget is balanced.

3. Below is the economic data for the fictional country of Sandia. Write out the twin-deficit identity. Verify whether Sandia's data satisfies the identity.

Sandia Economic Data (in Billions of Dollars)	
Gross Domestic Product	400

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Imports of Goods and Services	140
Investment Spending	20
Private Saving	30
Exports of Goods and Services	100
Government Transfers	40
Government Tax Revenues	140
Government Spending	140
Consumption Spending	280

Answer: (Sp – I) + (IM – EX) = (G + TR – T)
(30 – 20) + (140 – 100) = (140 + 40 – 140)
50 not= 40. The identity is NOT satisfied.

4. Japan once argued that the main reason the United States had large trade deficits during the 1980s and 1990s were because of its large federal government budget deficit. If the United States wanted to reduce its trade deficit, Japan said, then it needed to reduce its budget deficit. Use the twin-deficit identity to answer the following questions:
   a. Explain what would have to also hold for there to be a direct relationship between budget deficit changes and trade deficit changes?
      Answer: The twin-deficit identity is, (SP - I) + (IM - EX) = (G + TR - T) where (IM - EX) represents the trade (CA) deficit and (G + TR - T) represents the government budget deficit. The identity says that these aggregate variables must always "add-up" as shown. It is possible for both deficits to rise equally and to maintain the identity. However, for that to happen it would also have to be true that the difference between private saving and investment (SP - I) remains constant. In other words, if one assumed that (SP - I) always remained constant, then there would be a direct relationship between the twin deficits. An increase in the budget deficit would cause an increase in the trade deficit, in this case. However, the assumption that (SP - I) is unchanged is unrealistic since these two variables do generally change over time.
   b. Is it possible to account for a reduction in the federal government budget deficit and a simultaneous increase in the current account deficit? Explain.
      Answer: Yes. The question asks how it might be possible for the right-hand-side (RHS) of the identity, the government budget deficit, to fall, while the (IM - EX) term, the trade deficit rises. If the RHS of the identity is falling then the left-hand side (LHS) must also fall to maintain the equality. Since the trade deficit on the LHS is rising, there must be an even greater offsetting change in either SP or I. Possibility one is that SP falls sufficiently to maintain the identity. Possibility two is that I rises sufficiently. The third possibility is that both SP falls and I rises.
   c. Is it possible to reduce the federal government budget deficit, maintain the same level of net private saving (i.e., $S_p - I$) and still experience an increase in the current account deficit? Explain.
      Answer: No. The question asks if (SP - I), net private saving, is maintained and there is a reduction in the government budget deficit, (i.e.,

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G + TR -T falls), whether the trade deficit, (IM - EX), could rise. This would imply that the RHS is falling while the LHS is rising, thus it could not occur.

5. Explain whether the following economic changes are consistent with the twin-deficit identity. Assume ceteris paribus, meaning all other variables in the identity remain fixed.
   a. A $10 billion increase in the government budget deficit and a $10 billion increase in the current account deficit.
      Answer: Yes. The Twin-Deficit Identity says, (SP - I) + (IM - EX) = (G + TR - T). A $10 billion increase in the government budget deficit means that (G + TR - T) of the RHS rises, while a $10 billion increase in the current account deficit means that (IM - EX) on the LHS rises by the same amount. Such equal changes would maintain the identity and thus are possible.
   b. A $50 billion decrease in the government budget deficit and a $50 billion increase in private investment.
      Answer: Yes. The Twin-Deficit Identity says, (SP - I) + (IM - EX) = (G + TR - T). A $50 billion decrease in the government budget deficit would lower (G + TR - T) on the RHS while a $50 billion increase in private investment would also lower the LHS since I is subtracted on the left. Such equal changes would maintain the identity and thus are possible.
   c. A $10 billion increase each in the government budget surplus, the current account deficit, private savings and private investment.
      Answer: No. The Twin-Deficit Identity says, (SP - I) + (IM - EX) = (G + TR - T). First, if private savings and private investment both rise by $10 billion this would have no effect upon the value on the LHS, we could ignore these two. A $10 billion increase the government budget surplus inplies (G + TR - T) on the RHS is decreasing since an increase in the surplus is the same direction of change as a decrease in a deficit. However, a $10 billion increase in the current account deficit, (IM - EX) causes a decrease in the value on the LHS. Since the RHS cannot go up while the LHS goes down, these changes are not possible.
   d. A $30 billion increase in the current account surplus and a $30 billion increase in the government budget deficit.
      Answer: No. The Twin-Deficit Identity says, (SP - I) + (IM - EX) = (G + TR - T). A $30 billion increase in the current account surplus means that (IM - EX) is falling on the LHS. A $30 billion increase in the government budget deficit means that (G + TR - T) on the RHS is rising. Since the RHS cannot go up while the LHS goes down, these changes are not possible.

6. Refer to the table below to answer the following questions.
   a. Use the twin-deficit identity to fill in the blank values in the table below for the three fictitious countries.

	Private Saving	Investment	CA Deficit	Govt. Budget

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	(S_p)			Deficit
Metis	500	500		200
Thebe		150	0	300
Leda	75	100	0	

Answer:

	Private Saving (S_p)	Investment	CA Deficit	Govt. Budget Deficit
Metis	500	500	**200**	200
Thebe	**450**	150	0	300
Leda	75	100	0	**-25**

b. Which country is best described as financing its government budget deficit with domestic saving?
   Answer: Thebe
c. Which country is best described as financing its government budget deficit with foreign saving?
   Answer: Metis
d. Which country is best described as financing extra domestic investment with government saving?
   Answer: Leda

8. International Investment Position

- Learn how to define and interpret a country's international investment position.
- Understand how the international investment position is updated from year to year.

Section Outline

- 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 to foreigners exceed domestic assets, then the country would be called a debtor country.
- If the country's domestic assets exceed the domestic liabilities to foreigners, then the country would be called a creditor country.
- Asset holdings may consist of either debt obligations or equity claims.
- The debt contract establishes an obligation for the borrower to repay principle and interest in the future.
- Equity claims represent ownership shares in potentially productive assets.
- Debt obligations pose several risks:

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    - The risk of possible default.
    - Unexpected inflation and currency fluctuations.
- The risk of equity purchases arises whenever the asset's rate of return is less than expected. This can happen for a number of different reasons:
    - If the equity purchases are direct investment in a business, then the return on that investment 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 is larger than any other country in the world.
    - The U.S. "net" investment position is the difference between the sum total value of Foreign assets owned by U.S. residents (U.S. assets abroad) and U.S. assets owned by foreigners (foreign-owned assets in the United States).
    - 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 despite annual current account deficits since then.
    - Refer to the 2008 BEA IIP spreadsheet to understand how the investment position in 2008 is derived from the 2007 position.

Key Takeaways

- The IIP measures the difference between the total value of domestic holdings of foreign assets and the value of foreign assets held in the domestic country. If the IIP is negative, we say the country is a debtor country. If the IIP is positive, we say the country is a creditor country.
- Asset holdings include both debt and equities. Debt involves an obligation to repay principal and interest, whereas equities involve either profit or loss to the foreign asset holder.
- The U.S. IIP stands at $3.5 trillion in 2008 making the United States the largest debtor nation in the world.

Exercise

1. **Jeopardy Questions:** As in the popular television game show, you are given an answer to a question and you must respond with the question. For example, if the answer is "A tax on imports," then the correct question is "What is a tariff?"
    a. A complete record of a country's holdings of foreign assets and foreigners' holdings of domestic assets at a point in time.
    Answer: International investment position or international asset position
    b. A country whose total domestic assets held abroad exceeds total domestic liabilities held by foreigners.

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Answer: Creditor

c. A country whose total domestic liabilities held by foreigners exceeds total domestic assets held abroad.
   Answer: Debtor
d. The name for the type of asset that establishes an obligation for the borrower to repay principle and interest in the future.
   Answer: Debt
e. The name for the type of asset that represents ownership shares in potentially productive assets.
   Answer: Equity

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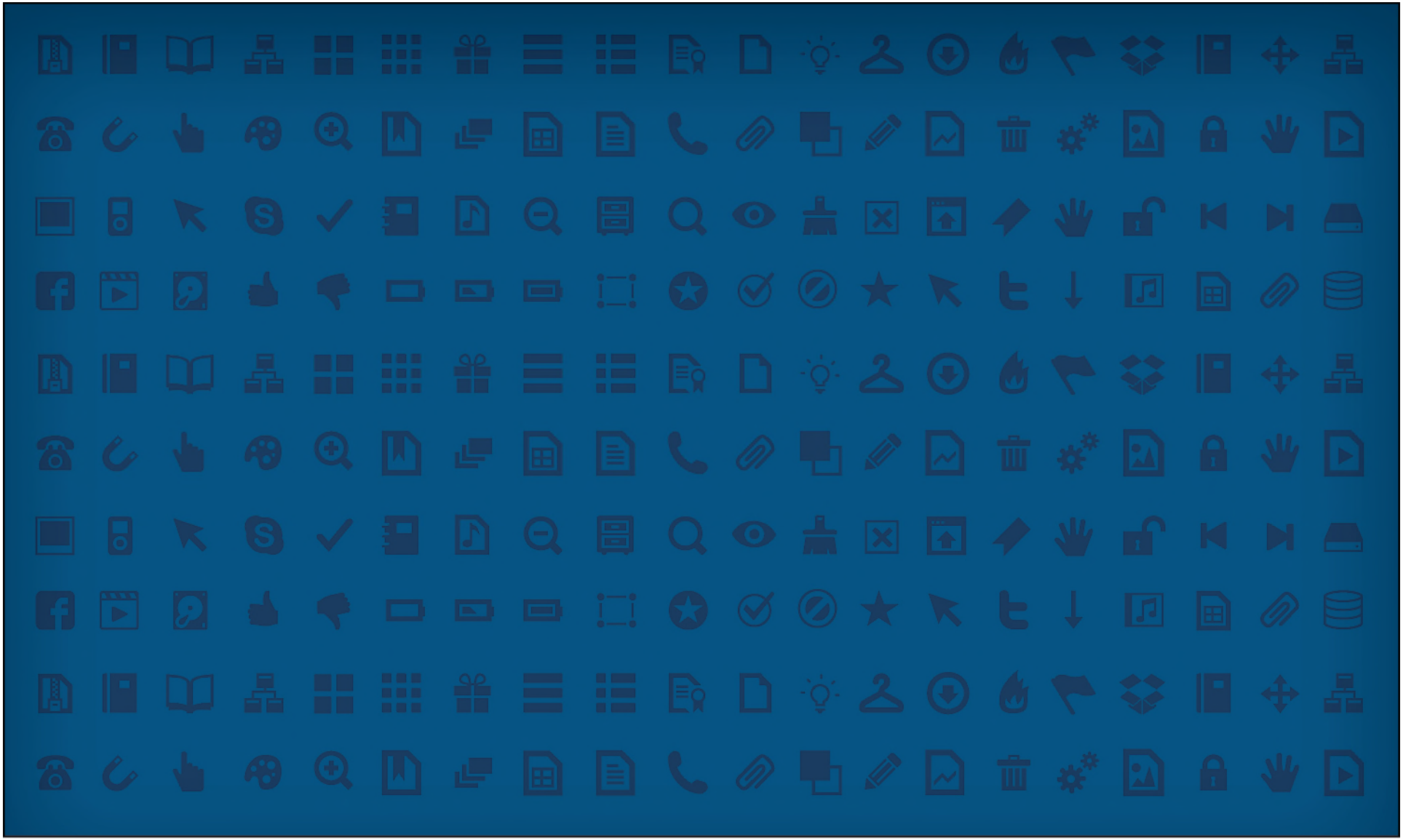

Survey of International Economics

By Steve Suranovic

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Chapter 2

National Income and the Balance of Payments Accounts

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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

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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

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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

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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

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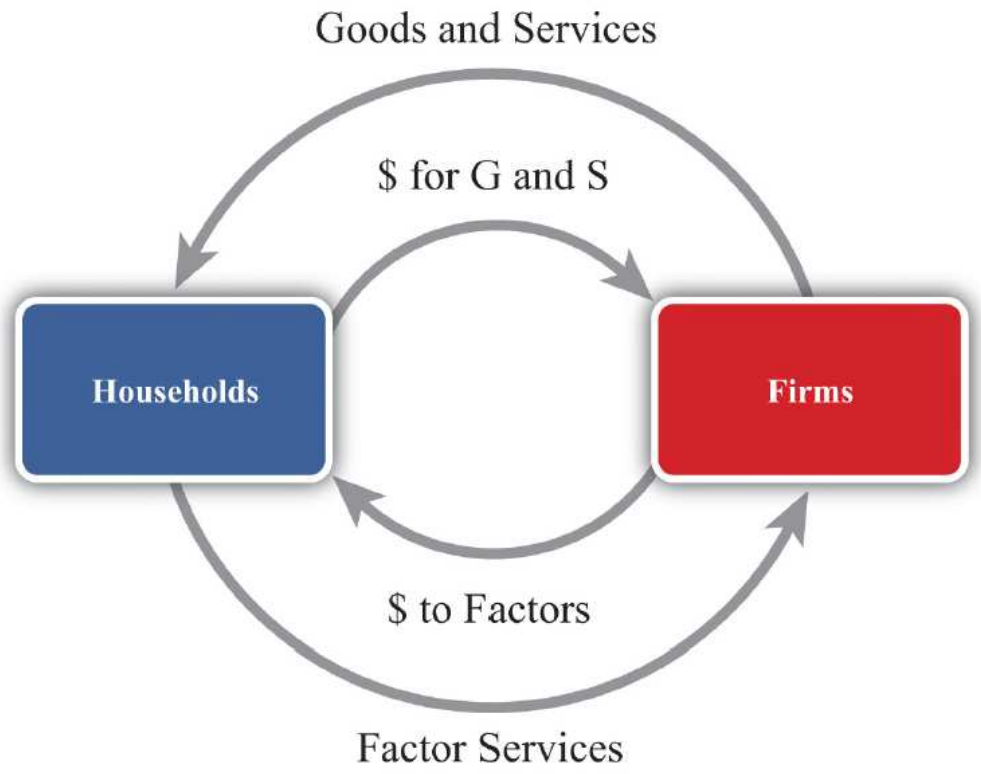
Circular Flow of Money Diagram



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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

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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

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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

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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

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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

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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

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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

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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
- $GDP = (C_D + C_F) + (I_D + I_F) + (G_D + G_F) + (EX_D + EX_F) - IM$
- $IM = C_F + I_F + G_F + EX_F$
- $GDP = C_D + I_D + G_D + EX_D$

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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

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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

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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

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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

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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)

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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

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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

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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
- $GDP = C + I + G + EX^{G\&S} - IM^{G\&S}$
- $GNP = C + I + G + EX^{G,S,IPR,UT} - IM^{G,S,IPR,UT}$

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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

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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

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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

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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

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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

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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

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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

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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

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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

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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

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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

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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

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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

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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: $S_{HH} + S_B + S_G = I$

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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

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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

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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

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The Twin-Deficit Figures in the United States

	$(S_p - I)$ + Current Account Deficit = 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.**

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The Twin-Deficit Figures in China

	$(S_p - I)$ + Current Account Deficit = 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.				

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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

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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

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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

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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

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