

# 国际经济学

## 开放条件下的国民收入核算与国际收支平衡表

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2018 年 10 月 30 日

# 提纲

## 1 Motivation

## 2 National Income Accounting

## 3 Balance of Payments Accounting



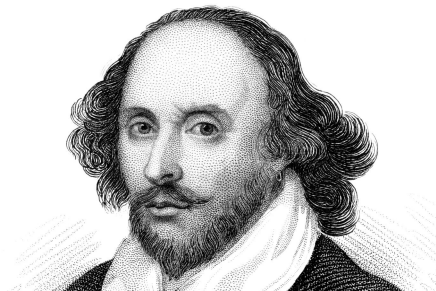
## 鲁晓东



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## 波洛尼厄斯（莎士比亚悲剧《哈姆雷特》中的人物）

不要借钱给别人，也不要向别人借钱；借钱给别人会让你人财两空，向别人借钱会让你挥霍无度，



- 如果莎士比亚笔下的波洛尼厄斯，能够见识到当今中国和美国不断攀升的外债，他一定会感到沮丧
- 当今的全球金融经济中，国际金融交易规模已经达到了前所未有的水平
- 为什么会产生这些交易？它们起到了什么作用？是谁向谁放贷？为什么要放贷？
- 为什么有些债务偿还了而有些却没有，
- 金融的自由流动是经济利益的源泉吗？那么又有什么潜在的经济代价？

# 政策

托马斯·杰斐逊

总之，历史就只告诉我们一件事：政府有多坏



- 一个热衷借债的政府一定是坏政府吗？
- 为什么人民币走在了国际化的道路上，而有些国家的货币却走在通往地狱的道路上？
- 在政府治理的最差的国家里，贫困，投资不足，恶性通货膨胀，经济危机以及债务问题屡屡发生，如何理解这些严重的经济失灵？
- 如何评价政府在货币和财政政策？或是在汇率和资本流动性方面作出比较单调的选择呢？有唯

正确的答案吗？

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# Goodbye micro foundations

- Our first trade models
  - Stark and simple
  - General equilibrium
  - A real economy – no money!
- Models in the remainder of course
  - Partial equilibrium
  - Equilibrium conditions:
    - 1 Interest rate parity
    - 2 Law of one price
- Text: Micro vs Macro
  - A little more complicated than that...



## Why partial equilibrium?

- Easier to analyze some important topics
- Our general equilibrium models abstracted from
  - 1 Unemployment
  - 2 Saving
  - 3 Trade imbalances
  - 4 Money



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## 鲁晓东

- 国际经济学

- Definition from textbook:
  - The value of all final goods and services produced by the country's factors of production and sold on the market in a given time period
- Only final goods are counted, not intermediates
- Count only the sale of the textbook, not the sale of the paper to the bookmaker
- Final goods can also be "investment" like production machines

# Gross National Product

- Definition from textbook:
  - The value of all final goods and services **produced by the country's factors of production** and sold on the market in a given time period
- The final goods must have been produced using factors of production owned by nationals
  - 1 Land (resources)
  - 2 Labor (human capital)
  - 3 Capital (machines, buildings, etc)
- Production does not have to take place within the country

# Gross National Product

- Definition from textbook:
  - The value of all final goods and services produced by the country's factors of production and sold on the market in a given time period
- Only count final goods that are sold in the relevant year
- Do not count sale of used textbooks!
- Sale of previously manufactured stuff is just exchange, not production
- Caution: Inventories are counted as a firm selling to itself

# Gross National Product

- Definition from textbook:
  - The value of all final goods and services produced by the country's factors of production and sold on the market in a given time period
- Ex: Fish caught in pearl river and sold in a Xueren restaurant
  - Restaurant buys fish from fisherman – *not* part of GNP
  - Consumer buys restaurant service, incl. fish – part of GNP
- Ex: SOE company goes public
  - Investors buy stocks from firm – *not* part of GNP
  - Investors buy stocks from each other – *not* part of GNP
  - Commission charges collected by investment bank – part of GNP
- Ex: Chinese company opens factory in America
  - Sales of factory are part of GNP (less the wages paid to American labor)



# Gross National Product (GNP)

- Often separate GNP by ultimate use of production

$$GNP = C + I + G + CA$$

where

- $C$  is consumption
- $I$  is investment
- $G$  is government purchases
- $CA$  is current account balance (exports minus imports)
- What's the difference of GDP?
- Let's talk about these categories

## Gross National Product, ultimate use categories

$$GNP = C + I + G + CA$$

- Consumption

- Portion of production expended in satisfying current wants
- Examples: Movie tickets, food, dental work, and washing machines
- Largest share of production, 60-70% in US. How much in China?

## Gross National Product, ultimate use categories

$$GNP = C + I + G + CA$$

- Investment

- Any good or service which is used for future production
- Examples: Machinery for a factory, the newest word processor
- *Does not* include household “investment”, or purchases of bonds or shares
- If company sells bond and uses cash to buy machinery, it is counted as investment
- The sale of a bond between two people is just an exchange, not production

# Gross National Product, ultimate use categories

$$GNP = C + I + G + CA$$

## ■ Government purchases

- Any good or service ultimately used by the government
- Examples: new fighter jet, highway repair, basic research
- Some countries (China) divide this into:
  - Government consumption (ex: military)
  - Government investment (ex: highway repair)

# Gross National Product, ultimate use categories

$$GNP = C + I + G + CA$$

## ■ Current account balance

- $CA = EX - IM$
- $EX$  = goods and services produced by Chinese factors and used abroad
- $IM$  = goods and services produced by Foreign factors and used in China

# Gross National Product, ultimate use categories

$$GNP = C + I + G + CA$$

- Current account balance difference between exports and imports
- $> 0$  is *current account surplus*,  $< 0$  is *current account deficit*
- Surplus means a country is lending, deficit means borrowing
- Current account balance is change in net foreign wealth

# Gross National Product, ultimate use categories

$$GNP = C + I + G + CA$$

## ■ Takeaway

- GNP is (the value of) stuff produced in a country in a year

# Gross National Product, three details

- Three more details from the textbook
  - 1 National product vs national income
  - 2 Capital depreciation and international transfers
  - 3 GNP vs GDP



# National Product vs. National Income

- The value of production ultimately reaches owners of a factor
- Thus national income should equal national product
- Almost...

# National Product vs. National Income

- 1 Capital depreciation like a reduction in the wealth of owners of capital
  - Needs to be subtracted from production to get income
  - GNP net of depreciation is called Net National Product (NNP)
- 2 Unilateral transfers
  - Sometimes a country gives goods or services to another country
  - Needs to be added to production to get national income

# Gross Domestic Product

- GDP has replaced GNP as the most common headline figure in national accounts
- Only one difference
  - GDP is the product of all factors in a country, regardless of the owners
  - GNP is the product of all factors owned by people from a country, regardless of production location
- Ex: If a British firm owns a factory in China
  - The product is part of China's GDP, but not GNP

# U.S. GNP by use

Pearson MyLab

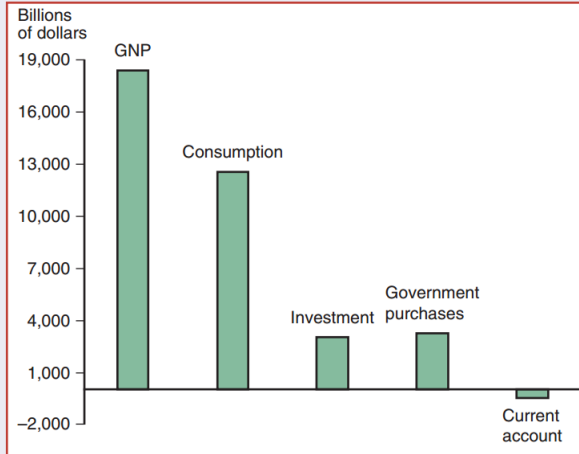
Economics Real-time data

FIGURE 13-1

## U.S. GNP and Its Components

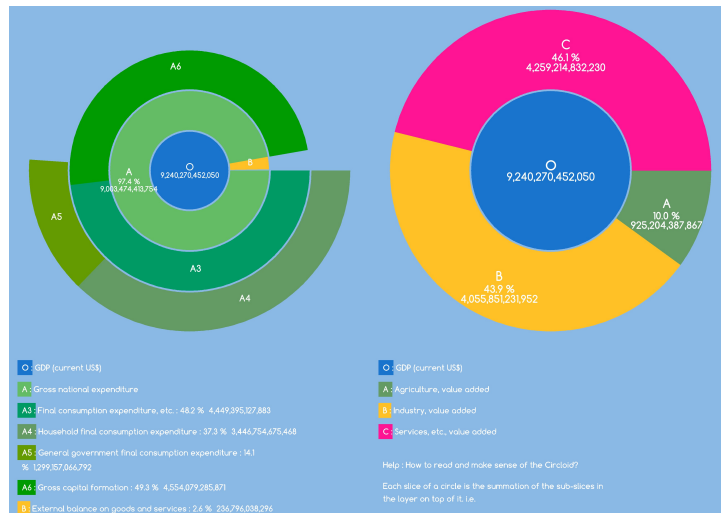
America's gross national product for the first quarter of 2016 can be broken down into the four components shown.

**Source:** U.S. Department of Commerce, Bureau of Economic Analysis. The figure shows 2016:Q1 GNP and its components at an annual rate, seasonally adjusted.



■ How would China be different?

# Composition of China GDP



## More on the Current Account

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

When production  $>$  domestic expenditure, exports  $>$  imports: current account  $> 0$  and trade balance  $> 0$

- if  $Y > (C + I + G) \Rightarrow EX > IM \Rightarrow CA > 0$  (surplus)
- if  $Y < (C + I + G) \Rightarrow EX < IM \Rightarrow CA < 0$  (deficit)

World production must equal world consumption, investment, and government purchases

- Globally, deficits and surpluses must balance
- Some countries often borrowers, others often lenders: **global imbalances**

# International Investment Position

## ■ The stock of net foreign wealth

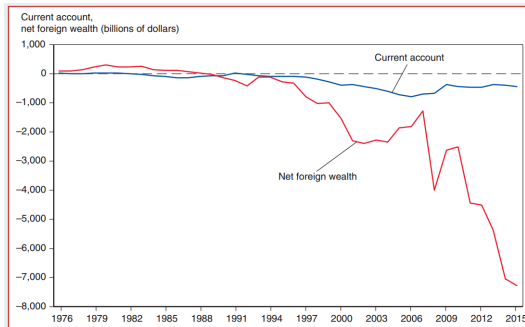


FIGURE 13-2

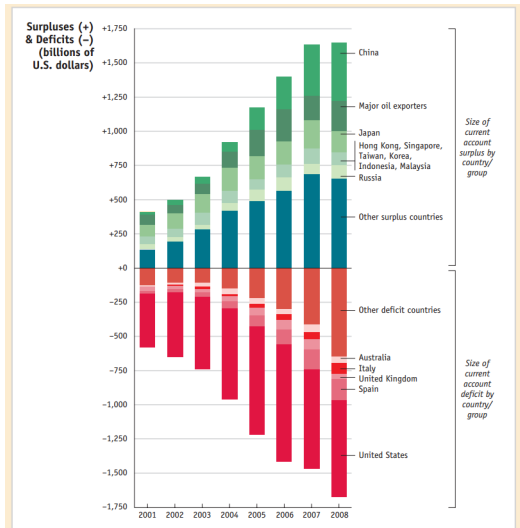
Pearson MyLab Economics Real-time data

### The U.S. Current Account and Net International Investment Position, 1976–2015

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

- Why is net foreign wealth so volatile?
- U.S. Debt Visualized: How It Literally Stacks Up <https://www.embedded.com/news/2017-02-05/visualizing-us-debt-2017-02-05>

# Deficits and Surpluses: The Balance of Payments (Source: IMF, International Financial Statistics)



- 各种不同国际经济交易是如何造成经常账户不平衡的？
- 这些不平衡如何通过金融手段得以解决？
- 造成这些不平衡的原因是什么？为什么有些国家会盈余，有些国家会赤字？
- 从长远来看，一个经济运行运行良好的国家，他的经常账户不平衡会起到什么作用？
- 为什么这些不平衡会是许多政策争论的焦点？



# National Saving

- Define national savings as:

$$S = Y - C - G$$

- GNP identity:

$$Y = C + I + G + CA$$

- Combine the two:

$$\Rightarrow S - CA = I$$

- Investment can be financed by:

- 1 Putting off consumption (pay today)
- 2 Borrowing from abroad (pay tomorrow)
- 3 Current account sometimes called *net foreign investment*

# National Saving: Private vs government

$$S = Y - C - G$$

$$S = (Y - C - T) + (T - G)$$

$$S = S^p + S^g$$

# National Saving: Private vs government

- Combining our two definitions of saving:

$$S = I + CA = S^p + S^g$$

$$S^p = I + CA - S^g$$

$$S^p = I + CA + (G - T)$$

- Private saving is used for:

- Investment at home
- Investment abroad
- Purchasing government debt(政府预算赤字)

# 小结

## ■ National Income Accounts

- $GNP: Y = C + I + G + CA$
- Only count stuff produced by factors owned by nationals
- Investment can be funded by foreign borrowing

## ■ Next: Balance of Payment Account

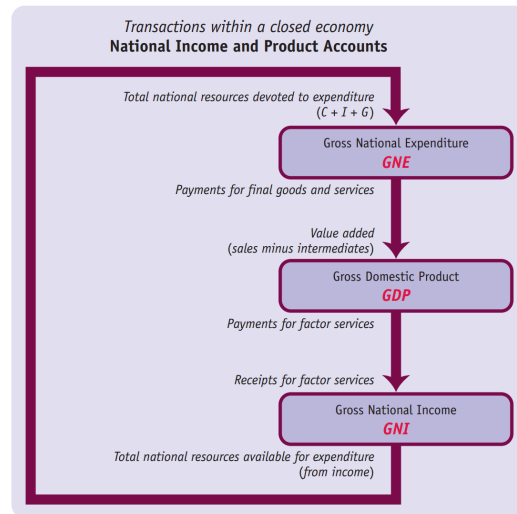
- Tracks credits and liabilities between countries
- Similar to a balance sheet from accounting

## 1 Motivation

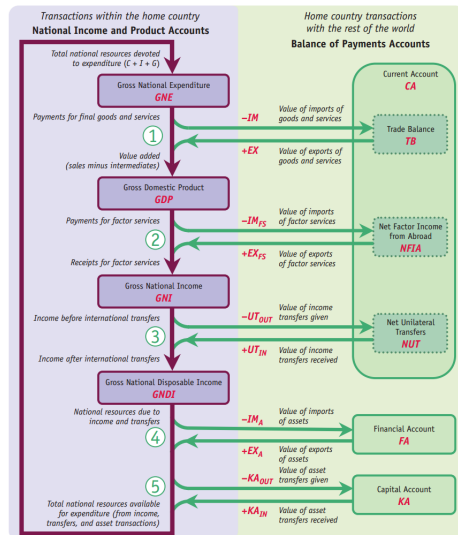
## 2 National Income Accounting

## 3 Balance of Payments Accounting

# The Flow of Payments in a Closed Economy



# The Flow of Payments in a Open Economy



# Balance of Payments Accounts

- Two types of transactions:
  - 1 Credit if a foreigner pays a native
  - 2 Debit if a native pays a foreigner
- A *Financial Asset* holds wealth: stocks, bonds, debt, etc
- $\text{current account} + \text{financial account} + \text{capital account} = 0$ 
  - 1 **current account**: tracks flows of goods and services (imports and exports)
  - 2 **financial account**: tracks flows of financial assets (financial capital)
  - 3 **capital account**: flows of special categories of assets: typically intangible assets like debt forgiveness, copyrights and trademarks.



# 国际收支平衡表

- 按照一定的编制原则和格式，排列组合特定时期内一国经济主体与他国经济主体之间的各项经济交易
- 是全面系统地记录和总结一国国际收支状况的统计报表
- 是反映一国对外经济发展、偿债能力等的重要文件，也是各国制定开放经济宏观经济政策的重要依据
- 各国编制 BOP 需要遵照 IMF 制定的规则——BPM，latest edition ( BPM6 ) was issued in 2010

# 国际收支平衡表编制原则

- 1 复式记账原则
  - 任意国际经济交易都应在借贷双方同时反映
- 2 权责发生制原则
  - 交易的记录时间以所有权转移为标准
- 3 市场价格原则
  - 单一记账货币原则
- 4 单一货币记账原则
  - 可以是外币，也可以是本币
  - 中国一般提供美元、SDR 和人民币的多种版本

# 复式记账原则

- 1 会计科目划分为借方和贷方
  - 借方科目为资金占用类科目，反映对外支付
  - 贷方科目为资金来源类科目，反映接受付款
  - 借方科目增加记“-”，贷方科目增加记“+”
- 2 每一笔对外交易需要同时留下两个记录，金额相同，方向相反
  - 借方记录国内居民对国外支付的交易
  - 贷方记录国内居民接受国外支付的交易

# 复式记账实例

- 1 某企业向美国出口价值 200 万美元的服装，进口商将款项汇入指定银行账户
  - 出口创汇，属贷方科目，记 “+ \$200 万”
  - 持有外国资产，属借方科目，记 “- \$200 万”
- 2 张三向国外大学汇出 100 美元留学申请费
  - 为进口服务付汇，属借方科目，记 “- \$100”
  - 持有外国资产减少，记 “+ \$100”

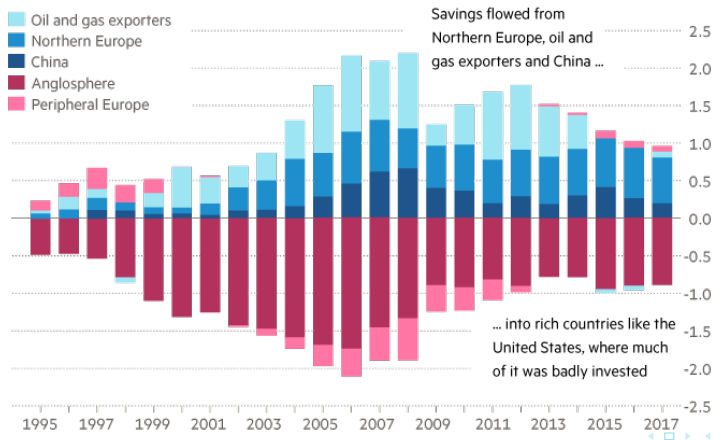
# 复式记账实例

- 1 强调居民与非居民的交易而不是资金收付
  - 国际收支  $\neq$  外汇收支
- 2 考察流量而不是存量，记录发生额而不是持有额
  - 国际收支平衡表支  $\neq$  国家资产负债表
- 3 理论上全球国际收支差额可以彼此抵消，但各个国家的表现并不如此
  - 某些国家存在巨大的收支失衡
- 4 国际收支经常不平衡，但国际收支平衡表永远账面平衡
  - 设置“储备资产变动”和“错误与遗漏”项目
- 5 国际收支是个事后的概念

# Global Imbalances

## Global imbalances

Current account balances as share of world GDP



## Example 1: US imports fax machine

- US imports fax machine from Italy
- Italian firm deposits USD in US bank

	Credit	Debit
Fax machine purchase (Current account, U.S. good import)		\$1,000
Sale of bank deposit by Citibank (Financial account, U.S. asset sale)	\$1,000	

## Example 2: US tourist buys French lunch

- US tourist buys lunch in Paris
- Pays with US credit card

	Credit	Debit
Meal purchase (Current account, U.S. service import)		\$200
Sale of claim on First Card (Financial account, U.S. asset sale)	\$200	



## Example 3: American buys share of British Petroleum

- American buys a share of BP
- BP deposits money in American bank

	Credit	Debit
Uncle Sid's purchase of a share of BP (Financial account, U.S. asset purchase)		\$95
BP's deposit of Uncle Sid's payment at Second Bank of Chicago (Financial account, U.S. asset sale)	\$95	

# U.S. Balance of Payments Accounts for 2015 (billions of dollars)

<b>Current Account</b>	
(1) Exports	3,044.08
Of which:	
Goods	1,510.30
Services	750.86
Income receipts (primary income)	782.92
(2) Imports	3,362.06
Of which:	
Goods	2,272.87
Services	488.66
Income payments (primary income)	600.53
(3) Net unilateral transfers (secondary income)	- 144.99
Balance on current account	- 462.97
[(1) - (2) + (3)]	
<b>Capital Account</b>	
(4)	- 0.04
<b>Financial Account</b>	
(5) Net U.S. acquisition of financial assets, excluding financial derivatives	225.40
Of which:	
Official reserve assets	- 6.29
Other assets	231.69
(6) Net U.S. incurrence of liabilities, excluding financial derivatives	395.23
Of which:	
Official reserve assets	- 98.10
Other assets	493.33
(7) Financial derivatives, net	- 25.39
Net financial flows	- 195.23
[(5) - (6) + (7)]	
<b>Statistical Discrepancy</b>	267.78
[Net financial flows less sum of current and capital accounts]	

**Table 1 2015 balance of payments** (billions of dollars)

\$0

# Official reserve assets

- Central banks hold foreign currency reserves
  - Purpose: Insure against macroeconomic fluctuations
- These are often American Treasury bills (promises that the American government will pay a dollar tomorrow)
- Buying and selling these bills locally allows central banks to affect money supply

## 鲁晓东



# Takeaways

- National Income Accounts
  - $GNP: Y = C + I + G + CA$
  - Only count stuff produced by factors owned by nationals
  - Investment can be funded by foreign borrowing
- Balance of Payment Account
  - Tracks credits and liabilities between countries
  - That is, who consumes now and who in the future