The measurement of macro-economic activity

Macroeconomic Policy API 5125

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Lecture 2

Objectives for this block of classes

as listed in the course outline

1. Macro-economic variables
2. National Income Accounting
3. Gross Domestic Product
4. Unemployment
5. Inflation

Today's class

1. The meaning and measurement of Gross Domestic Product
2. An assessment of its uses and limitations
3. Measures of "well-being"

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Gross Domestic Product (GDP)

in theory and practice

"To ascertain income it is necessary to set up a theory from which income is derived as a concept by postulation and then associate this concept with a certain set of primary facts."

> *Richard Stone (1951), The Role of Measurement in Economics, Cambridge: Cambridge Universty Press, page 9.*

Gross Domestic Product (GDP)

in theory and practice

- Gross Domestic Product is not a physical entity in the real world, it is an abstract idea given shape by economic theory
- That theory is based upon the concepts and categories in John Maynard Keynes's 1936 book *The General Theory of Employment, Interest, and Money*.
- As such it has its roots in the challenges facing policy makers during the Great Depression, and also the management of the economy during World War II
    - Simon Kuznets, Richard Stone, Wasily Leontief were important pioneers in developing the statistical methodology used to measure GDP in the United Kingdom and the United States

Gross Domestic Product (GDP)

is the total final market value of all goods and services produced in a country's economy (during a year)

1. "Gross"
   - it does not account for the depreciation of assets in the production process
   - Net Domestic Product
2. final market value
   - market valuation
   - avoid double counting
   - market versus non-market activities
3. all goods and all services
   - physical goods, but also services
   - Adam Smith thought that services were "unproductive"
4. in a country's economy
   - the economic activity within a country's boundary, and not based on the nationality of residents
   - GNP = GDP + net foreign payments, refers to all the economic output generated by national entities, whether produced at home or abroad
5. during a year implies a "flow" as opposed to a "stock"
   - income versus wealth

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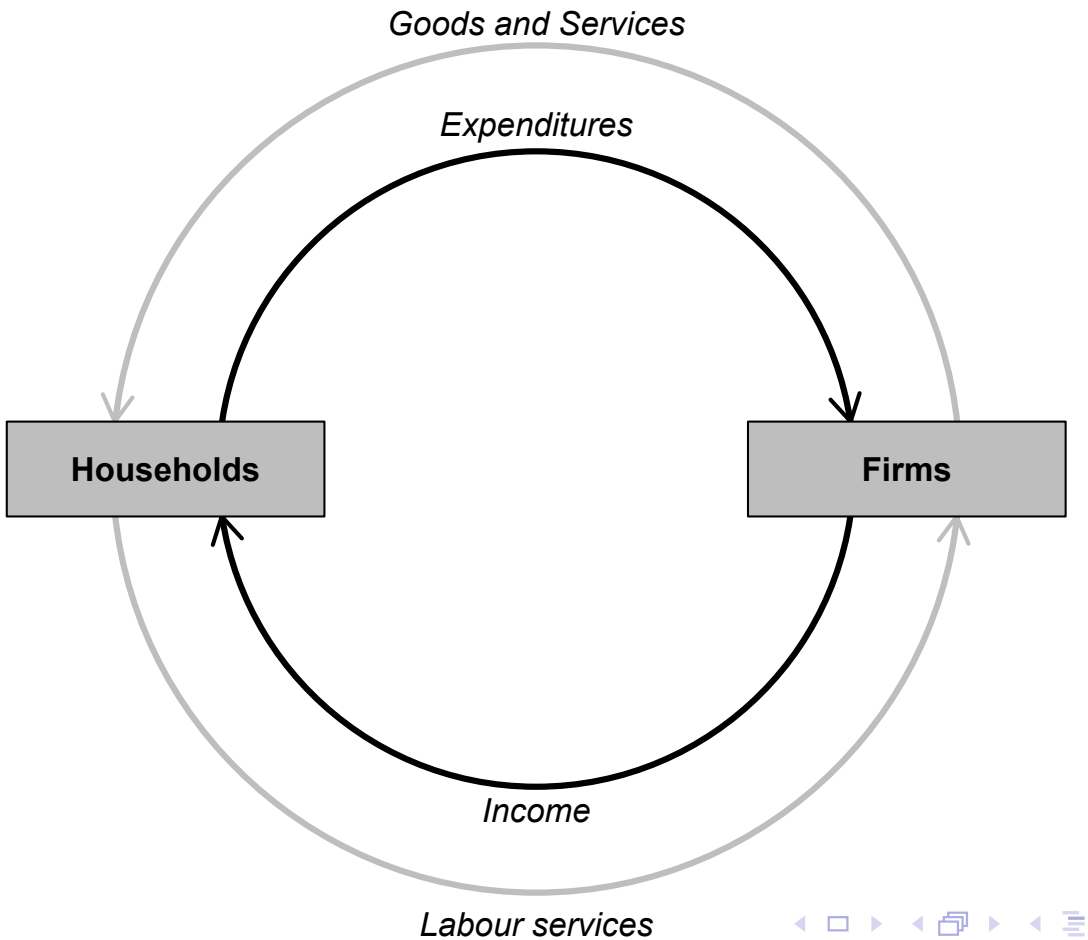
GDP and the "circular flow"

Households and Firms interact in "factor" markets and in "goods" markets



Measuring GDP

three equivalent ways

1. Expenditure method
   - the sum of all final purchases
   - GDP = C + I + G + (X-M)
   - government expenditures do not include transfer payments such as welfare or pensions
2. Income method
   - the sum of all incomes earned by the factors of production
   - wages and salaries + profits + other incomes + (taxes - subsidies)
3. Output method
   - the sum of "value added" in the production process
   - gross industrial output (less change in inventories) - intermediate inputs

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Gross Domestic Product, 2015 (market prices)

	millions of dollars	per cent
1. Expenditure method		
Household final consumption	1,139,931	57.5
Investment	388,754	19.6
Government	499,744	25.2
Exports	625,431	31.5
Imports	-671,243	-33.8
statistical discrepancy	671	
Gross domestic product	1,983,288	100
2. Income method		
Compensation of Employees	1,024,296	51.6
Profits and depreciation	510,210	25.7
Other incomes	232,224	11.7
Taxes less subsidies	217,229	10.9
statistical discrepancy	-671	
Gross domestic product	1,983,288	100

Statistical practice

1. A lot of detail in refining the definitions and implementing measurement
2. Time, stocks, flows
   - consumer durables versus company purchases subject to depreciation
   - inventories
   - owner occupied housing
3. Seasonality
4. Government spending
   - valued at cost not at market prices
5. The statistical discrepancy

Nominal versus "real" prices

1. "Nominal" or "Current" Prices
   - the terms are synonyms and refer to the prices actually observed at a particular point in time
2. "Real" or "Constant Prices
   - these terms are also synonyms are are not actually observed
   - constructed relative to some base year
3. Care is needed in making comparisons of GDP over time
   - which price is being used to value the goods and services?

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Nominal versus "real" prices

changes in overall prices will misrepresent the quantity of goods and services produced

Gross Domestic Product	2011	2012	2013	2014	2015
at market prices	1,769,921	1,822,808	1,892,193	1,973,043	1,983,288
real 2007 dollars	1,639,900	1,668,524	1,705,532	1,747,709	1,766,554

Source: Statistics Canada, Summary Tables:
http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/econ04-eng.htm
http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/econ05-eng.htm
Accessed September 19,2014

Population size and prices

using Purchasing Power Parity and per capita GDP

Country (2010)	Population (millions)	GDP (milions $, PPP)	Price (US=100)	GDP ($ per capita)
Brazil	201	1,961,701	106	8,324
Canada	33.8	1,440,818	109	37,110
China	1,330	11,698,415	49.8	7,746
Ghana	24.3	55,698	55.5	2,093
Japan	127	4,394,412	124	31,453
Taiwan	23.0	7,435,69	57.8	32,117
United States	310	14,447,100	100	41,376

Source: Penn World Tables, https://pwt.sas.upenn.edu/php_site/pwt71/pwt71_form.php, Accessed September 19, 2014

GDP as a social goal

1. Just what is the purpose of GDP? In what sense is it a measure of societal well-being? In what sense is it not?
2. What properties should a measure (or index) of well-being have?
3. What are the properties and uses of other measures of well-being?


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