# UN1105 Principles of Economics

## Recitation 8: Introduction to Macroeconomics, and GDP & CPI

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# Outline

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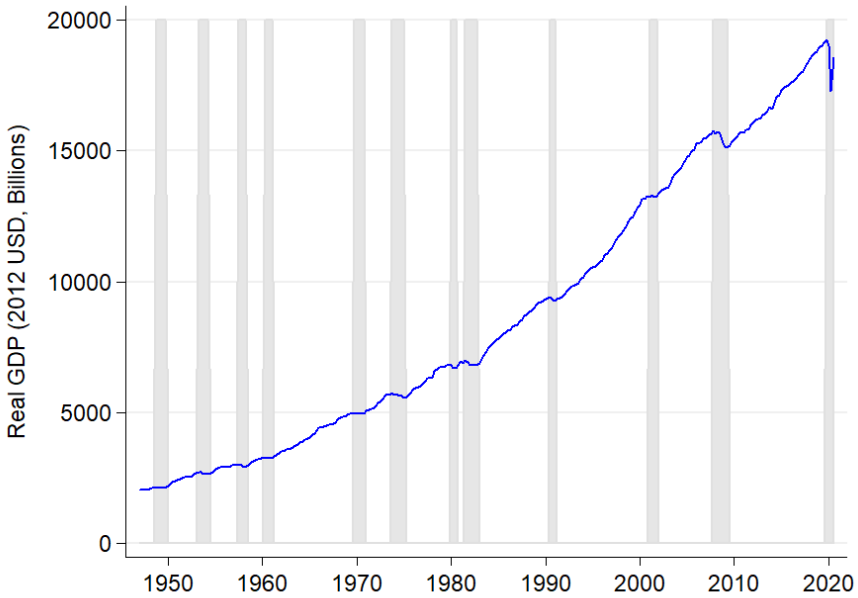
# Review of Concepts: Introduction (i)

- Micro: the study of the decisions of individual actors, and their consequences.
- Macro: the study of the aggregate economy, and how the actions of individual actors interact.
  - Note, not equal to the sum of its parts.
- Key areas of inquiry:
  - Business cycles: the short-run alternation between recessions and expansions.
  - Monetary and fiscal policy
  - Long-run economic growth
  - Inflation
  - International trade

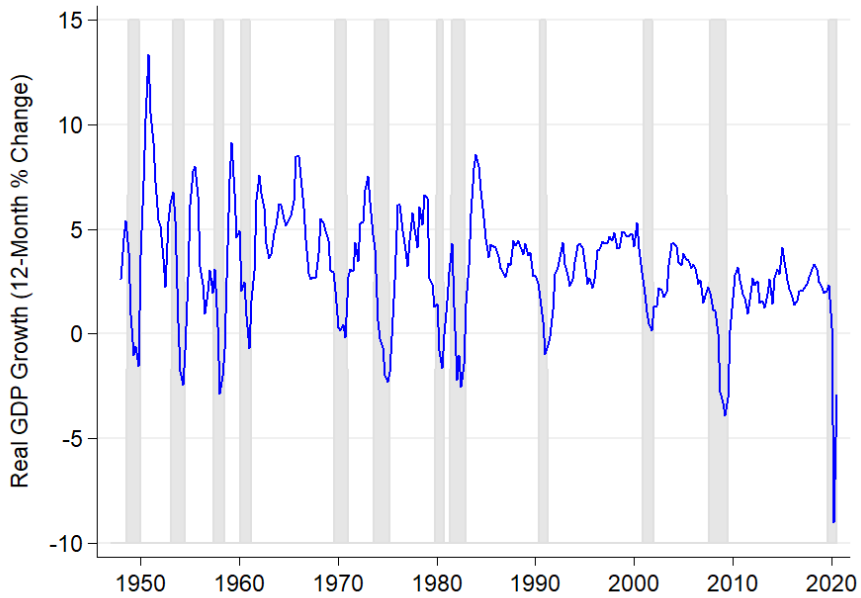
# Review of Concepts: Introduction (ii)

Figure 1: Output and Economic Growth

(a) Real Gross Domestic Product (RGDP)



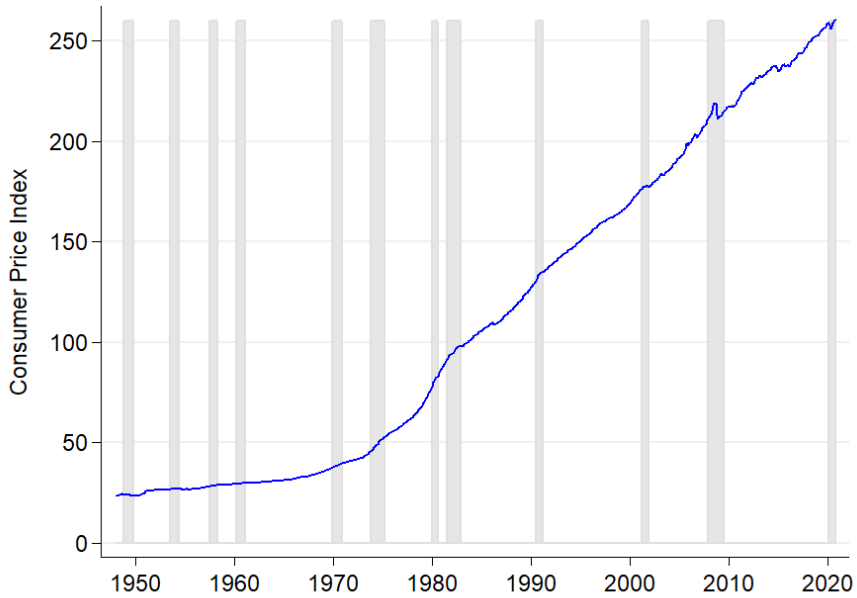

(b) Annual Percentage Change in RGDP



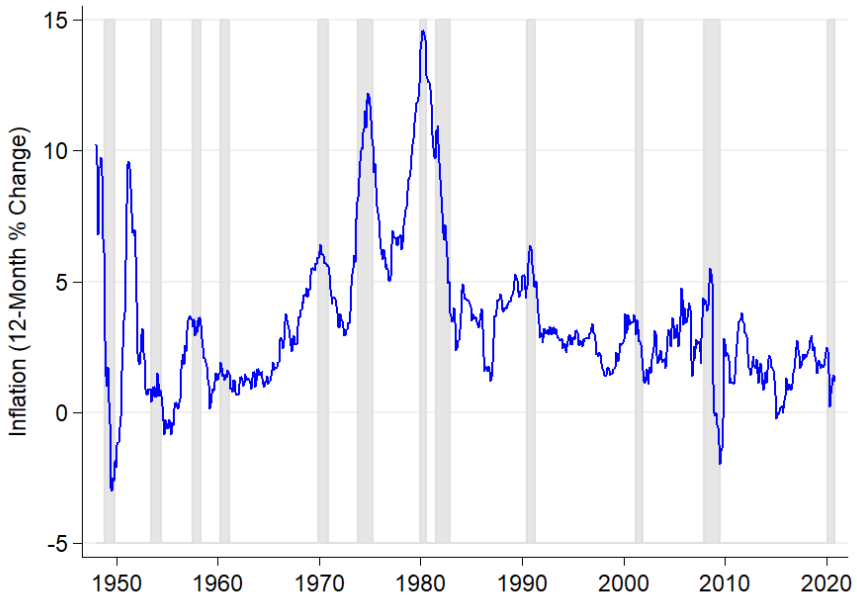
# Review of Concepts: Introduction (iii)

Figure 2: Price Level and Inflation

(a) Consumer Price Index (CPI)




(b) Annual Percentage Change in CPI



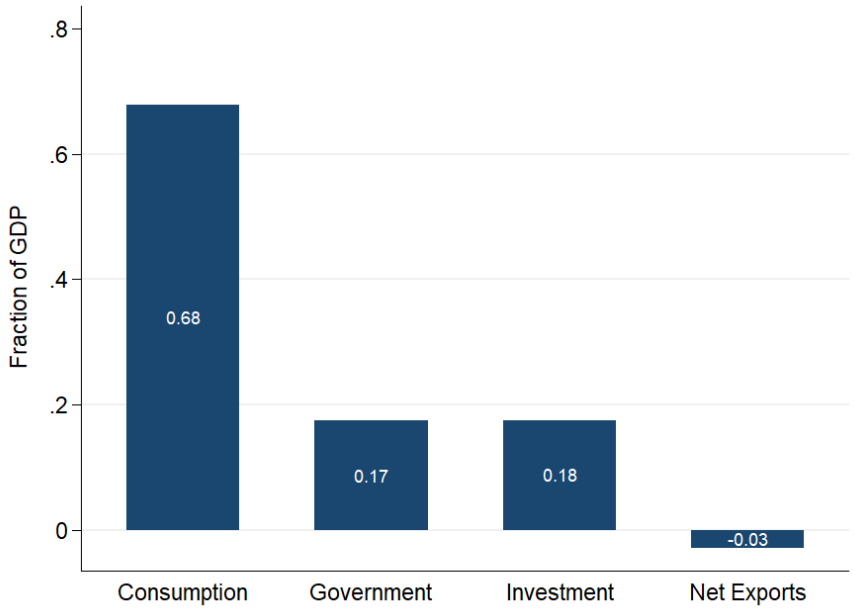
# Review of Concepts: Production (i)

- Desirable to have a measure of economic activity across space/time during an interval.
- Gross Domestic Product: the total value of all final G&S produced within an economy.
  - Considers only new domestic production, omits expenditure on used, intermediate, and foreign G&S.
  - Three methods for calculating.
    1. Value Added: add up the total value of the production of final G&S. Value added is equal to sales, less cost of intermediate goods.
    2. Expenditure: add up consumer, investment, and government spending, plus net exports, on domestically produced G&S. $GDP = C + I + G + (X - IM)$
    3. Income: add up the total factor income earned by households from firms in the economy. Includes wages, profit, interest, and rent.
  - Not a measure of welfare. Omits non-market transactions, and is silent on sustainability, economic bads, and equity.
- Related measures
  - Real GDP: the total value of all final G&S produced during an interval calculated using the prices of a selected base year. Thus a measure of productivity, accounting for prices changes.
  - GDP per capita: GDP normalized by population. A measure of average productivity.

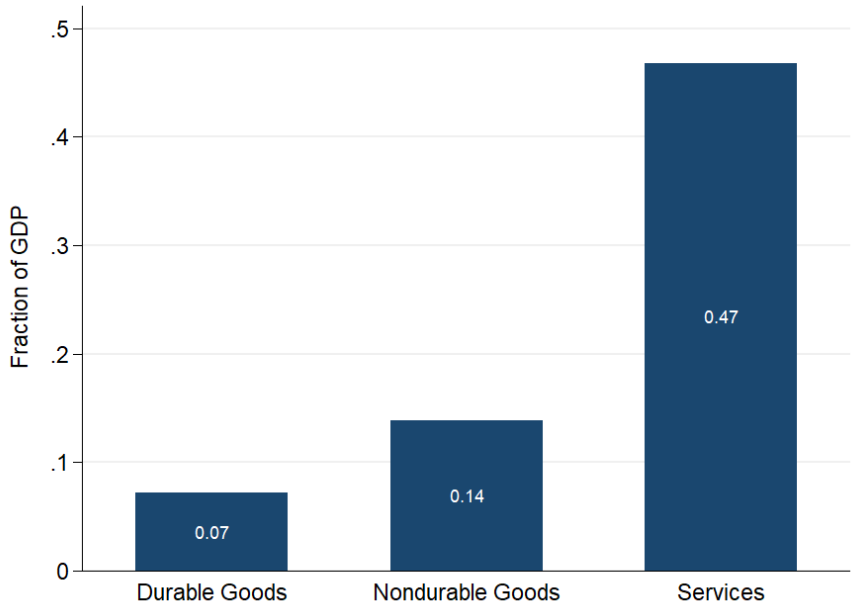
# Review of Concepts: Production (ii)

Figure 3: Composition of GDP, by Aggregate Expenditure, 2019

(a) GDP



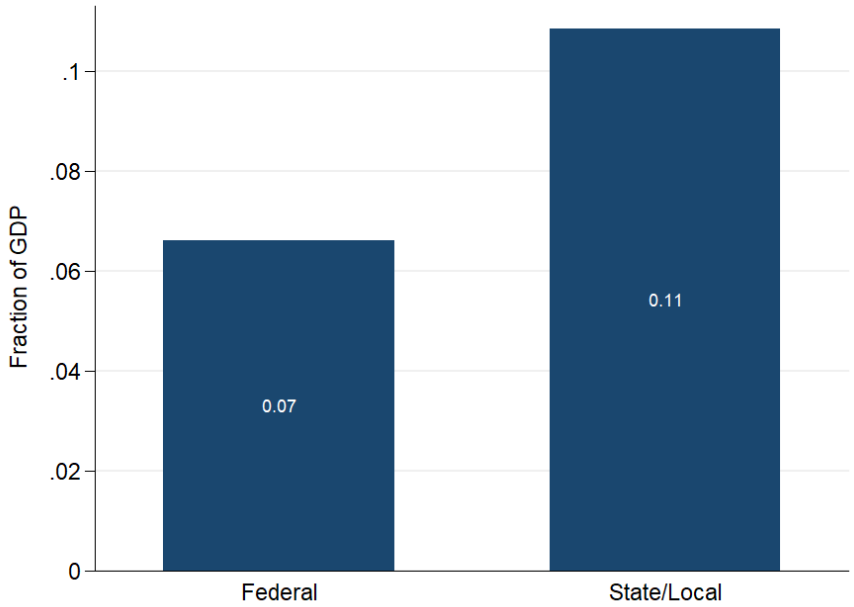

(b) Consumption



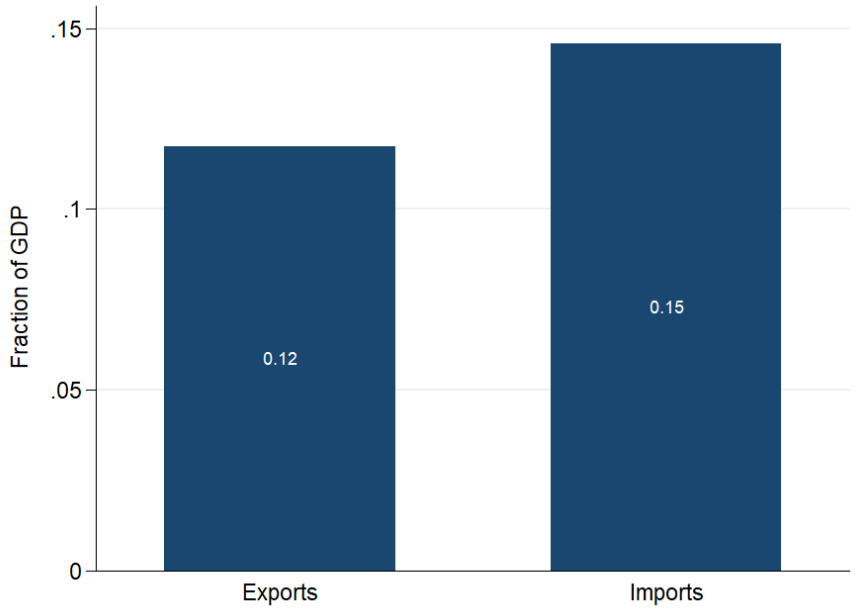
# Review of Concepts: Production (iii)

Figure 4: Composition of GDP, by Aggregate Expenditure, 2019

(c) Government




(d) Exports



# Review of Concepts: Prices (i)

- Similarly, we seek a summary measure of the overall level of prices in the economy.
- To measure average price changes for consumer G&S, we track changes to the cost of a typical consumers consumption bundle, which is known as the market basket.
- Consumer Price Index (CPI): measures the cost of the market basket of a typical urban American family, by year, relative to the base year(s) 1982-1984.
- Related:
  - Producer Price Index (PPI): Measures changes in the prices of goods purchased by producers. Includes steel, electricity, coal, etc.
  - GDP deflator: the ratio of nominal GDP to real GDP, by year.
- Inflation: the (annual) percent change in an official price index, typically CPI.

# Review of Concepts: Prices (ii)

Figure 5: Composition of the CPI Basket, by Expenditure, 2016 Category

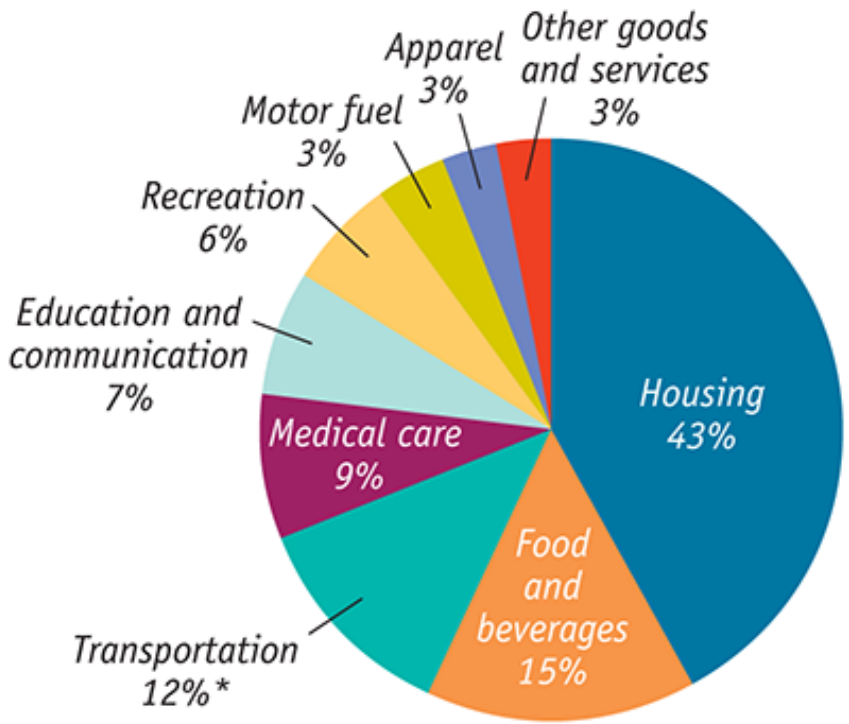



**FIGURE 7-4** Krugman/Wells, *Macroeconomics*, 5e,
© 2018 Worth Publishers
*Data from:* Bureau of Labor Statistics.

# Analytical Questions, Q1: K&W Problem 21.11

Each year, *The Economist* publishes data on the price of the Big Mac in different countries and exchange rates. The accompanying table shows some data from 2007 and 2016.

| Country | 2007 | | 2016 | | 2007-2016 |
|---|---|---|---|---|---|
| | Price of Big Mac (in local currency) | Price of Big Mac (in U.S. dollars) | Price of Big Mac (in local currency) | Price of Big Mac (in U.S. dollars) | Inflation (Local currency, %) |
| Argentina | ₱8.25 | $2.65 | ₱33.0 | $2.39 | 300% |
| Canada | C$3.63 | $3.08 | C$5.84 | $4.14 | 61% |
| Euro area | €2.94 | $3.82 | €3.72 | $4.00 | 27% |
| Japan | ¥280 | $2.31 | ¥370 | $3.12 | 32% |
| United States | $3.22 | $3.22 | $4.93 | $4.93 | 53% |

Use this information to answer the following questions.

(a) Where was it cheapest to buy a Big Mac in U.S. in 2007?

(b) Where was it cheapest to buy a Big Mac in U.S. dollars in 2016?

(c) Using the increase in the local currency price of the Big Mac in each country to measure the percent change in the overall price level from 2007 to 2016, which nation experienced the most inflation? Did any of the nations experience deflation?

# Analytical Questions, Q2: K&W Problem 22.04

The small economy of Pizzania produces three goods (bread, cheese, and pizza), each produced by a separate company. The bread and cheese companies produce all the inputs they need to make bread and cheese, respectively. The pizza company uses the bread and cheese from the other companies to make its pizzas. All three companies employ labor to help produce their goods, and the difference between the value of goods sold and the sum of labor and input costs is the firm's profit. The accompanying table summarizes the activities of the three companies.

| | Bread company | Cheese company | Pizza company | Sum |
|---|---|---|---|---|
| Cost of inputs | \$0 | \$0 | \$50 (bread), \$35 (cheese) | |
| Wages | \$15 | \$20 | \$75 | \$110 |
| Value of output | \$50 | \$35 | \$200 | |
| Value added | \$50 | \$35 | \$115 | \$200 |
| Profit | \$35 | \$15 | \$40 | \$90 |

(a) Calculate GDP as the value added in production. Value added = value of output, less cost of inputs.

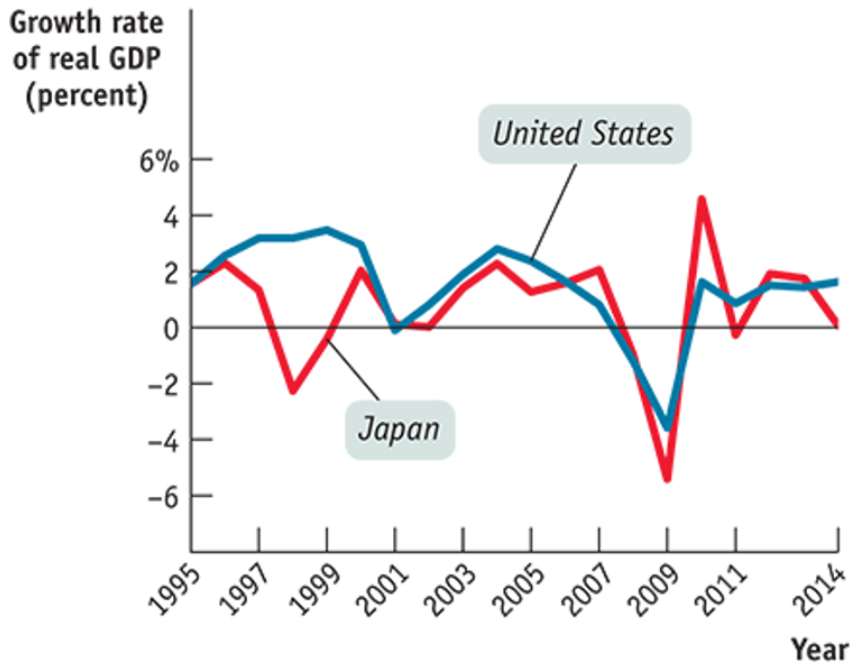
(b) Calculate GDP as spending on final goods and services. Only one final good (pizza) as the bread and cheese are exclusively intermediate goods.

(c) Calculate GDP as factor income. Sum of wages, profit, interest and rent.

# Short-answer Questions, Q3: K&W Problem 21.06

In the 1990s there were some dramatic economic events that came to be known as the Asian financial crisis. A decade later similar events came to be known as the global financial crisis. The accompanying figure shows the growth rate of real GDP in the United States and Japan from 1995 to 2014. Using the graph, explain why the two sets of events are referred to this way.

Figure 6: Real GDP Growth, USA v Japan,




*Data from:* Federal Reserve Bank of St. Louis.

In the late 1990s, Japanese real GDP slumped, but U.S. growth continued without interruption. So the recession of the late 1990s took place only in Asia—it was specifically an Asian crisis. By contrast, the slump in the late 2000s affected real GDP in both Japan and the United States, so it was a global crisis.

# Short-answer Questions, Q4: K&W Problem 21.XX

In a typical business cycle recession, the unemployment rate rises and the inflation rate falls. Explain these two trends.

Recessions are typically the result of a decrease in consumer spending. When consumers buy fewer goods and services, firms produce fewer of those goods and services. When firms decrease production, they usually decrease employment, and the rate of unemployment eventually rises. The weak consumer spending can leave a surplus of unsold goods across the economy. A surplus of unsold goods (or excess inventories) is cleared when prices fall. Overall prices may not fall (deflation), but they may rise more slowly (disinflation), and so the rate of inflation begins to fall.

# Short-answer Questions, Q5: K&W Problem 22.XX

Explain why each of the following transactions would or would not be counted in the GDP of the United States.

(a) American auto producer Ford builds a factory in Canada.
No. This is investment spending but not in the United States.

(b) You buy a blueberry muffin at a coffee shop.
Yes. This is consumer spending.

(c) A Ford dealership in Ohio has 15 unsold new cars at the end of 2011.
Yes. These unsold cars would be counted as unsold inventory in investment spending.

(d) Japanese auto producer Honda builds a factory in Indiana.
Yes. A factory built in the United States counts as investment spending in U.S. GDP. It doesn't matter where the builder is headquartered.

(e) You buy a new pair of pants produced at a factory in Honduras.
No. You did purchase the pants in the United States, which does count as consumption spending, but this garment was produced in a foreign country.

(f) You mow your uncle's yard and he gives you \$10 for a job well done.
No. In an accountant's perfect world, this sort of cash transaction would count because you have produced a service and received payment for it. However, 4GDP tabulations miss almost all of these small cash transactions.