

Problem Set 2: Labor, GDP, and Limitations

ECO 1510 · Principles of Macroeconomics | Methodist University

Due: 10/2 by 11:59 pm | Submit via Canvas

This assignment requires the use of FRED data, the supplemental readings assigned in class: Robert Higgs, “The Myth of U.S. Prosperity During World War II,” and concepts from the textbook/lectures.

- i. You will retrieve real GDP per capita and the female labor force participation rate from FRED, constructing a graph tracing their joint evolution since 1950
- ii. Then you will use the data to evaluate a fundamental limitation of GDP as a measure of economic welfare
- iii. Your written responses should demonstrate command of the GDP measurement, labor force, and economic wellbeing concepts covered in class.

Overview

GDP measures the market value of final goods and services produced in an economy. What it does not measure is equally important. Production that occurs outside of market transactions (household labor, childcare, subsistence farming, informal economic activity) is invisible to GDP accounting regardless of its real economic value.

Changes in measured GDP can reflect genuine increases in output, or they can reflect the monetization of activity that was already occurring but not previously counted. Distinguishing between these two interpretations requires thinking carefully about what GDP is actually measuring and what it is not. The large-scale entry of women into the paid labor force over the second half of the twentieth century is one of the most significant economic transformations in modern history, and it raises this question in a way that is directly testable with data.

Supplemental Reading

Read the required supplemental reading for Module 3: **Robert Higgs, “The Myth of U.S. Prosperity During World War II,”** available via the link in your course supplemental reading list. This reading is required and directly supports your response to Question 2. You do not need to retrieve additional FRED data for this section.

During World War II, measured US GDP rose sharply as military production replaced civilian consumption. Higgs argues that this increase was largely illusory as a measure of economic welfare; that what looked like prosperity in the national accounts masked a significant deterioration in the living standards of American households.

His critique was essentially that GDP counts all market output equally, regardless of whether that output actually improves the wellbeing of the people producing it. As you work through the questions below, consider what this argument shares with the labor force participation story your data tells. The mechanism is different, but the underlying problem with GDP as a welfare measure is the same. You will need to identify and explain that connection yourself.

Data Preparation

Complete the following steps in order. Include your completed graph in your submission as a screenshot or exported image.

1. Go to <https://fred.stlouisfed.org/> and search for "Real Gross Domestic Product Per Capita." Select the series A939RX0Q048SBEA (Chained 2017 Dollars, Quarterly, Seasonally Adjusted Annual Rate).
2. Click "Edit Graph" then "Add Line." Search for "Labor Force Participation Rate – Women" and select LNS11300002 (Percent, Monthly, Seasonally Adjusted). Click "Add data series."
3. Under "Edit Lines" change the frequency to "Quarterly" and select "End of Period" as the Aggregation method.
4. Click on the "Format" tab. For "Line 2" click "customize" and select "Right" for the Y-axis position.
5. Set the date range to begin January 1, 1950. Leave the end date as the most recent available data.
6. Download or screenshot your completed graph showing both series and include it in your submission.

Assignment

Answer each of the following questions in complete sentences. There is no minimum for answers, but minimal effort will not result in maximum credit. If you need further clarification on this, refer to the grading philosophy in the syllabus. Use economic reasoning and terminology from class. Imprecise or purely descriptive answers will not earn full credit.

1. Using your graph, describe the trend in female labor force participation from 1950 to the present.
 - i. Identify the approximate period of most rapid increase, describe what happened to real GDP per capita over the same period
 - ii. Explain what the expenditure approach to GDP measurement implies about why an increase in labor force participation would show up as an increase in measured output.
 - iii. What specifically changes in the GDP accounting when a person transitions from unpaid household production to paid market work?
2. Using the Higgs reading and the GDP measurement concepts from class, explain what problem Higgs identifies with using wartime GDP as evidence of economic prosperity. Then identify the specific conceptual error that Higgs's critique and the labor force participation story in your data have in common. Your answer should use his argument as a lens to evaluate what your graph is actually showing.
3. GDP systematically excludes non-market production.
 - i. Explain what this exclusion implies about the direction of bias in pre-1960s GDP estimates relative to true economic output.
 - ii. Does the same bias apply to GDP measurement in less developed economies today? Use the concept of non-market production to explain why GDP comparisons between high-income and low-income countries may overstate the true gap in economic output between them.
4. Your graph shows that real GDP per capita rose substantially over the second half of the twentieth century, a period that coincides with a large increase in female labor force participation.
 - i. Evaluate how much of that measured GDP growth represents a genuine increase in economic output versus a result of previously unrecorded production entering the market.
 - ii. Your response should take a clear position, engage seriously with the strongest counterargument to your view, and use specific evidence from your graph and the Higgs reading to defend your conclusion.

There is no single correct answer, but the strongest responses will be precise about the measurement problem, honest about what the data can and cannot tell us, and grounded in the economic concepts covered in class.

Full credit requires precise use of economic terminology and explicit connection to course concepts. Responses that describe the data without economic explanation will receive partial credit at best.