Money for Nothing: Economic Affluence in Postwar America

Lesson Authors

Mike Kaiman, Social Studies Teacher, Timberland High School, Wentzville, Missouri
Mark Bayles, Senior Economic Education Specialist, Federal Reserve Bank of St. Louis

Advance Placement® (AP) U.S. History Curriculum Alignment (see page 30)

Standards and Benchmarks (see pages 31)

Lesson Description

History students are familiar with the concept of post-World War II economic affluence. This lesson allows students to dig deeper into elements of the postwar economic boom through the mid-1960s to see that a growing economy occurs at all levels and affects people in different ways. First, students familiarize themselves with basic economic concepts such as gross domestic product (GDP) as measured by an index and per capita. Next, using FRED® (Federal Reserve Economic Data), students analyze and create their own arguments as to which economic forces contributed most directly to the overall growing economy. Finally, students evaluate the historical interpretations of the impact of postwar economic affluence on the United States by responding to two secondary source descriptions of the era.

Grade Level

10-12

Economic Concepts

Disposable income
Index
Mean family income
Nominal
Per capita
Personal consumption expenditures (PCE)
Real
Real gross domestic product (GDP)
Standard of living

Objectives

Students will

- describe how GDP and per capita disposable personal income measure the state of the economy,
- use FRED® to analyze and manipulate primary economic data to develop a historical argument,
- examine and evaluate the validity of secondary source historical interpretations, and
- increase their data literacy.

Time Required

Approximately two 50-minute class periods

Materials

- Online access for the class to build FRED® graphs and view the FRED® Public Data List at https://fredaccount.stlouisfed.org/public/datalist/6983
- *Visual 1: Economics Terms*
- *Visual 2: Graph Examples*
- *Handout 1: Money for Nothing: Economic Affluence in Postwar America*, one copy for each student
- *Handout 1: Money for Nothing: Economic Affluence in Postwar America—Answer Key*
- *Handout 2: Excerpts*, one copy for each student

Procedure

FRED® Graph Challenge: GDP

1. Explain to the students that the purpose of this activity is to try and understand how the rise of middle-class economic affluence after World War II through the mid-1960s had a profound impact on the state of the national economy. Individually they will conduct research using economic data to evaluate which factors helped expand the American economy the most in the postwar world.

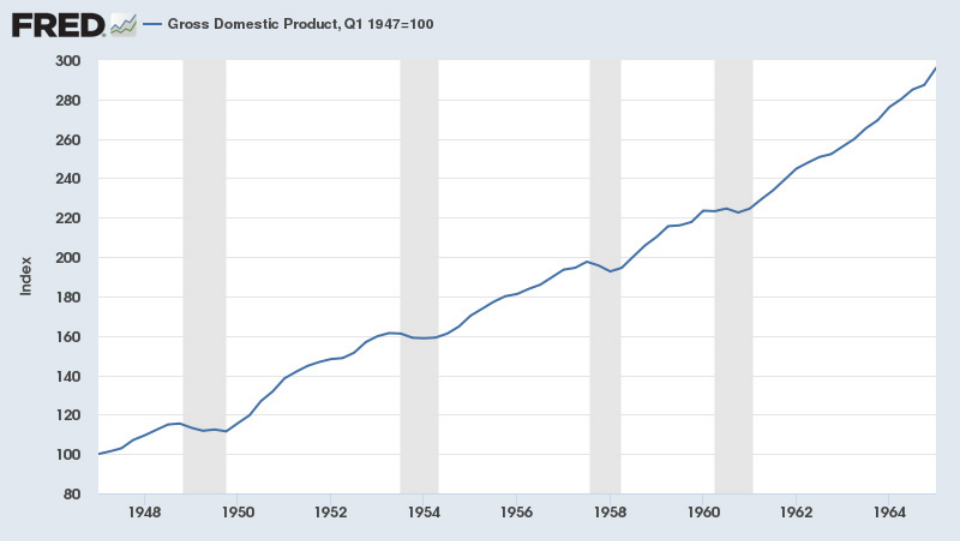
2. Distribute a copy of *Handout 1: Money for Nothing: Economic Affluence in Postwar America* to each student.

   Instruct the students to open the data list noted in #1 on Handout 1.

3. Once the students have opened the link, tell them that the list is of various economic data series that include data for 1947 to 1965. (**NOTE:** The data list may be copied to your own, free, FRED® account for future easy reference by clicking the "Save as My Data List" link under the main title, logging in, and then clicking the "Actions" button and selecting "Copy.")

   Demonstrate for the students the two options for modifying the date range (as explained in #2 of Handout 1).

   Instruct the students to complete #2 and #3 on Handout 1. (The graph created should look like the GDP [gross domestic product] graph below.) Allow time for students to work and then review the answers using Handout 1: Answer Key.



GDP

NOTE: Shaded areas indicate recessions as determined by the NBER.
SOURCE: U.S. Bureau of Economic Analysis. Retrieved from FRED®, Federal Reserve Bank of St. Louis.

4. Explain that an **index** is a tool economists use to show overall growth changes. Numbers in an index are expressed in terms of a base year value of 100; for example, a value of 105 means the variable measured by the index has risen by 5 percent compared with the base year. So, if an index grows to 200 over a given period, what is measured has doubled.

   Instruct the students to complete #4 and #5 on Handout 1. Allow time for students to work and then review the answers using Handout 1: Answer Key.

5. Explain that the data on the GDP graph they created are measured in ***nominal*** dollars, which means that the dollar amounts are measured in current prices. This measurement does *not* account for inflation, which will skew the overall value of a dollar over time. There are other GDP graphs in FRED® that measure GDP in ***real*** dollars, which means that the data *do* account for inflation. It is important to know the difference between nominal and real. Later in this lesson they will look at other graphs that may use either measure.

FRED® Graph Challenge: Per Capita Real Disposable Personal Income and Changes in the U.S. Standard of Living

6. Display *Visual 1: Economics Terms*.

   Instruct the students to complete #6 on Handout 1. Allow time for students to work and then review the answers using Handout 1: Answer Key.

7. Tell the students they will now search for and manipulate a FRED® data series to create a new graph that shows **per capita disposable personal income** in an effort to better show the **standard of living** for American families.

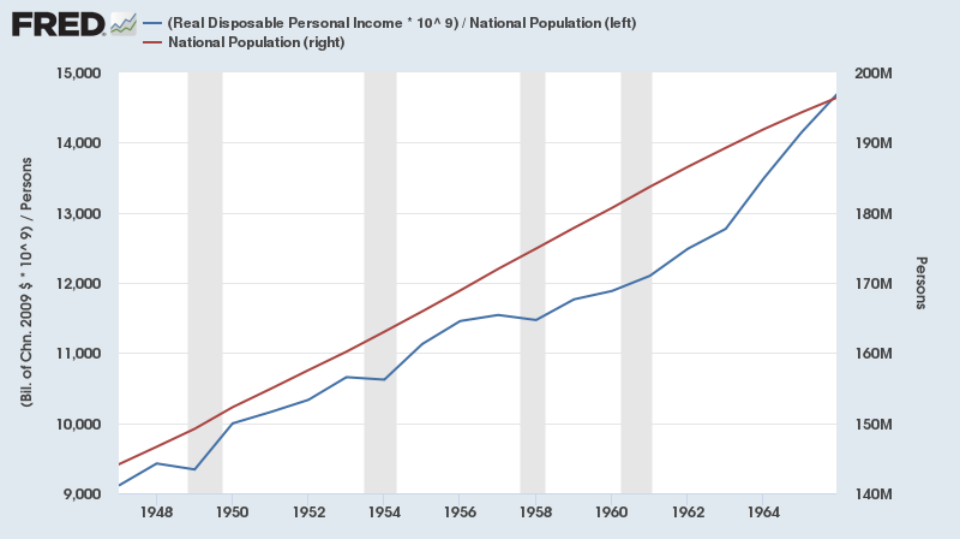
   Instruct the students to complete #7 on Handout 1. Allow time for students to work and then discuss the following:

   - What are the units of the graph you just created? (*Billions of chained 2009 dollars*)
   - How does this graph differ from the previous graph? (*It shows real dollars instead of nominal dollars, so it measures actual growth by adjusting for inflation.*)

8. Tell the class that they will now manipulate the FRED® graph to

   - add the total U.S. population to the graph and
   - edit the graph to calculate U.S. per capita disposable personal income after World War II.

   Instruct the students to complete #8 to #14 on Handout 1. (The graph created should look like the Per Capita Real Disposable Personal Income graph below.) Allow time for students to work and then review the answers using Handout 1: Answer Key.



Per Capita Real Disposable Personal Income

NOTE: Shaded areas indicate recessions as determined by the NBER.
SOURCE: U.S. Bureau of Economic Analysis and U.S. Bureau of the Census. Retrieved from FRED®, Federal Reserve Bank of St. Louis.

FRED® Public Data Series Analysis

9. Tell the students they will now return to the data list viewed at the beginning of the lesson.

   First review the directions in #15 of Handout 1. Remind the students that when they are filling in the table they should describe the data presented in their own words. For example, the dataset "Mean Family Income in the United States" measures the combined income (wages, salaries, retirement benefits, food stamps, etc.) of all people living in a single household. For answering the correlation/causation column, strongly suggest that they add GDP to each graph to visualize the relationship in a clearer manner.

   Instruct the students to complete the chart, "FRED® Public Data Series Analysis" (on the last page of Handout 1). Allow students time to work and then, if desired, review the chart using Handout 1: Answer Key.

FRED® Graph Challenge: Make Your Own Graphs Showing Economic Affluence

10. Explain that the students are now to make two graphs they think shows the best relationship between a growing overall economy—based on GDP—and the specific economic indicators in the data list. GDP must be included on each graph as well as one to three other datasets to show the correlation-causation relationship. Remind the students that when they add more than one data series to a graph, they may need to manipulate the *y*-axis of one or more of the data series from left to right to make the graph understandable.

    Next, explain to the students that FRED® allows users to make different types of graphs and that each type has a general purpose as follows:

    - A line graph shows a change in one or more economic data series over time.
    - A bar chart compares related data series.
    - An area chart can be used to show the volume of one or more measurements.
    - A scatterplot can show correlation.
    - A pie chart compares parts of a whole.

11. Review the directions in #16 of Handout 1.

    Tell the students they are to share their graphs with you by one of the methods noted in #17 on Handout 1.

12. Display *Visual 2: Graph Examples*. Tell the students that Visual 2 shows actual student-produced graphs. Some are examples of what a proper graph looks like and others show common mistakes students make. Discuss each example as follows:

    Example 1

    - Which data series are used? (*GDP and Real Mean Family Income*)
    - Why might the datasets in this graph be misleading? (*GDP is stated in nominal terms, while Mean Family Income is stated in real terms. This means that the GDP data is not*

adjusted for inflation, while Mean Family Income is.) Emphasize to the students that comparing real and nominal in the same graph can distort the data and that they should not do this when making their own charts.

- What units are used? (*The student changed the units to "percentage change" to better show correlation.*)
- Is this graph an accurate reflection of a causal relationship between family income and an overall growing economy? (*Answers may vary but most students should agree that the lines follow each other closely, signaling at the very least a correlate, if not a causal, relationship.*)

Example 2

- Which data series are used? (*GDP; Personal consumption expenditures [PCE]: Durable goods: Motor vehicles and parts; Real Disposable Personal Income: Per Capita; and Real Mean Family Income*)
- What units are used? (*An index*)
- Does the graph clearly show an expanding postwar economy? (*Answers may vary but the overall trend lines do show an expanding economy.*)
- Point out that the student used 1965, the end of the sample period, as the base year for the index. As a result, it does not show growth in the way it is typically viewed, which can make it difficult to interpret. It is better to use 1953 as the base year because that is the first year of the shortest series (*Real Mean Family Income*).

Example 2 Corrected

- This graph uses 1953 as the base year.
- Which one of the data lines best illustrates the negative effects of a recession, as indicated by the gray recession bars on the graph? (*Personal consumption expenditures [PCE]: Durable goods: Motor vehicles and parts, which shows purchases of big ticket items, declines during recessions.*)

Example 3

- Which data series are used? (*Real Disposable Personal Income: Per Capita; GDP; and PCE: Durable goods: Motor vehicles and parts*)
- What units are used? (*An index*)
- What error is there in the presentation of the data? (*The two* y*-axes use different ranges, which skews the presentation.*)

Example 3 Corrected

- This graph corrects the problem by using only one *y*-axis.

Example 4

- Which data series are used? (*Mean Family Income and GDP*)
- What units are used? (*Current dollars and billions of dollars*)
- Why does the graph look odd and what can be done to present the data in a clearer manner? (*The student left both datasets on the left* y*-axis, which causes one of the datasets to look extremely flat.*)

Example 4 Corrected

- This graph corrects the problem by using both axes.

13. Instruct the student to complete #16 and #17 on Handout 1 and then allow time for students to work. When the assignment is completed, you may want to allow time for students to share their graphs with the class.

14. Distribute a copy *Handout 2: Excerpts* to each student. Explain to the students that historians and economists often have differing opinions and interpretations of the impact economic forces have on a country and its people. They will now read and evaluate excerpts that provide such an example.

    Instruct the students to complete #18 on Handout 1. Allow time for students to work and then discuss their answers using Handout 1: Answer Key.

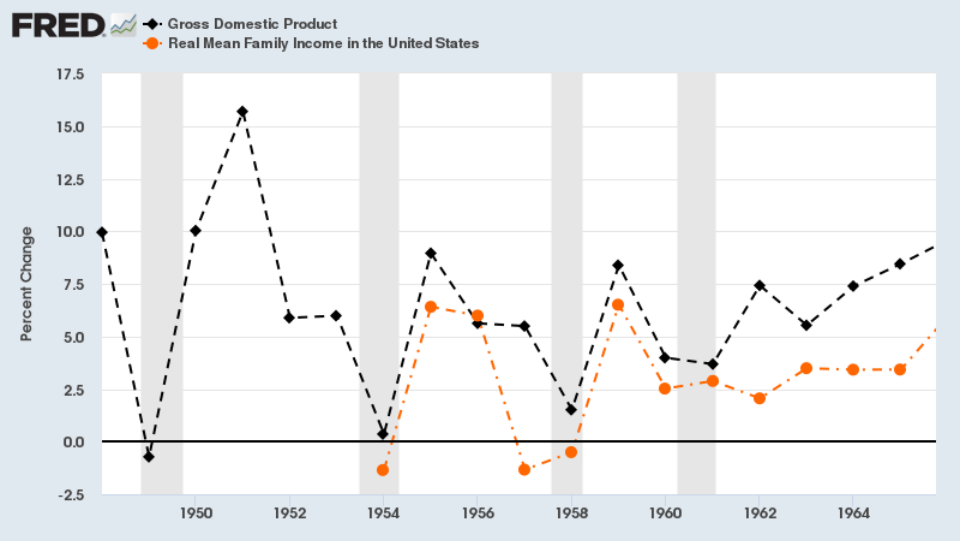
Visual 1: Economics Terms

Disposable income: The amount of a person's paycheck that is available to spend or save. Usually this is calculated by taking the gross pay minus mandatory withholdings, such as for personal income tax and Social Security.

Per capita: Per person. Determined by dividing the total quantity by the total population.

Standard of living: A measure of the goods and services available to each person in a country; a measure of economic well-being. Also known as per capita real GDP.

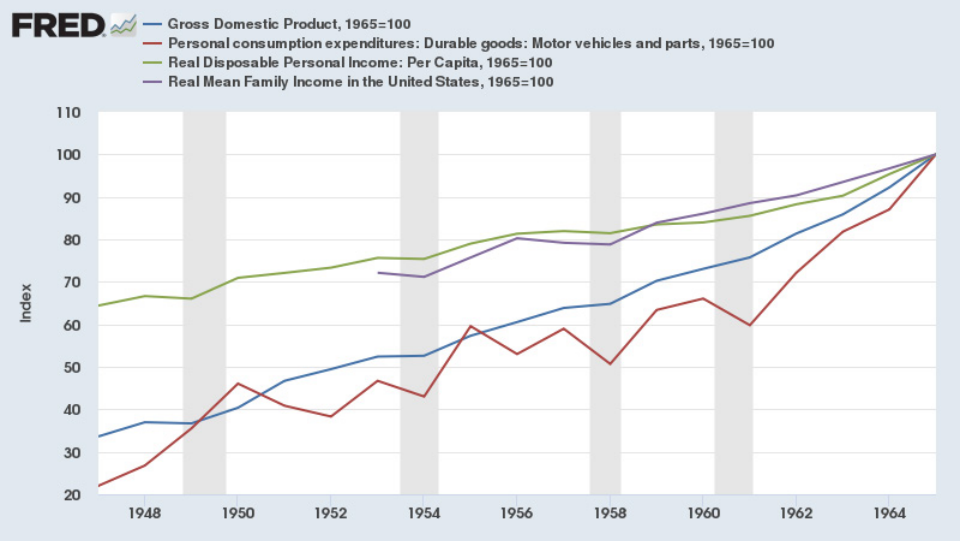
Visual 2: Graph Examples (page 1 of 4)



Example 1

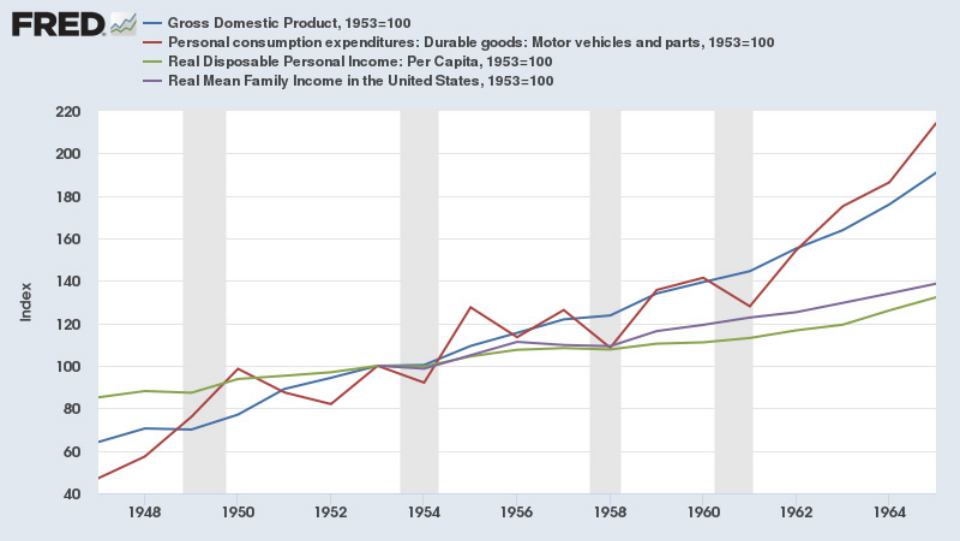
NOTE: Shaded areas indicate recessions as determined by the NBER.
SOURCE: U.S. Bureau of Economic Analysis and U.S. Bureau of the Census. Retrieved from FRED®, Federal Reserve Bank of St. Louis.

Visual 2: Graph Examples (page 2 of 4)



Example 2

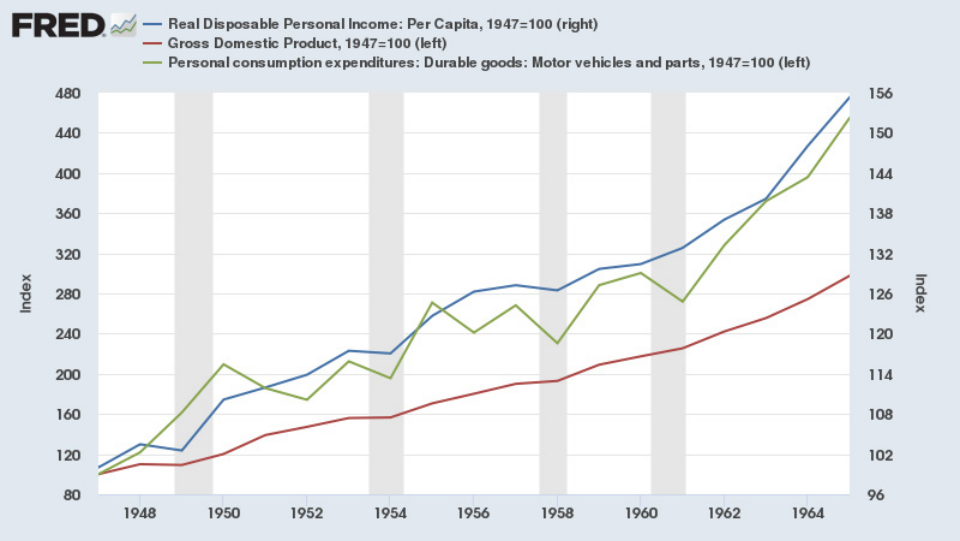
NOTE: Shaded areas indicate recessions as determined by the NBER.
SOURCE: U.S. Bureau of Economic Analysis and U.S. Bureau of the Census. Retrieved from FRED®, Federal Reserve Bank of St. Louis.



Example 2 Corrected

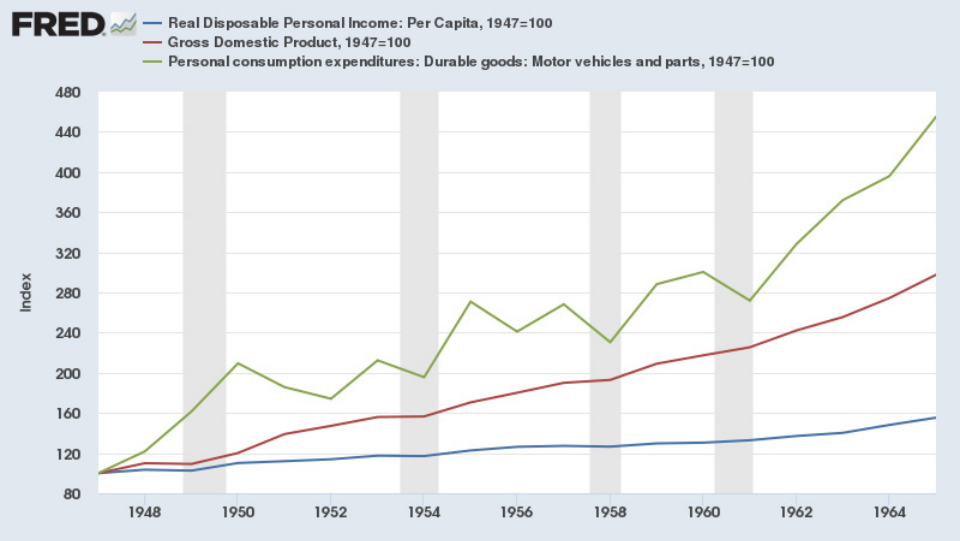
NOTE: Shaded areas indicate recessions as determined by the NBER.
SOURCE: U.S. Bureau of Economic Analysis and U.S. Bureau of the Census. Retrieved from FRED®, Federal Reserve Bank of St. Louis.

Visual 2: Graph Examples (page 3 of 4)



Example 3

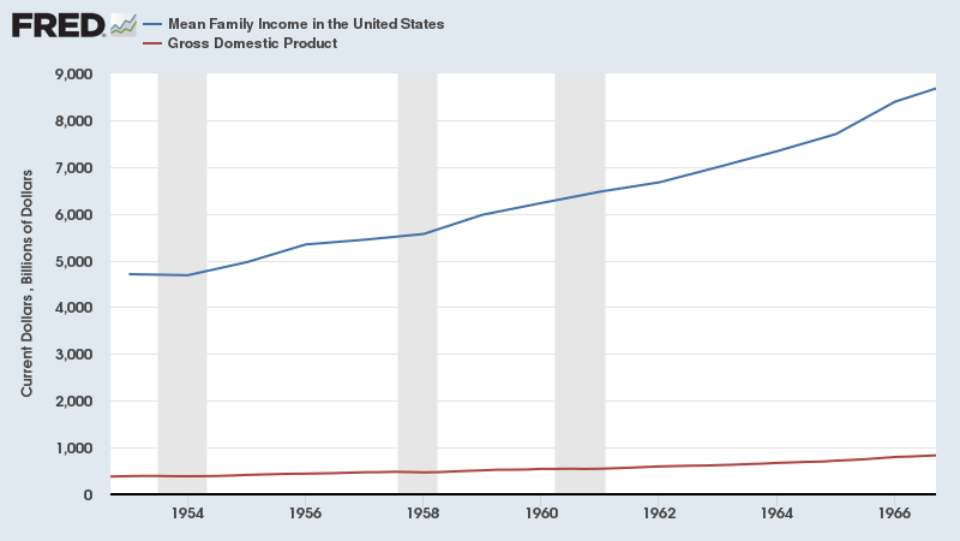
NOTE: Shaded areas indicate recessions as determined by the NBER.
SOURCE: U.S. Bureau of Economic Analysis. Retrieved from FRED®, Federal Reserve Bank of St. Louis.



Example 3 Corrected

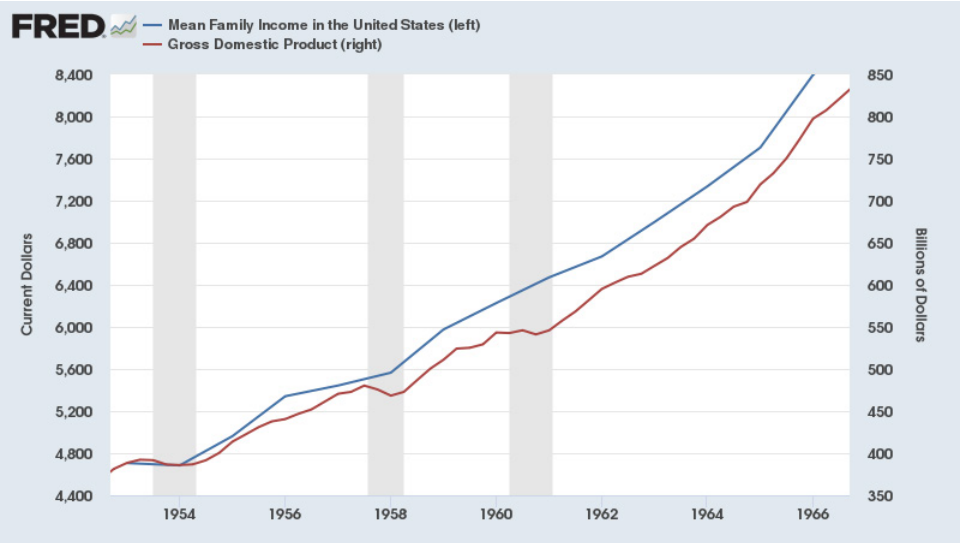
NOTE: Shaded areas indicate recessions as determined by the NBER.
SOURCE: U.S. Bureau of Economic Analysis. Retrieved from FRED®, Federal Reserve Bank of St. Louis.

Visual 2: Graph Examples (page 4 of 4)



Example 4

NOTE: Shaded areas indicate recessions as determined by the NBER.
SOURCE: U.S. Bureau of Economic Analysis and U.S. Bureau of the Census. Retrieved from FRED®, Federal Reserve Bank of St. Louis.



Example 4 Corrected

NOTE: Shaded areas indicate recessions as determined by the NBER.
SOURCE: U.S. Bureau of Economic Analysis and U.S. Bureau of the Census. Retrieved from FRED®, Federal Reserve Bank of St. Louis.

Handout 1: Money for Nothing: Economic Affluence in Postwar America

Name: _____ Hour: _____

Fred® Graph Challenge: GDP

1. Go to the data list at https://fredaccount.stlouisfed.org/public/datalist/6983. (It will look like Figure 1.)

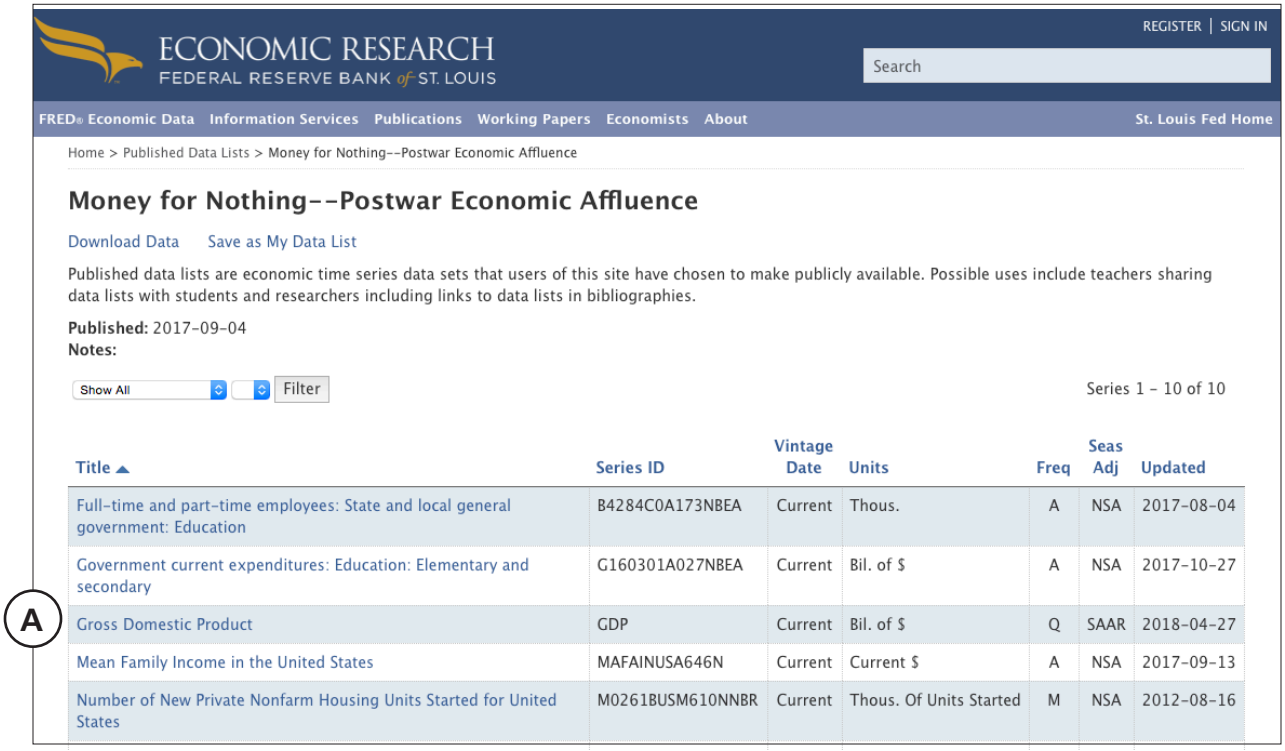


Figure 1

2. Click on "Gross Domestic Product" (Figure 1A) to open that graph. Next, modify the date range as follows to show only the years 1947-1965:
   a. OPTION 1: Move the slider bar under the *x*-axis.
   b. OPTION 2: Type "1965-12-31" (December 31, 1965) into the date box (Figure 2A) next to the orange "EDIT GRAPH" button.

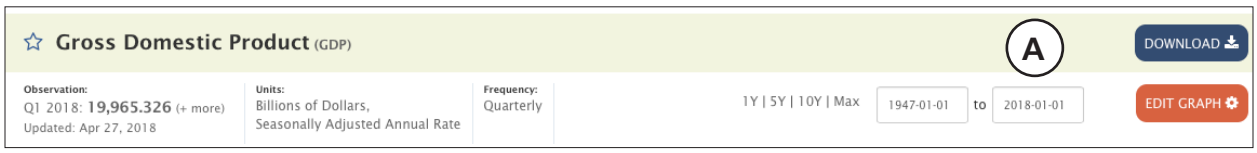


Figure 2

3. Answer the following questions based on the graph you just created:

   a. What are the units of the graph?

   b. Measured in these units, how much did GDP increase between 1947 and 1965?

4. Convert the graph to an index with "1947-01-01" (January 1, 1947) as the start date as follows:

   - Click the "EDIT GRAPH" button in the top-right corner.
   - From the "Units" dropdown menu, select the last option, "Index (Scale value to 100 for chosen date)" (Figure 3A). Note that FRED® automatically sets the index to begin on January 1, 1947 (Figure 3B).
   - To close the panel, click the "X" in the top-right corner of the panel (Figure 3C).

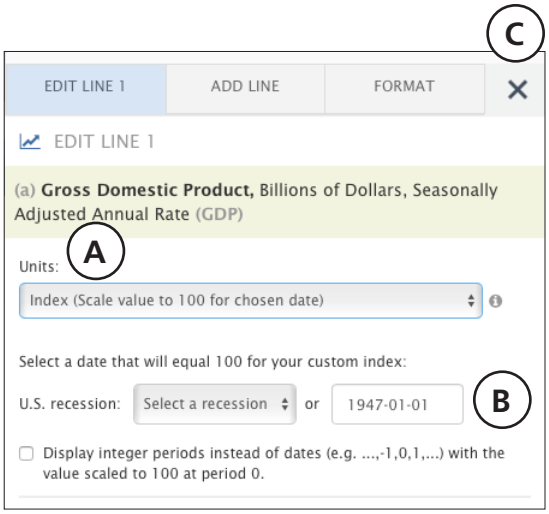


Figure 3

5. Answer the following questions based on the graph you just created:

   a. How much did the index increase between 1947 and 1965?

   b. What factors may have contributed to this period of sustained growth after World War II?

   c. What general conclusions can be drawn about the overall state of the American economy during the postwar period?

FRED® Graph Challenge: Per Capita Real Disposable Personal Income and Changes in the U.S. Standard of Living

6. Review *Visual 1: Economics Terms* (displayed by the instructor) and answer the following questions:

   a. What kinds of goods and services might you purchase with disposable personal income?

b. For what might you save a portion of your disposable personal income?

c. How might changes in disposable personal income affect the national economy?

d. Why would measuring economic data, such as disposable personal income, using a per capita measurement as opposed to total dollars be a better way to determine the standard of living of a country?

7. Create a new graph as follows:

- Open a new browser tab and go to http://fred.stlouisfed.org.
- In the search bar, type "real disposable personal income" and hit return.
- From the list that appears, click the data series labeled "Billions of Chained 2009 Dollars, Quarterly, Seasonally Adjusted Annual Rate" beginning Q1 1947 to open the graph for that series. (**NOTE:** The noted data series may not be the first option under the main heading.)

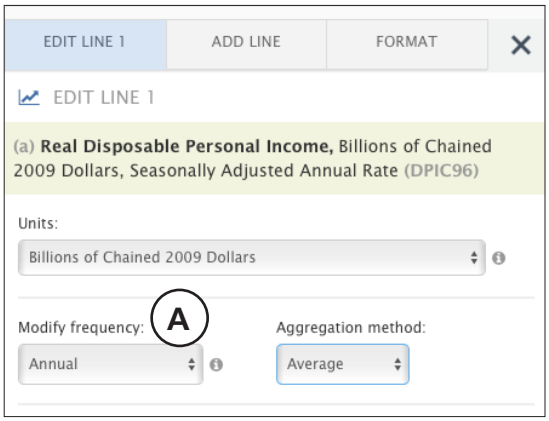


Figure 4

- Adjust the date range to show only 1947 to 1965 (1947-01-01 to 1965-12-31).
- In the "EDIT GRAPH" panel, go to the "Modify frequency" dropdown menu and select "Annual" (Figure 4A).
- Close the panel.

8. To view changes in the standard of living, you need to view real disposable personal income relative to the population. First, add the population data series as follows:

- Click the "EDIT GRAPH" button.
- Click the "ADD LINE" tab (Figure 5A) and type "POPH" in the search box (Figure 5B). ("POPH" is the FRED® series ID code for the data series "National Population, Annual, Persons, Not Seasonally Adjusted, 1900-1999.") Select the data series shown, "National Population," and click "Add data series" (Figure 5C).

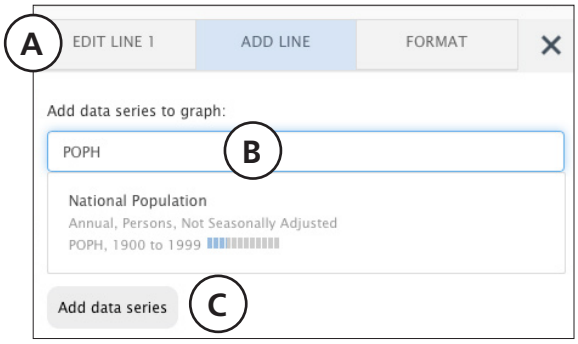


Figure 5

9. Now change the axis for the population data as follows:
   - In the "EDIT GRAPH" panel, click the "FORMAT" tab.
   - Under "LINE 2," change the "Y-Axis position" from "Left" to "Right" (Figure 6A).
   - Close the panel. The graph now displays Real Disposable Personal Income on the left axis and the National Population on the right axis.

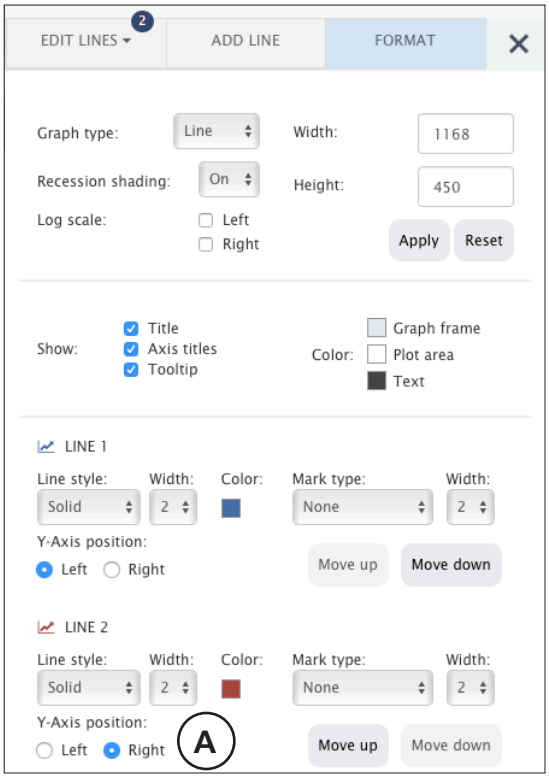


Figure 6

10. Answer the following questions based on the graph you just created:
    a. What is now measured on the left *y*-axis and what are the units?

    b. What is now measured on the right *y*-axis?

    c. Why is it important for the graph to look this way?

11. You will now use the FRED® formula tool to better visualize real increases in the U.S. standard of living by calculating per capita real disposable personal income. Manipulate the data using exponents as follows:
    - Click the "EDIT GRAPH" button.
    - Click the "EDIT LINES" tab and select "EDIT LINE 1."
    - In the "Customize Data" bar, type "POPH" (Figure 7A), select "National Population," and then click "Add" (Figure 7B).

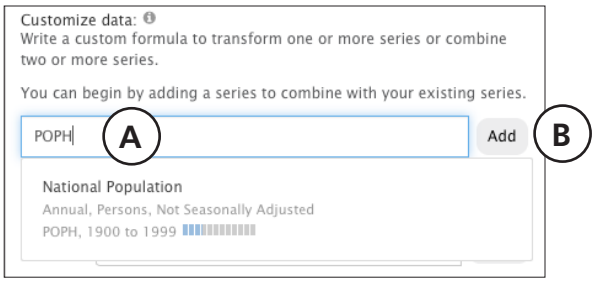


Figure 7

12. In the "Formula" bar, type "(a*10^9)" (Figure 8A) and click "Apply." Notice (on the left *y*-axis) that the amount of real disposable personal income increased by a factor of 1 billion. Exponents are used in the formula to standardize the data units. That way, during the next step, per capita disposable personal income can be calculated accurately.

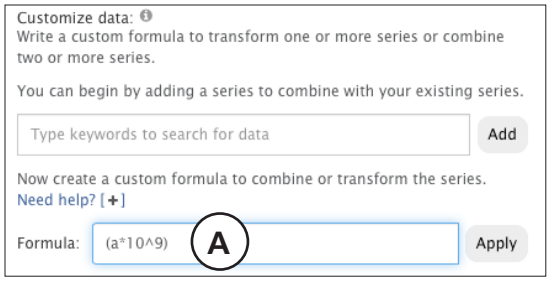


Figure 8

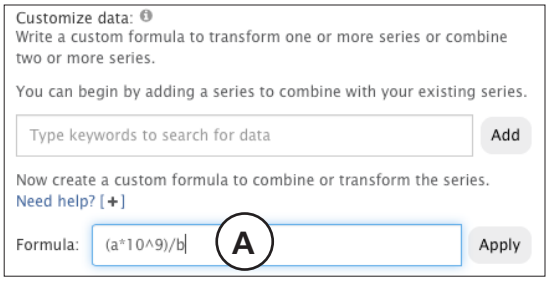


Figure 9

13. You will now take the new real disposable personal income amount and divide it by the total population to find per capita real disposable personal income. To do this go back to the formula bar for Edit Line 1 and modify it to "(a*10^9)/b" (Figure 9A) and click "Apply."

14. Answer the following questions based on the graph you just created:

    a. What was per real capita personal income in 1947 and in 1965?

    b. By what amount and percentage did real per capita personal income increase during this postwar period?

    c. What was the national population in 1947 and in 1965?

    d. By approximately how many people and what percentage did the national population increase during this postwar period?

    e. Why would the national population increase so dramatically following World War II?

    f. Why is it so economically significant that both lines trend upward during this period?

g. What is the relationship between real per capita disposable personal income and real GDP?

h. On average, between 1947 and 1965, did Americans have more, less, or about the same amount of disposable personal income?

FRED® Public Data Series Analysis

15. Go back to the data list at https://fredaccount.stlouisfed.org/public/datalist/6983. For each data series, adjust the date range to show only 1947 to 1965 and fill out the chart on page 20 as follows:

    Type of spending: Identify which type of economic data are presented: (i) government spending (any level of government expenditures), (ii) private spending (by businesses, corporations, companies, etc.), or (iii) consumer spending (individual or household spending).

    Data presented: Describe in simple terms what the money is spent on or what the measure represents.

    Units measured: Identify the unit of measure used.

    Frequency: Identify the frequency at which the data are reported.

    Correlation/causation: Identify if there is a relationship between the data series or if it can be argued that one data series directly causes a change in GDP.

FRED® GRAPH Challenge: Make Your Own Graphs Showing Economic Affluence

16. Create two graphs from a minimum of two and a maximum of four data series from the data list that you think show the best relationship between the growing overall postwar economy (GDP) and the economic indicators on the list. When creating these graphs, consider the following:

    a. What is the best unit to use when comparing these dataset to GDP? ("Raw" numbers, percent change, percent change from year ago, Index (Scale value to 100 for chosen date), etc.)

    b. Is the comparison between the multiple datasets accurate? (Example: Avoid comparing real datasets with nominal datasets because one accounts for inflation but the other does not.)

    c. What frequency of the data series would show the trends most clearly? (Monthly, quarterly, annual, etc.)

    d. When should you plot a second data series on a different *y*-axis?

    e. Which style of graph would best illustrate the relationship? (Bar, line, scatterplot, area, etc.)

    f. Should the dates of the graph be adjusted to stay within the postwar period of 1947-1965?

17. Share each completed graph with the instructor as follows:
    - Click the "Share Links" button (Figure 10A) below the graph and select "page short URL" (Figure 10B).
    - Click the "Copy" button.
    - Either paste the URL into your student sheet or send an email to your instructor.

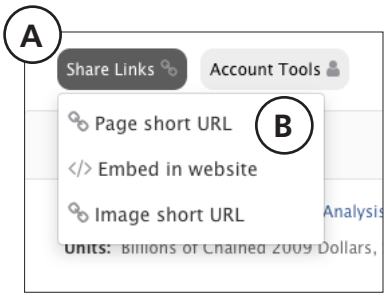


Figure 10

Summation Questions

18. Read *Handout 2: Excerpts* (provided by the instructor) and then answer the summation questions based on the writings of Brink Lindsey and John Kenneth Galbraith.

    a. Does Lindsey describe the postwar economy in generally favorable or unfavorable terms? Provide one example from the passage that supports your analysis.

    b. Does Galbraith describe the postwar economy in generally favorable or unfavorable terms? Provide one example from the passage that supports your analysis.

    c. Of the two selections, whose analysis do you agree with more in describing the American economy after World War II? Why?

FRED® Public Data Series Analysis

Graph title	Type of spending	Data presented	Units measured	Frequency	Correlation/causation
Full-time and part-time employees: State and local general government: Education					
Government current expenditures: Education: Elementary and secondary					
Mean Family Income in the U.S.					
Number of New Private Nonfarm Housing Units Started for U.S.					
Personal consumption expenditures: Durable goods: Motor vehicles and parts					
Private Commercial, Industrial, and Public Utility Construction for U.S.					
Public Construction for U.S.					
Public New Construction Activity, Highways for U.S.					
Sales by Retail Stores for U.S.					

Handout 1: Money for Nothing: Economic Affluence in Postwar America—Answer Key

Fred® Graph Challenge: GDP

1. Go to the data list at https://fredaccount.stlouisfed.org/public/datalist/6983. (It will look like Figure 1.)

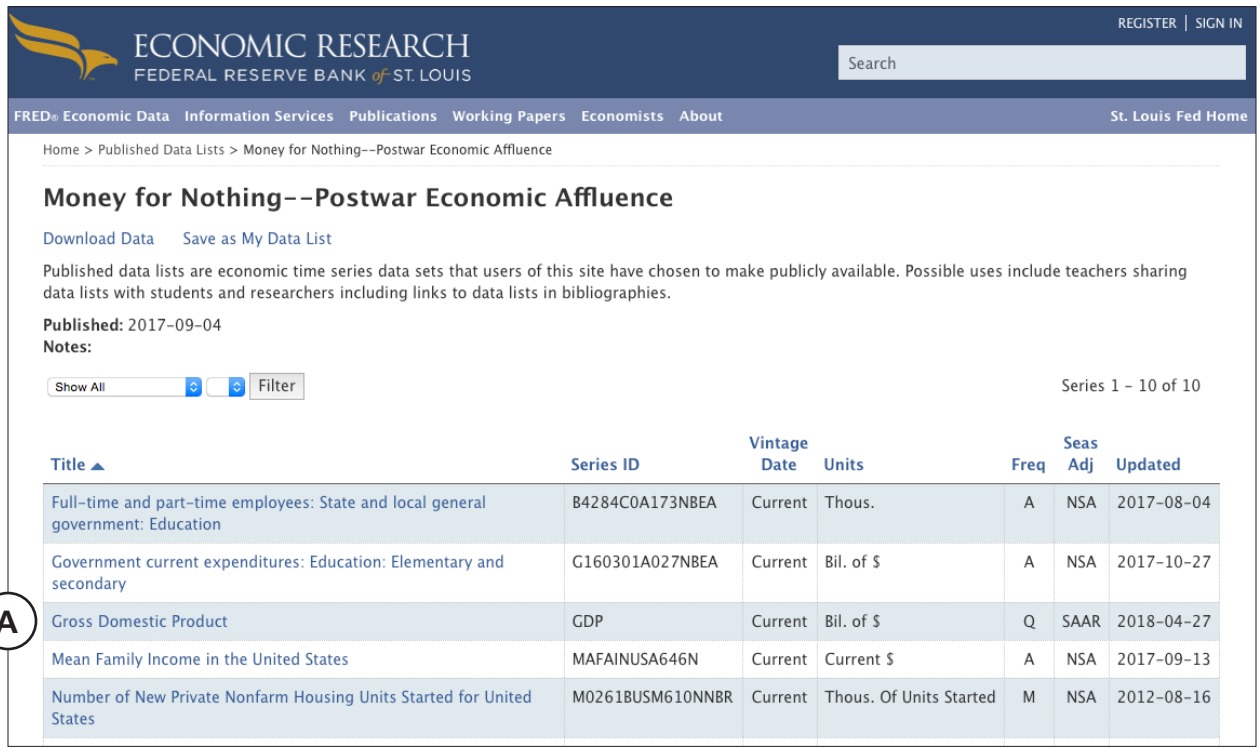


Figure 1

2. Click on "Gross Domestic Product" (Figure 1A) to open that graph. Next, modify the date range as follows to show only the years 1947-1965:
   a. OPTION 1: Move the slider bar under the *x*-axis.
   b. OPTION 2: Type "1965-12-31" (December 31, 1965) into the date box (Figure 2A) next to the orange "EDIT GRAPH" button.

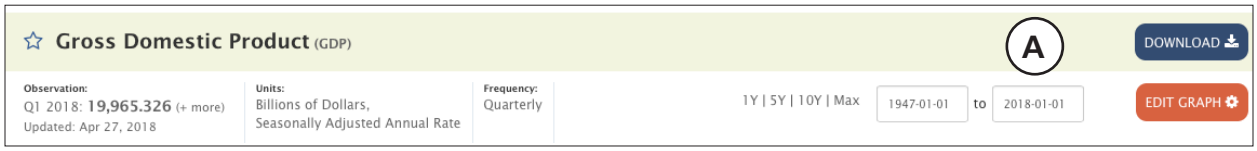


Figure 2

3. Answer the following questions based on the graph you just created:

   a. What are the units of the graph?

   Billions of dollars

   b. Measured in these units, how much did GDP increase between 1947 and 1965?

   From $243.08 billion to $773.10 billion (a net increase of $530 billion)

4. Convert the graph to an index with "1947-01-01" (January 1, 1947) as the start date as follows:

   - Click the "EDIT GRAPH" button in the top-right corner.
   - From the "Units" dropdown menu, select the last option, "Index (Scale value to 100 for chosen date)" (Figure 3A). Note that FRED® automatically sets the index to begin on January 1, 1947 (Figure 3B).
   - To close the panel, click the "X" in the top-right corner of the panel (Figure 3C).

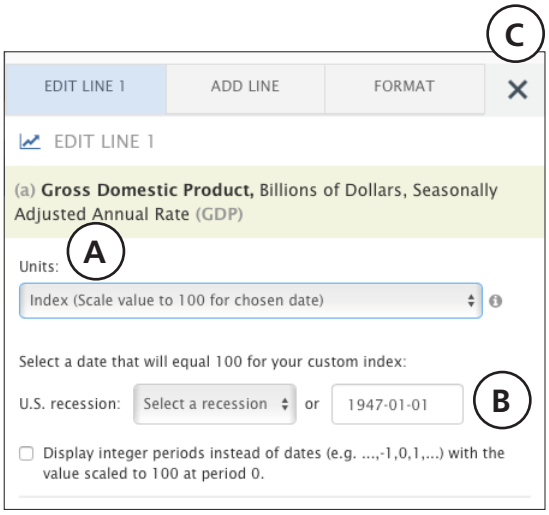


Figure 3

5. Answer the following questions based on the graph you just created:

   a. How much did the index increase between 1947 and 1965?

   By a factor of 2.18 (the equivalent of a 218 percent increase in GDP)

   b. What factors may have contributed to this period of sustained growth after World War II?

   Answers will vary but should include the baby boom, early globalization, and the United States being the world's largest economy after the war.

   c. What general conclusions can be drawn about the overall state of the American economy during the postwar period?

   Answers will vary but should generally describe a time of massive economic expansion and probable prosperity for most Americans.

FRED® Graph Challenge: Per Capita Real Disposable Personal Income and Changes in the U.S. Standard of Living

6. Review *Visual 1: Economics Terms* (displayed by the instructor) and answer the following questions:

   a. What kinds of goods and services might you purchase with disposable personal income?

   Answers will vary but should include both essentials such as food and rent and non-essentials such as entertainment and recreation.

b. For what might you save a portion of your disposable personal income?

Big ticket items, such as a car, a down payment for a home purchase, or college tuition

c. How might changes in disposable personal income affect the national economy?

Increases in consumer spending allow businesses to earn larger profits and expand further, creating a snowball effect that allows the economy to expand at a rapid rate.

d. Why would measuring economic data, such as disposable personal income, using a per capita measurement as opposed to total dollars be a better way to determine the standard of living of a country?

The per capita average, as opposed to total dollars, better shows how the standard of living changes over time. (It is also more relatable to students.)

7. Create a new graph as follows:

- Open a new browser tab and go to http://fred.stlouisfed.org.
- In the search bar, type "real disposable personal income" and hit return.
- From the list that appears, click the data series labeled "Billions of Chained 2009 Dollars, Quarterly, Seasonally Adjusted Annual Rate" beginning Q1 1947 to open the graph for that series. (**NOTE:** The noted data series may not be the first option under the main heading.)

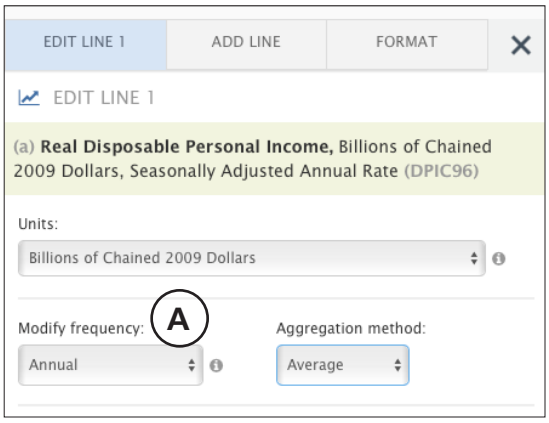


Figure 4

- Adjust the date range to show only 1947 to 1965 (1947-01-01 to 1965-12-31).
- In the "EDIT GRAPH" panel, go to the "Modify frequency" dropdown menu and select "Annual" (Figure 4A).
- Close the panel.

8. To view changes in the standard of living, you need to view real disposable personal income relative to the population. First, add the population data series as follows:

- Click the "EDIT GRAPH" button.
- Click the "ADD LINE" tab (Figure 5A) and type "POPH" in the search box (Figure 5B). ("POPH" is the FRED® series ID code for the data series "National Population, Annual, Persons, Not Seasonally Adjusted, 1900-1999.") Select the data series shown, "National Population," and click "Add data series" (Figure 5C).

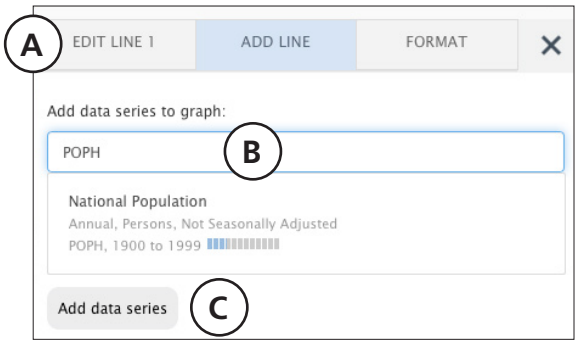


Figure 5

9. Now change the axis for the population data as follows:

   - In the EDIT GRAPH panel, click the "FORMAT" tab.
   - Under "LINE 2," change the "Y-Axis position" from "Left" to "Right" (Figure 6A).
   - Close the panel. The graph now displays Real Disposable Personal Income on the left axis and the National Population on the right axis.

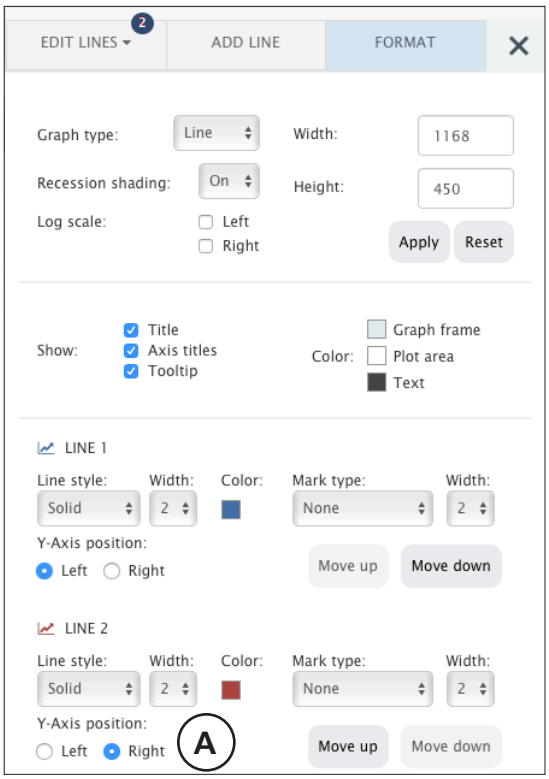


Figure 6

10. Answer the following questions based on the graph you just created:

   a. What is now measured on the left *y*-axis and what are the units?

   Real disposable personal income in billions of chained 2009 dollars

   b. What is now measured on the right *y*-axis?

   The national population in persons (the total population of the United States)

   c. Why is it important for the graph to look this way?

   A double y-axis allows for visual comparison between the two data series.

11. You will now use the FRED® formula tool to better visualize real increases in the U.S. standard of living by calculating per capita real disposable personal income. Manipulate the data using exponents as follows:

   - Click the "EDIT GRAPH" button.
   - Click the "EDIT LINES" tab and select "EDIT LINE 1."

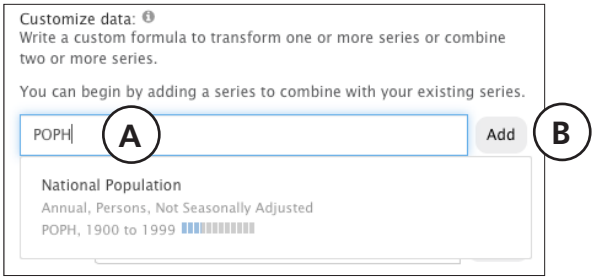


Figure 7

   - In the "Customize Data" bar, type "POPH" (Figure 7A), select "National Population," and then click "Add" (Figure 7B).

12. In the "Formula" bar, type "(a*10^9)" (Figure 8A) and click "Apply." Notice (on the left *y*-axis) that the amount of real disposable personal income increased by a factor of 1 billion. Exponents are used in the formula to standardize the data units. That way, during the next step, per capita disposable personal income can be calculated accurately.

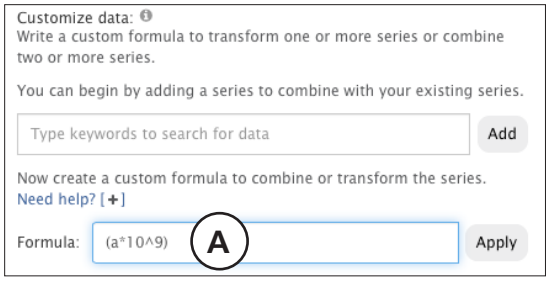


Figure 8

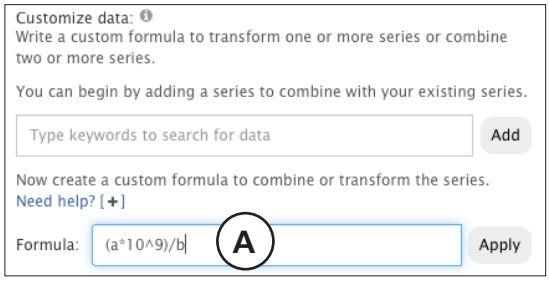


Figure 9

13. You will now take the new real disposable personal income amount and divide it by the total population to find per capita real disposable personal income. To do this go back to the formula bar for Edit Line 1 and modify it to "(a*10^9)/b" (Figure 9A) and click "Apply."

14. Answer the following questions based on the graph you just created:

    a. What was per real capita personal income in 1947 and in 1965?

    1947: $9,110

    1965: $14,147

    b. By what amount and percentage did real per capita personal income increase during this postwar period?

    Amount: $5,037

    Percentage: 55 percent

    c. What was the national population in 1947 and in 1965?

    1947: Approximately 144 million

    1965: Approximately 194 million

    d. By approximately how many people and what percentage did the national population increase during this postwar period?

    People: Approximately 50 million

    Percentage: Approximately 35 percent

    e. Why would the national population increase so dramatically following World War II?

    Answers will vary but should include the baby boom and longer life expectancy thanks to medical innovations.

    f. Why is it so economically significant that both lines trend upward during this period?

    Answers will vary, but it is important for students to understand that not only were individuals becoming more economically prosperous, but that it was happening at the same time the population was dramatically increasing, which historically has made it difficult for per capita disposable personal income to grow.

g. What is the relationship between real per capita disposable personal income and real GDP?

Increases in real per capita disposable personal income mirror increases in real GDP very closely. This similarity suggests that there is a causation relationship where one data point directly influences the other.

h. On average, between 1947 and 1965, did Americans have more, less, or about the same amount of disposable personal income?

More. The rate of growth of real per capita disposable personal income was greater than the rate of growth of the population.

FRED® Public Data Series Analysis

15. Go back to the data list at https://fredaccount.stlouisfed.org/public/datalist/6983. For each data series, adjust the date range to show only 1947 to 1965 and fill out the chart on page 20 as follows:

Type of spending: Identify which type of economic data are presented: (i) government spending (any level of government expenditures), (ii) private spending (by businesses, corporations, companies, etc.), or (iii) consumer spending (individual or household spending).

Data presented: Describe in simple terms what the money is spent on or what the measure represents.

Units measured: Identify the unit of measure used.

Frequency: Identify the frequency at which the data are reported.

Correlation/causation: Identify if there is a relationship between the data series or if it can be argued that one data series directly causes a change in GDP.

FRED® GRAPH Challenge: Make Your Own Graphs Showing Economic Affluence

16. Create two graphs from a minimum of two and a maximum of four data series from the data list that you think show the best relationship between the growing overall postwar economy (GDP) and the economic indicators on the list. When creating these graphs, consider the following:

a. What is the best unit to use when comparing these dataset to GDP? ("Raw" numbers, percent change, percent change from year ago, Index (Scale value to 100 for chosen date), etc.)

b. Is the comparison between the multiple datasets accurate? (Example: Avoid comparing real datasets with nominal datasets because one accounts for inflation but the other does not.)

c. What frequency of the data series would show the trends most clearly? (Monthly, quarterly, annual, etc.)

d. When should you plot a second data series on a different *y*-axis?

e. Which style of graph would best illustrate the relationship? (Bar, line, scatterplot, area, etc.)

f. Should the dates of the graph be adjusted to stay within the postwar period of 1947-1965?

17. Share each completed graph with the instructor as follows:
    - Click the "Share Links" button (Figure 10A) below the graph and select "page short URL" (Figure 10B).
    - Click the "Copy" button.
    - Either paste the URL into your student sheet or send an email to your instructor.

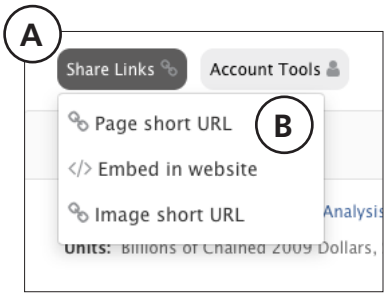


Figure 10

Summation Questions

18. Read *Handout 2: Excerpts* (provided by the instructor) and then answer the summation questions based on the writings of Brink Lindsey and John Kenneth Galbraith.

    a. Does Lindsey describe the postwar economy in generally favorable or unfavorable terms? Provide one example from the passage that supports your analysis.

    Answers will vary, but Lindsey generally supports the idea of postwar America being a very positive and prosperous land. He cites multiple statistics such as life expectancy and appliance ownership as signs of an affluent society.

    b. Does Galbraith describe the postwar economy in generally favorable or unfavorable terms? Provide one example from the passage that supports your analysis.

    Answers will vary, but Galbraith generally views postwar economic affluence as a false sign of prosperity and instead focuses on crumbling inner cities because of, for example, suburbanization and a throwaway culture doing harm to the environment.

    c. Of the two selections, whose analysis do you agree with more in describing the American economy after World War II? Why?

    Answers will vary.

FRED® Public Data Series Analysis

Graph title	Type of spending	Data presented	Units measured	Frequency	Correlation/causation
Full-time and part-time employees: State and local general government: Education	*Government*	*Number of teachers and staff hired by state and local governments for public education*	*Thousands of people*	*Annual*	*Answers will vary.*
Government current expenditures: Education: Elementary and secondary	*Government*	*Money spent on grade school and high school education programs*	*Billions of dollars*	*Annual*	*Answers will vary.*
Mean Family Income in the U.S.	*Consumer*	*Average family income including wages, salaries, retirement benefits, and government assistance*	*Current dollars*	*Annual*	*Answers will vary.*
Number of New Private Nonfarm Housing Units Started for U.S.	*Consumer*	*The number of new houses on which construction was started*	*Thousands of units started*	*Monthly*	*Answers will vary.*
Personal consumption expenditures: Durable goods: Motor vehicles and parts	*Consumer*	*Total individual purchases of cars, truck, and parts for them*	*Billions of dollars*	*Annual*	*Answers will vary.*
Private Commercial, Industrial, and Public Utility Construction for U.S.	*Private*	*Construction of any kind by private companies and public utilities*	*Millions of current dollars*	*Monthly*	*Answers will vary.*
Public Construction for U.S.	*Government*	*All spending on new construction projects by local, state, and federal governments*	*Millions of current dollars*	*Annual*	*Answers will vary.*
Public New Construction Activity, Highways for U.S.	*Government*	*All spending on construction of new highways in the U.S.*	*Millions of current dollars*	*Monthly*	*Answers will vary.*
Sales by Retail Stores for U.S.	*Consumer*	*Total spending at retail stores*	*Millions of dollars*	*Monthly*	*Answers will vary.*

Handout 2: Excerpts

Excerpt from Brink Lindsey's T*he Age of Abundance: How Prosperity Transformed America's Politics & Culture*[1]

America in the years after World War II was the scene of a great revolution in human affairs: the advent of mass affluence. With its vast natural wealth beckoning, unsettled spaces beyond the frontier, America had always been known as a land of plenty. But here was something entirely new: comforts conveniences and opportunities previously only dreamed of, or at best the preserve of a tiny few, were now made available to the broad mainstream of a sprawling populous nation. American capitalism now burst forth with heightened productive forces that opened a "new frontier," an unexplored realm of dizzying choices and proliferating possibilities.

In the Cape Cods and ranch houses of the new suburban sprawl, in the office buildings filled with white collar knowledge workers, on the highways and airwaves that wove a sprawling continent into a unified consuming culture, humanities relationship with nature was being redefined and the old rules of social interdependence rewritten. The realm of freedom had arrived.

Thanks to breakthroughs in public health and medical science, average life expectancy stood at 68.2 years in 1950—21 years longer than at the turn of the century. Public utilities and domestic appliances had rescued home life from much of its age-old drudgery. By 1960 nine out of ten U.S. households had mechanical refrigerators, and 73% owned washing machines. Those appliances had not been available to anyone, rich or poor, a half century earlier.

Excerpt from John Kenneth Galbraith's *The Affluent Society*[2]

The family which takes its mauve and cerise, air conditioned, power steered and power braked automobile out for a tour passes through cities that are badly paved, made hideous by litter, blighted buildings, billboards and posts for wires that should long since have been put underground. They pass on into a countryside that has been rendered largely invisible by commercial art. (The goods which the latter advertise have an absolute priority in our value system. Such aesthetic considerations as a view of the countryside accordingly come second. On such matters, we are consistent.) They picnic on exquisitely packaged food from a portable icebox by a polluted stream and go on to spend the night at a park which is a menace to public health and morals. Just before dozing off on an air mattress, beneath a nylon tent, amid the stench of decaying refuse, they may reflect vaguely on the curious unevenness of their blessings. Is this, indeed, the American genius?

[1]Lindsey, Brink. *The Age of Abundance: How Prosperity Transformed America's Politics & Culture*. New York: HarperCollins, 2007, pp. 32-33.

[2]Galbraith, John Kenneth. *The Affluent Society*. New York: Houghton Mifflin, 1958, p. 253.

AP U.S. History Curriculum Alignment

- **Work, Exchange & Technology**

  WXT-3.0. Analyze how technological innovation has affected economic development and society.

- **Culture & Society**

  CUL-2.0. Explain how artistic, philosophical, and scientific ideas have developed and shaped society and institutions.

- **Period Timeline Alignment**

  Key Concept 7.1: Growth expanded opportunity, while economic instability led to new efforts to reform U.S. society and its economic system.

  I. The United States continued its transition from a rural, agricultural economy to an urban, industrial economy led by large companies.

     A. New technologies and manufacturing techniques helped focus the U.S. economy on the production of consumer goods, contributing to improved standards of living, greater personal mobility, and better communications systems.

  Key Concept 7.2: Innovations in communications and technology contributed to the growth of mass culture, while significant changes occurred in internal and international migration patterns.

  I. Popular culture grew in influence in U.S. society, even as debates increased over the effects of culture on public values, morals, and American national identity.

     A. New forms of mass media, such as radio and cinema, contributed to the spread of national culture as well as greater awareness of regional cultures.

Standard and Benchmarks

College, Career, and Civic Life (C3) Framework for Social Studies State Standards

Dimension 2: Applying Disciplinary Concepts and Tools

- **Economics: The National Economy**

  D2.Eco.10.9-12. Use current data to explain the influence of changes in spending, production, and the money supply on various economic conditions.

  D2.Eco.13.9-12. Explain why advancements in technology and investments in capital goods and human capital increase economic growth and standards of living.

- **History: Historical Sources & Evidence**

  D2.His.9.9-12. Analyze the relationship between historical sources and the secondary interpretations made from them.

- **History: Causation & Argument**

  D2.His.16.9-12. Integrate evidence from multiple relevant historical sources and interpretations into a reasoned argument about the past.

Dimension 3: Gathering & Evaluating Sources

- D3.1.9-12. Gather relevant information from multiple sources representing a wide range of views while using the origin, authority, structure, context, and corroborative value of the sources to guide the selection.

Voluntary National Content Standards in Economics

Standard 15: Economic Growth. Investment in factories, machinery, new technology, and in the health, education, and training of people stimulates economic growth and can raise future standards of living

- **Benchmarks: Grade 12**

  Analyze real Gross Domestic Product (GDP) per capita data for several periods in history, identifying periods during which the United States experienced rapid economic growth; identify the factors that contributed to this growth.