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A Post-War History of U.S. Economic Growth

An Examination of the Contributions to Growth of
the Components of Gross Domestic Product

Nick Bunker July 2014

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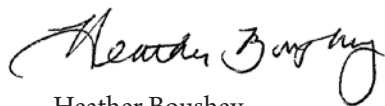
Preface

The Washington Center for Equitable Growth is committed to understanding whether and how economic inequality affects economic growth and stability. Our purpose is three-fold:

- Improve our understanding of equitable growth and inequality by encouraging new academic research and bringing together scholars to share their work
- Build a stronger bridge between academics and policymakers to help ensure research on equitable growth and inequality is relevant, accessible, and informative to the policymaking process
- Shape a rigorous, fact-based national debate on equitable growth and inequality

As we consider these questions, our first point of departure is to lay out what we know about the trends in economic inequality and economic growth in the United States. This report—part of a series on different aspects of equitable growth—focuses on how we measure economic growth, what the key components are, and how they have changed over time. The next two reports in our foundational series will examine the trends in economic inequality, and what the economics literature tells us about whether inequality affects economic growth and stability across place and across time.

The Washington Center for Equitable Growth is committed to accelerating cutting-edge analysis into whether and how structural changes in the U.S. economy, particularly related to economic inequality, affect growth. We will be working with scholars across the United States and worldwide to reach a better understanding of the dynamics of economic growth and inequality and what policymakers can achieve in the way of equitable growth. We look forward to the debate.

A handwritten signature in black ink, reading "Heather Boushey". The signature is fluid and cursive, with the first name "Heather" and last name "Boushey" clearly distinguishable.

Heather Boushey

Executive Director and Chief Economist
The Washington Center for Equitable Growth

Introduction and summary

Five years removed from the end of the Great Recession, economists, policymakers, investors, business leaders, and everyday Americans from all walks of life remain concerned about the future of economic growth in the United States. The severity of that two-year recession and the lackluster recovery ever since sparks fear among economists and policymakers that the U.S. economy is in for a perhaps new and long period of slow growth. Economist Tyler Cowen of George Mason University raised this concern in his book “The Great Stagnation.”¹ And Harvard University economist and former Treasury Secretary Larry Summers recently warned about secular stagnation where the economy suffers from a prolonged period of inadequate demand.²

While these fears are surfacing today, the anemic economic conditions that prevail at present and from which these concerns spring may be the result of structural changes in the U.S. economy over the past 40 years. Since the mid-1970s, the U.S. economy has undergone a variety of changes that may help or hinder economic growth over the long-term, among them:

- An employment shift from manufacturing to services
- The advent of the Internet
- The entrance of women into the paid labor force
- The greater participation of people of color in all sectors of the economy
- The greater openness of the economy to international trade
- The ever-evolving role of government
- A rapid increase in income inequality

The mission of the Washington Center for Equitable Growth is to understand

whether and how these structural changes, particularly the rise in inequality, affect economic growth and stability. But before we can understand how these forces may affect economic growth, we need a baseline understanding of how the U.S. economy grew in the past.

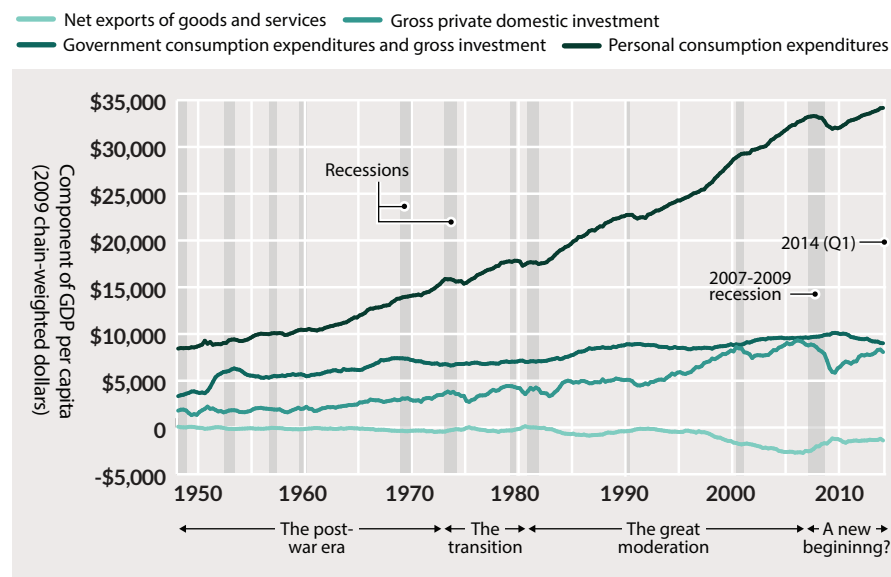
This report helps in that endeavor by looking at the past 65 years of economic growth in the United States—measured by examining our country’s Gross Domestic Product, both its rate of growth and sources of growth, from 1948 to 2014. The starting point, of course, is what this oft-cited statistic GDP actually measures. GDP is comprised of aggregate statistics based upon four major components: consumption, investment, government expenditures, and net exports.

The report then looks at the overall growth of real (inflation adjusted) per capita GDP as well as the contributions of each component to growth over time, specifically over business cycles, or patterns of economic recessions and expansions. (See Figure 1.)

FIGURE 1

The Components of Per Capita Gross Domestic Product

Consumption, investment, government expenditures, and net exports per person, 1948-2013



Source: Author's calculations using data from National Income and Product Accounts tables from the Bureau of Economic Analysis. Recession dates are from the National Bureau of Economic Research's Business Cycle Dating Committee.
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Based on the overall trends, we divide the post-World War II into three eras of growth—the booming post-war period to the early 1970s (the fourth quarter of 1948 to the fourth quarter of 1973), the transition period to the early-1980s characterized by a series of economic shocks and high inflation (the fourth quarter of 1973 to the

third quarter of 1981), and the ensuing period of low economic volatility and heightened growth known as the great moderation up until the start of the Great Recession in 2007 (the third quarter of 1981 to the fourth quarter of 2007). Specifically, economic growth in the third period, leading up to the Great Recession, was:

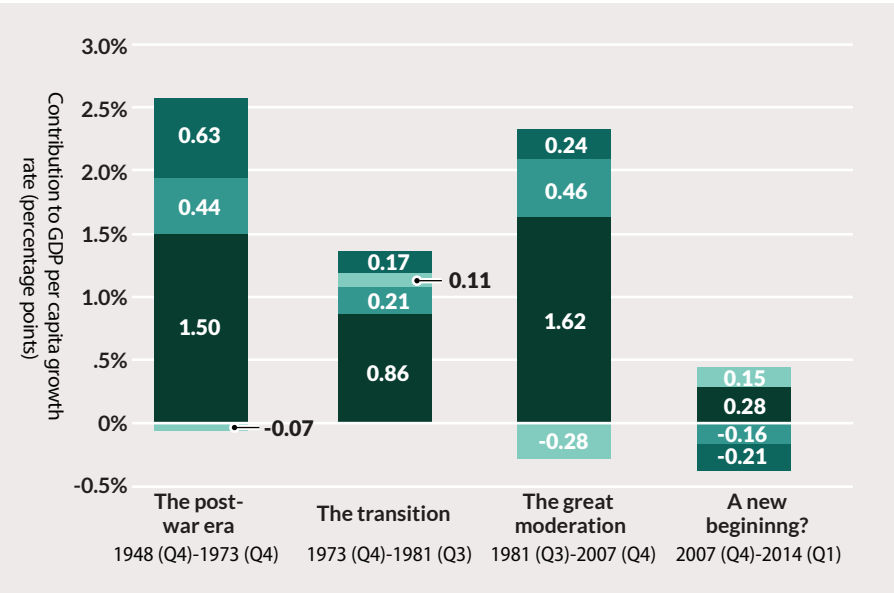
- Not as brisk as it once was
- More dependent upon consumption
- Held back by net exports
- Less driven by government expenditures and investment

FIGURE 2

Are We Entering a New Era of U.S. Economic Growth?

The changing pace and composition of U.S. economic growth, 1948-2014

Net exports of goods and services Gross private domestic investment
Government consumption expenditures and gross investment Personal consumption expenditures



Source: Author's calculations using data from National Income and Product Accounts tables from the Bureau of Economic Analysis
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The current business cycle, starting with the beginning of the Great Recession, appears to be the beginning of a new era—one tentatively defined by tepid consumer demand, stagnant real-wage gains, and growing economic inequality. (See Figure 2.)

This report will have achieved its purpose if it spurs new thinking about how exactly we can and should promote economic growth in the United States.

What is gross domestic product?

How big is the U.S. economy? How quickly did the economy grow last year? To answer these questions, economists use gross domestic product, or GDP, which measures the value of all final goods and services produced within the United States over some time period such as the course of one year. By focusing on final goods and services, GDP measures the amount of “value added” in the economy. The purchase of a cup of coffee is included in GDP. But the purchase of the coffee beans by the business used to make the coffee is not included since the beans are considered inputs to the final good, the cup of coffee. By counting only the value of the final good—the cup of coffee—the value of the coffee beans are not double counted.

In the United States, GDP is measured and reported as part of the National Income and Product Accounts, a system of measuring our economy begun by the late economist Simon Kuznets.³ NIPA is run by the Bureau of Economic Analysis, a part of the U.S. Department of Commerce.⁴ The data are reported every three months and are revised twice before the data become final. Of course, these final data can be revised themselves. In 2013, for example, BEA announced its 14th “benchmark revision” of GDP, which improved the measure and updated data going back to 1929.⁵

Since the value of every good and service produced can (in theory) be measured by the amount of dollars spent on it (in what is known as the “expenditure approach” to calculating GDP), the total dollar value measured by GDP can be separated into different categories of spending⁶:

- Consumption (C): Dollars spent on final goods and services by households and non-profits.
- Investment (I): Dollars spent on final goods and services by businesses, nonprofits, and households to aid in future production.
- Government (G): Dollars spent on final goods and services by the government.

- Net Exports (NX): The dollar value of final goods and services purchased by entities outside the domestic economy minus the dollar value of final goods and services purchased from outside the domestic economy.

For every time period, the dollars spent by various economic actors (consumers, businesses, or government), whether they are spent domestically or internationally, are accounted for in a simple formula: $GDP = C + I + G + NX$ (See Box on page 8).

Of course, GDP is far from a perfect representation of the U.S. economy. The figure doesn't measure nonmarket activity, such as household work, and it doesn't account for how much of this production is actually consumed by households and therefore resulted in increased utility.⁷ GDP also doesn't capture the impact of economic activity, primarily pollution, on the environment.⁸

Nor is GDP necessarily a good measure of the well-being of the residents of a nation. In fact, using GDP as the primary measure of the size of the economy from the official government sources is a somewhat recent development. For a while, Gross National Product was the preferred measure of economic output. Where GDP measures output by looking at where output is produced, GNP looks at the nationality of the person, business or government that produced the good. Some goods that register as GDP wouldn't show up as GNP and vice versa.

$$GDP = C + I + G + NX$$

C = Consumption

I = Investment

G = Government expenditures

NX = Net exports

Consider a German automobile firm that has plants in the United States. The cars are produced in the United States and then purchased by U.S. households. Under the GDP method, the value of these cars counts as part of U.S. GDP since they were produced within the borders of the United States. But under the GNP definition, some of the production value would count toward German GNP since some of the income derived from the sale of the cars would go to the German owners of the firm. GNP can be thought of as GDP plus the income earned by citizens or business abroad minus the income earned by foreign citizens within the border of the country.

It's clear that GDP is the not a perfectly accurate measure of economic activity. But it is the most widely accepted measure and therefore the one we use in this report.

The sections below describe the elements that make up GDP, however imperfect the measure, as a first step toward examining trends in the U.S. economy in recent decades. A look at data collected for each of these categories by the BEA can help us to understand how the American economy has grown in the past several decades.

Components of gross domestic product

Consumption

Whenever an individual purchases a final good or service in the United States, whether in a small mom-and-pop shop or a large commercial chain, that transaction contributes to our measurement of consumption in the economy. The U.S. Bureau of Economic Analysis refers to this in a series called Personal Consumption Expenditures, which are divided in the BEA data into consumer spending on Durable Goods, on Nondurable Goods, and on Services. Durable goods include items such as cars, whereas Nondurable goods include items such as milk. Services consumer spending includes spending on activities such as going to the movies or attending a sports game.

Investment

Whenever a business spends on final goods and services to help boost their productive capability, that spending is counted as investment in GDP. Investment includes business spending on items such as equipment, inventory, and structures. It also includes spending by businesses and households on residential structures. The purchase of financial products is not counted under Investment because it represents an exchange of claims on future production, not an expenditure on present production. BEA refers to the level of investment in a series called Gross Private Domestic Investment, which is comprised of fixed residential investment, fixed nonresidential investment (which includes spending on equipment and software, as well as on structures), and the Change in Private Inventories. Inventories represent what businesses spend money on but do not sell to consumers and are thus items that cannot contribute to GDP through consumption. Still, any increase in inventories represents domestic product that a business has spent money on and thus must be counted in GDP.

Government expenditures

Government expenditures include all final spending by local, state, and the federal government. Final government spending includes both capital outlays, such as the building of a new aircraft carrier, as well as expenditures as simple as trash cans for an office. The definition used in the NIPA data is different from the definition of government spending com-

monly used. For example, spending on programs such as Social Security are not included in government expenditures. The final spender of those dollars are households, so these transfer payments end up registering as household consumption in the NIPA data and not as government expenditure.

Net exports

All the goods and services that are produced in United States but sold as exports to households, businesses, and governments abroad also contribute to GDP because they represent value produced within the country. In contrast, imports—the goods and services that are produced abroad but bought by U.S. households, businesses or governments—must be subtracted as their purchase was included in the first three components of GDP. This net export figure ensures GDP measures economic activity within the borders of the United States.

Measuring changes in growth

It is customary to measure and compare changes in economic growth over the course of business cycles, periods that include both recessions and expansions.

Recessions are periods of economic contraction when GDP and other indicators, including employment and consumption, decline from their previous high, the peak, and economic growth is negative. A familiar rule of thumb for a recession is two consecutive quarters of negative GDP growth, however, this is not the actual definition of a recession. The National Bureau of Economic Research’s Business Cycle Dating Committee, which is a private entity, states there is no hard and fast rule for deciding when recessions start and end.⁹ In fact, they say that no one data series informs their decision. Expansion begins once GDP and other indicators hit a trough and economic growth becomes positive again. The economy expands again until it hits a new peak.

Business cycles can be measured from trough to trough or from peak to peak. This report dates business cycles from peak to peak, with eleven business cycles since 1948 to the present. (See Table 1.)

To measure the pace of growth over these business cycles, this report uses data from the BEA on Gross Domestic Product measured in 2009 dollars on a per capita, or per person, basis. Gross Domestic Product on a per capita basis reveals how much of growth is actually increasing our standard of living and not due just to population growth. An economy that sees overall growth increase merely due to faster population growth hasn’t made individuals more prosperous.

To see which components of GDP contributed to economic growth, it is impor-

TABLE 1
Business Cycles Since Fourth Quarter of 1948
Eleven peak-to-peak periods of U.S. GDP growth

Start date (peak)	➡	End date (peak)
November 1948 (Q4)		July 1953 (Q2)
July 1953 (Q2)		August 1957 (Q3)
August 1957 (Q3)		April 1960 (Q2)
April 1960 (Q2)		December 1969 (Q4)
December 1969 (Q4)		November 1973 (Q4)
November 1973 (Q4)		January 1980 (Q1)
January 1980 (Q1)		July 1981 (Q3)
July 1981 (Q3)		July 1990 (Q3)
July 1990 (Q3)		November 2001 (Q4)
November 2001 (Q4)		December 2007 (Q4)
December 2007 (Q4)		Ongoing

Source: National Bureau of Economic Research
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tant to understand the contributions from each component to the per capita growth rate—specifically how many percentage points each component added to the growth rate. Say, for example, GDP grew at a 4 percent annualized rate. Consumption might add 2 percentage points, private investment could add 2 percentage points, government expenditures could contribute 1 percentage points, and net exports could subtract 1 percentage points. All together the contributions of the components add up to the total 4 percent growth rate in this example. Looking at the share of total growth that each component added enables a detailed look at what drove growth. Note that in some instances the contributions to overall growth from each component won't sum perfectly due to a methodological issue with the GDP data.¹⁰

Using these data, the growth experience of the U.S. economy can be divided into three groups of business cycles. The first period is the post-war era, which stretches from the fourth quarter of 1948 to the fourth quarter of 1973. This period starts from the first business cycle after the Second World War, saw a period of sustained, broadly distributed economic growth, and ended with the advent of a number of economic and political shocks in 1973.¹¹

The second period—from the fourth quarter of 1973 to the third quarter of 1981—covers a period of slow economic growth and high inflation that was marked by the end of the Bretton Woods system of fixed global exchange rates pegged to gold and the U.S. dollar, two oil-price shocks, and a double-dip recession that may have been caused in part by the monetary policies of the Federal Reserve.¹²

The third era covers the third quarter of 1981 to the fourth quarter of 2007, which was the era of growth known as the period of great moderation (because the business cycles were less damaging and growth rebounded and maintained a steady pace) that lasted until the eve of the Great Recession.

Today, the U.S. economy seems to be entering a fourth period, characterized by the Great Recession and its aftermath of weak economic growth—but only time will tell whether or not the U.S. economy is in a new era of economic growth.

Understanding the changing pace and composition of U.S. economic growth is important for academics and policymakers alike. So let's explore each of these eras in turn.

“The growth experience of the U.S. economy can be divided into three groups of business cycles: the post-war era, from 1948 to 1973, the transition, from 1973 to 1981, and the great moderation, from 1981 to 2007.”

The post-war era

Of the three growth periods of the second half of the 20th century, the era immediately after the Second World War had the strongest growth rates. The average annual growth rate of real GDP per capita over the period was 2.5 percent.

On average, the largest driver of growth during this period was personal consumption expenditures. Consumption contributed about 1.5 percentage points, toward the total growth rate. Next was government expenditures, which added 0.6 percentage points on average.

The next largest contributor to growth was private investment, which contributed 0.4 percentage points on average. Finally, net exports were a very small part of growth. It was responsible for a negative 0.1 percent contribution to the average annual rate.

The transition era

The period from the end of 1973 to the third quarter of 1981 was a transition period for the U.S. economy. The oil embargo of 1973, the second oil shock in 1978, and the demise of the Bretton Woods system, among others factors,¹³ triggered a period of slower growth and high inflation known as stagflation. Inflation was eventually brought under control, in part by actions taken by U.S. Federal Reserve Board Chairman Paul Volcker, who raised interest rates, pushing the economy into recession in 1981 and marking end of this era.¹⁴

During this period, the average annual growth rate for per capita GDP was 1.4 percent, which less than two thirds of the 2.5 percent pace in the immediate post-war era. The largest driver of growth during the transition period was, again, personal consumption. It added 0.9 percentage points on average. Investment, the second-largest driver of growth, added 0.2 percentage points. Next was government expenditures, which added a little under 0.2 percentage points to the average annual rate. And finally next exports, which contributed nearly 0.1 percentage points on average.

The great moderation

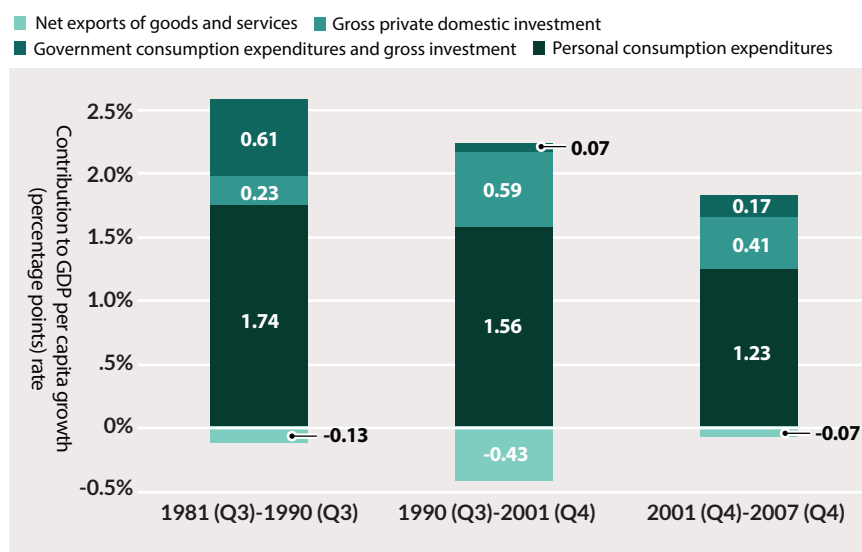
The third growth period saw two long expansions that both almost spanned a decade and a slightly shorter expansion of six years. This period of economic growth coincided with what macroeconomists call the great moderation, a period of low inflation with somewhat higher and steadier growth than in the previous era.¹⁵ This was also a period of rising income inequality.

Average growth for per capita GDP in the period rebounded to 2.1 percent on an average annual basis. Personal consumption was by far the greatest contributor to growth during this period. It added 1.6 percentage points to the average annual growth rate. Private investment came next, adding 0.5 percentage points to the average annual growth rate. Government expenditures added 0.2 percentage points to the overall rate. Next, net exports were a drag on growth, reducing the growth rate by 0.3 percentage points.

FIGURE 3

Differing Sources of Economic Growth in the Great Moderation

The changing composition of total U.S. Gross Domestic Product, 1981-2007



Source: Author's calculations using data from National Income and Product Accounts tables from the Bureau of Economic Analysis
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There have been interesting trends within each individual business cycle in this period. The contribution to growth from consumption declined steadily and net exports were a drag on growth in all three cycles. During the business cycle starting in the third quarter of 1981, private investment contributed only 0.2 percentage points to the overall growth rate. The contribution during the cycle starting in the first quarter of 2001 was about at the same level, contributing only 0.4

percentage points. But in between those cycles, investment contributed a much greater 0.6 percentage points to the overall growth rate during the business cycle from the third quarter of 1990 to the first quarter of 2001.

The pattern is reversed for government expenditures. Over the cycle during the 1980s, government expenditures added 0.6 percentage points to the overall growth rate and for the cycle of the 2000s the contribution was lower at 0.2 percentage points. But the contribution was significantly smaller for the cycle of the 1990s, which was nearly zero at 0.07 percentage points, a negligible difference. One significant cause of this difference was the public policy choice made by the federal government to increase military spending during both the 1980s and the 2000s while reducing it during the 1990s.

Conclusion

The beginning of a fourth era?

The slow recovery from the Great Recession is a well-documented fact. Average annual growth from the fourth quarter of 2007 to the first quarter of 2014, the most recently available data for per capita GDP, has only been 0.07 percent. The slow growth since the Great Recession sparks concerns that long-run economic growth potential is slipping, perhaps sharply and permanently. Former Treasury Secretary and current Harvard University economist Larry Summers raises concerns about secular stagnation. Other economists worry about the future growth rate of productivity, population growth, and future prospects for technological innovation.¹⁶ The Congressional Budget Office even recently reduced its projections for potential GDP.¹⁷

To be clear, this report's own analysis also is incomplete and exploratory. The GDP growth numbers over the current period should not be compared to the growth numbers over other periods because they do not span an entire business cycle from peak to peak. Thus, we won't know if these trends will hold up until the next business cycle peak.

Personal consumption has contributed the most to growth so far, adding 0.3 percentage points to the overall rate. But, at only 0.3 percentage points over the period, consumption contributed much less to growth than it did in all the earlier periods described in this report. Net exports have actually been a contributor to GDP growth, adding 0.2 percentage points to the overall rate. The 0.2 percentage point contribution to growth equaled nearly twice the growth contribution of net exports during the transition period and was greater than the negative contribution during the post-war and great moderation periods.

Government expenditures have been a significant drag on growth during this latest period's still running business cycle, reducing the overall growth rate by 0.2 percentage points on average. Private investment has also been a drag on growth, reducing the overall GDP per capita rate by 0.2 percentage points.

The data show that the U.S. economy has experienced significant changes over the past several decades. Economic growth is not as brisk as it once was, more dependent upon consumption, despite its decreasing absolute contribution to growth, held back more by net exports, and significantly less driven by government expenditures.

Since the beginning of the Great Recession, the economy seems to be shifting. We won't know for several years if these shifts are structural shifts in our economy. The current business cycle hasn't finished yet, so our observations now are incomplete at best. If they are, economists and policy makers need to grapple with the consequences of these shifts for the future of economic growth. Just as the era of stagflation caused a rethinking of the macroeconomic toolkit, the slow growth since the Great Recession may inspire a similar reevaluation.

Economists and researchers are already grappling with these questions. But we need to think deeply about how these new changes affect policy prescriptions. We need to ask ourselves why consumption is contributing so much less to growth than it did during the post-war era. Is this relative decline in consumption a function of growing income inequality? If consumers can't be relied upon to take a larger portion of economic growth, where else will growth come from? Or do we need to boost consumption in new ways?

“ Just as the era of stagflation caused a rethinking of the macroeconomic toolkit, the slow growth since the great recession may inspire a similar reevaluation.”

We also need to understand the consequences of the dramatic drop-off in the last two eras (and the temporary rebound during the first business cycle of the third era) in the contribution of government spending to economic growth. Is there a greater role that the government should be playing in the economy? Alternatively, can the United States become a bigger exporter and rely more upon foreign demand for economic growth? Or, will Americans instead funnel their earnings into investment in the hope of spurring long-term growth that way?

These are vitally important questions. Understanding the new determinants of growth in this economic era is vital if we hope to insure prosperity for all in the coming years.

About the author

Nick Bunker is a Policy Research Associate with the Washington Center for Equitable Growth. Prior to joining the Washington Center for Equitable Growth, he was a Research Assistant with the economic policy team at the Center for American Progress. He graduated from Georgetown University in 2010 with a degree in International Economics.

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Endnotes

- 1 Tyler Cowen, *The Great Stagnation: How America Ate All The Low-Hanging Fruit of Modern History, Got Sick, and Will (Eventually) Feel Better* (Dutton Adult, 2011).
- 2 Larry Summers, "IMF Fourteenth Annual Research Conference in Honor of Stanley Fischer," November 8, 2013, <http://larrysummers.com/imf-fourteenth-annual-research-conference-in-honor-of-stanley-fischer/>.
- 3 Bureau of Economic Analysis, *GDP: One of the Great Inventions of the 20th Century* (Washington, DC, 2000), http://www.bea.gov/scb/account_articles/general/0100od/maintext.htm.
- 4 Bureau of Economic Analysis, "National Economic Accounts," *U.S. Department of Commerce*, May 2014, <http://www.bea.gov/national/Index.htm>.
- 5 Bureau of Economic Analysis, *National Income and Product Accounts Gross Domestic Product, Second Quarter 2013 (advance Estimate); Comprehensive Revision: 1929 through 1st Quarter 2013, Press Release*, (July 31, 2013), http://www.bea.gov/newsreleases/national/gdp/2013/gdp2q13_adv.htm.
- 6 Bradford DeLong and Martha Olney, *Macroeconomics*, 2 edition (Boston: McGraw-Hill/Irwin, 2005).
- 7 Joseph Stiglitz, Amartya Sen, and Jean-Paul Fitoussi, *Report by the Commission on the Measurement of Economic Performance and Social Progress* (France: Commission on the Measurement of Economic Performance and Social Progress, February 2008), http://www.stiglitz-sen-fitoussi.fr/documents/rapport_anglais.pdf.
- 8 Joel Darmstadter, "Greening the GDP: Is It Desirable? Is It Feasible?," *Resources*, no. 139 (Spring 2000): 11–15.
- 9 The National Bureau of Economic Research, "The NBER's Business Cycle Dating Procedure: Frequently Asked Questions," accessed June 27, 2014, http://www.nber.org/cycles/recessions_faq.html.
- 10 In short, the data on the components of GDP includes a small residual that isn't included in the main groupings. That accounts for the slight divergence.
- 11 Andrew Glyn et al., "The Rise and Fall of the Golden Age," in *The Golden Age of Capitalism: Reinterpreting the Postwar Experience*, *Wide Studies in Development Economics* (Oxford: Clarendon Press, 1990), 323.
- 12 Ben S. Bernanke, "What Do We Know about How Monetary Policy Affects the Economy: A Conference Panel Discussion," *Review*, no. May (1995): 127–41.
- 13 The Bretton Woods monetary system was an international fixed exchange regime in which the dollar acted as a reserve currency and its value was fixed in terms of gold. It was weakened in 1971 and then finally abandoned in 1973, triggering across-the-board inflation. See International Monetary Fund, "About the IMF: History: The End of the Bretton Woods System (1972–81)," accessed July 25, 2014, <https://www.imf.org/external/about/histend.htm>; Michael D. Bordo and Barry Eichengreen, "Bretton Woods and the Great Inflation," in *The Great Inflation: The Rebirth of Modern Central Banking*, ed. Michael D. Bordo and Athanasios Orphanides (Chicago: University of Chicago Press, 2013), 449 – 489.
- 14 Bernanke, "What Do We Know about How Monetary Policy Affects the Economy?"
- 15 Peter M. Summers, "What Caused The Great Moderation? Some Cross-Country Evidence," *Economic Review*, Federal Reserve Bank of Kansas City, Third Quarter 2005, 5–32.
- 16 Binyamin Appelbaum, "U.S. Economic Recovery Looks Distant as Growth Stalls," *The New York Times*, June 11, 2014, sec. B, <http://www.nytimes.com/2014/06/12/business/economy/us-economic-recovery-looks-distant-as-growth-lingers.html>.
- 17 Congressional Budget Office, *Revisions to CBO's Projections of Potential GDP Since 2007* (Washington, DC: Congressional Budget Office, February 2014), <http://www.cbo.gov/publication/45150>.

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