International Perspectives on the “Great Moderation”

Macroeconomic activity in the United States has been substantially less volatile since the early 1980s, a phenomenon that has been dubbed the “Great Moderation.” The chart illustrates this fact with a plot of the growth rate of U.S. real gross domestic product (GDP) since the early 1950s. The standard deviation of quarterly real GDP growth, a statistical measure of variability, was 4.7 percentage points before 1984, the year commonly assigned to the beginning of the Great Moderation. After 1984, this standard deviation fell to 2.1 percentage points, a decline of more than half.

Other things equal, smoother economic activity has many potential benefits. For example, businesses enjoy less uncertainty when they make investment decisions, while individuals experience smaller swings in their income and consumption. Also, economic recessions—the most costly phase of the business cycle in terms of wasted resources—have become less frequent and less severe since the beginning of the Great Moderation.

While the Great Moderation in the United States has been extensively discussed, recent research has found evidence for moderations in the business cycles of other countries as well. Economists James Stock and Mark Watson1 document significant reductions in the volatility of real GDP growth for several G7 countries over the past 50 years. However, the particular pattern of the moderation often differs from that seen in the United States. For example, the reductions in macroeconomic volatility observed in Germany, Italy, and the United Kingdom all began earlier and were far more gradual than that observed in the United States. On the other hand, Canada’s reduction in volatility did not occur until the early 1990s, later than in the United States. Japan displayed falling volatility during the 1970s, but has actually experienced a rebound in volatility since the early 1980s. Finally, France was the only G7 country for which volatility appeared approximately constant over the sample period.

Why has the volatility of output growth fallen in the United States and abroad? One possibility is that improved macroeconomic policy has tamed the business cycle. For example, in many countries the conduct of monetary policy is thought to have improved in recent decades, as central banks have gained increased independence and become more committed to the goal of price stability. Stock and Watson considered the possibility that improved monetary policy generated the Great Moderation. To investigate this claim, they conducted counterfactual experiments using theoretical models that attempted to ask the following question: If the conduct of monetary policy had never changed, would the Great Moderation have occurred? Stock and Watson found only a small role for improved monetary policy in explaining the reduction in the volatility of output growth in the G7 economies. Instead, they argue that most of the reduction in volatility comes from a lessening of common international “shocks,” such as the large disruptions in the supply of oil that occurred in the 1970s. This conclusion is somewhat discouraging, as it suggests that if such shocks return, macroeconomic volatility will also. Discovering the source of the Great Moderation, both at home and abroad, remains an active area of research for macroeconomists.

—Michelle T. Armesto and Jeremy M. Figer


Views expressed do not necessarily reflect official positions of the Federal Reserve System.
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St. Louis, MO 63102

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Sincerely,
Christopher J. Neely
Editor, International Economic Trends

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Notes and Sources

International Economic Trends

MFM
United States: currency in circulation, travelers’ checks, total publicly-held checkable deposits minus cash items in the process of collection and Federal Reserve floor, savings deposits, share in retail money market mutual funds (funds with initial investments of less than $500,000, net of retirement accounts, and institutional money market mutual funds).

M2
Canada: M1 plus checkable notice deposits and personal term deposits. United Kingdom: currency in circulation and sterling retail deposits with the U.K. banks and building societies. United States: M2M less institutions money market mutual funds plus small denomination (less than $100,000) time deposits.

M2 + CDs
Japan: M1 plus private deposits, public demand deposits, and certificates of deposit.

M3
Euro area: M1 plus deposits with a maturity up to 2 years, deposits redeemable at notice up to 3 months, repurchase agreements, money market funds, and debt securities up to 2 years.

M4
United Kingdom: M2 plus wholesale deposits with the U.K. banks and building societies.

Output Per Worker is the ratio of real GDP to employment.

Producer Price Index covers manufacturing for Canada and the United Kingdom; and total industry for Japan and the United States. Data for the euro area, France, Germany, and Italy are based on the harmonized index of total industry excluding construction.

Retail Sales are based on a volume index. The percent change in retail sales for the United States is based on the Standard Industrial Classification system through 1992 and the North American Industrial Classification System from 1993 on.

Stock Exchange Index refers to all share prices except for the United Kingdom, which excludes financial firms.

Unemployment Rate is the standardized unemployment rate. It is the percentage of the civilian labor force that is unemployed. The unemployed are all persons of working age who are without work, usually available for work, and actively seeking work. The standardized rate may differ from the nonfarm unemployment rate calculations.

Sources

Abbreviations
Board of Governors of the Federal Reserve System (BLS)
Bureau of Economic Analysis, U.S. Department of Commerce (BEA)
International Monetary Fund, International Financial Statistics (IFS)
Organization for Economic Cooperation and Development, Economic Outlook (OECD)
Main Economic Indicators (OECD)
National Accounts Quarterly (OECD)

Canada
Bank of Canada: M1 and M2.
BIOG: exchange rate.
IMF: foreign exchange reserves, merchandise and service trade, real effective exchange rate, and reserve money.
OECD: government debt and budget balance.
OECD2: capacity utilization, consumer price index, current account balance, GDP, hourly earnings, industrial production, interest rates, producer price index, retail sales, stock exchange index, and unemployment rate.
Statistics Canada: employment.

Eur Area
European Central Bank: current account balance and employment.
Eurostat: capacity utilization, consumer price index, GDP, interest rates, merchandise trade, producer price index, and retail sales.

France
BIOG: exchange rate.
Eurostat: capacity utilization, consumer price index, and producer price index.
IMF: foreign exchange reserves, merchandise and service trade, and real effective exchange rate.
Institut National de la Statistique et des Etudes Economiques: employment.
OECD: government debt and budget balance.
OECD2: current account balance, GDP, hourly earnings, industrial production, retail sales, interest rates, stock exchange index, and unemployment.

Germany
BIOG: exchange rate.
Bundesanstalt Fur Arb: employment.
Eurostat: capacity utilization, consumer price index, and producer price index.
IMF: foreign exchange reserves, merchandise and service trade, and real effective exchange rate.
OECD: government debt and budget balance.
OECD2: current account balance, GDP, hourly earnings, industrial production, retail sales, interest rates, stock exchange index, and unemployment.

Italy
BIOG: exchange rate.
Eurostat: capacity utilization, consumer price index, and producer price index.
IMF: foreign exchange reserves, merchandise and service trade, and real effective exchange rate.
ISTI: government debt and budget balance.
OECD: government debt and budget balance.
OECD2: current account balance, GDP, hourly earnings, industrial production, retail sales, interest rates, stock exchange index, and unemployment.

Japan
Bank of Japan: adjusted monetary base and long-term interest rate.
BIOG: exchange rate.
IMF: foreign exchange reserves, merchandise and service trade, and real effective exchange rate.
OECD: government debt and budget balance.
OECD2: capacity utilization, consumer price index, current account balance, employment, GDP, hourly earnings, industrial production, M1, M2, producer price index, retail sales, short-term interest rate, stock exchange index, and unemployment.

United Kingdom
BIOG: exchange rate.
IMF: foreign exchange reserves, merchandise and service trade, and real effective exchange rate.
OECD: government debt and budget balance.
OECD2: capacity utilization, consumer price index, current account balance, GDP, industrial production, interest rates, M4, producer price index, retail sales, stock exchange index, unemployment, and weekly earnings.

United States
BIOG: capacity utilization, exchange rate, industrial production index, M2, and interest rates.
BLS: employment, consumer price index, and producer price index.
Federal Reserve Bank of St. Louis: adjusted monetary base and M2M.
IMF: foreign exchange reserves and real effective exchange rate.
OECD: government debt and budget balance.
OECD2: hourly earnings, stock exchange index, and unemployment.
Notes

Euro Area Data: On January 1, 2001, the euro area was enlarged to include Greece as its 12th member country. Historical euro area series for capacity utilization, the consumer price index, current account balances, earnings, employment, government debt and budget balances, and GDP per head (in constant 1995 prices) for the Euro Area is estimated using a weighted average of the new member states' data for the period 1999 to 2001.

Employment data refer to civilian employment for Canada, Germany, Italy, Japan, the United States, and the United Kingdom. For all other countries, employment data refer to the sum of the number of employed persons 15 years and older. In this respect, note that the Euro Area includes the former countries of the Common Market, as well as Greece.

Foreign Exchange Reserve data are end of period. The dollar value of reserves may fluctuate as a result of changes in reserve holdings and/or changes in the value of the currencies held vis-a-vis the U.S. dollar.

Government Budget Balance is the difference between general government current receipts and total outlays. Total outlays consist of current expenditures and capital expenditures. Government (net) debt incorporates all financial liabilities of the general government sector. The general government sector includes the central, state, local, and social security sectors.

Nominal Gross Domestic Product

Real Gross Domestic Product

Consumer Price Index

Unemployment Rate

Earnings are based on hourly earnings in manufacturing for Canada, Germany, the United States, and the United Kingdom. Hourly earnings in manufacturing are based on average weekly earnings in manufacturing excluding construction for France, hourly earnings in industry in Italy; monthly earnings in manufacturing for Japan and weekly earnings in manufacturing for the United Kingdom.

The Exchange Rate is the rate at which a country's currency is quoted in relation to another currency. The exchange rate is the price of one currency expressed in terms of another. The exchange rate is determined by the supply and demand for the currencies involved.

The EAEU (the European Free Trade Association) is a political and economic union of Belarus, Kazakhstan, Kyrgyzstan, and Russia. The EAEU was established in 2015 and is designed to create a common market for these countries.

The EBRD (the European Bank for Reconstruction and Development) is a multilateral development bank that promotes private sector growth, job creation, and social development in countries making the transition from state-owned to market-based economies.

The FDI (foreign direct investment) is a measure of the amount of money that is invested in a country by foreign investors. FDI is an important source of capital for developing countries.

The FOMC (Federal Open Market Committee) is the monetary policy committee of the Federal Reserve System. The FOMC is responsible for setting the nation's monetary policy.

The GEM (the Global Entrepreneurship Monitor) is a research project that tracks the state of entrepreneurship and new business creation around the world. The GEM is conducted in partnership with the World Economic Forum and the University of Canberra.

The HICP (Harmonized Index of Consumer Prices) is a measure of the change in the price of consumer goods and services that are purchased by households.

The IPI (Import Price Index) is a measure of the change in the price of goods imported into a country.

The M3 (aggregated money supply) is a measure of the amount of money that is available for transactions and investment. M3 includes all demand deposits, savings deposits, time deposits, and other deposits.

The M4 (aggregated money supply) is a measure of the amount of money that is available for transactions and investment. M4 includes all demand deposits, savings deposits, time deposits, and other deposits.

The OECD (Organisation for Economic Co-operation and Development) is a forum of 38 member countries that work together to address economic, social, and environmental challenges.

The OPEC (Organization of the Petroleum Exporting Countries) is a multinational organization of 13 countries that are major oil producers. OPEC's main function is to maintain the stability of oil prices and the prosperity of its member countries.

The WTO (World Trade Organization) is a global international organization that promotes free trade and economic development. The WTO's main function is to ensure that trade between nations is conducted fairly and equally.

The WTI (West Texas Intermediate) is a grade of light, sweet crude oil that is the most widely traded oil futures contract in the world. WTI prices are set in the New York Mercantile Exchange (NYMEX) and are widely followed as an indicator of global oil prices.

The XBP (the Exchange Rate Balance of Payments) is a measure of the balance of payments that shows the difference between the inflow and outflow of money.

The XPL (the Exchange Rate Principal Loans) is a measure of the amount of loans that are denominated in foreign currencies and are available to borrowers in the domestic currency.
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*Data prior to 1993 may not be strictly comparable with later figures (see Notes).