Global Factors in Budget Deficits

Discussions about fiscal deficits—government outlays less tax receipts as a percentage of gross domestic product (GDP)—often overlook the importance of global factors in common movements across countries. The left panel of the figure, for example, shows that deficits in Canada, France, Germany, the United Kingdom, and the United States declined from the mid- to the late-1980s, increased with the global recession of 1990, and then improved again from about 1992 through 2000. Recently, however, deficits have increased; in Germany and France, they are larger than the European Monetary Union limit of 3 percent of GDP.

Why do national fiscal deficits tend to move together? One reason is that deficits react to common business cycle shocks. That is, global economic activity is subject to common shocks to technology, demographics, commodity prices, and political uncertainty. Further, international trade links countries’ economies. Over a business cycle, government outlays fall and tax receipts rise with economic activity. Such changes are called automatic stabilizers; they make deficits vary with the business cycle. Governments often raise discretionary spending or cut taxes during periods of low output, further amplifying the connection of deficits to economic activity. Because countries tend to share business cycles, which are correlated with deficits, deficits tend to be correlated internationally.

The portion of a deficit that is due to the level of economic activity is called the cyclical deficit, while the structural deficit is the shortfall that would exist even if the level of economic output were at its potential. The right panel of the figure shows estimates of structural deficits.

Structural deficits can result from changes in tax and spending preferences or external events. For example, the U.S. deficit rose in 1992 when savings and loan depositors were bailed out. And the terrorist attacks of September 11, 2001, and wars in Afghanistan and Iraq surely inflated the U.S. deficit through higher defense and homeland security expenditures. Indeed, the U.S. deficit in 2002 (3.4 percent of GDP) was mostly structural (2.9 percent), not cyclical.

The international correlation in structural deficits illustrates that the business cycle is not the only global influence on fiscal deficits. For example, the “peace dividend,” the cuts in defense spending after the fall of the Soviet Union, accounted for some of the international fall in structural deficits in the 1990s. Similarly, the extraordinary international bull market in equities in the late 1990s—which was only weakly related to real economic activity—probably reduced deficits by increasing tax revenues on capital gains. The decline in equity prices since 2000 has been associated with a falloff in tax revenues on capital gains. Finally, the Maastricht Treaty, which established the European Monetary Union on January 1, 1999, limits deficits to 3 percent of GDP. This treaty obligation forced cuts in French and German deficits in the 1990s.

In evaluating deficits, one should carefully consider the source. Cyclical deficits, which often have a strong global component, do not threaten long-term fiscal solvency because they will be reversed over time. However, large structural deficits—those greater than the country’s average output growth rate—cannot be maintained forever and might require adjustments to tax and spending policies.

—Christopher J. Neely
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Conventions used in this publication:

1. Charts and tables contain data that were current through October 2003. Unless otherwise indicated, data are quarterly.
2. The percent change refers to the percent change from the same period in the previous year. For example, the percent change in x between quarter t–4 and the current quarter t is: \((x_t/x_{t-4}) - 1\) × 100.
3. All data with significant seasonal patterns are adjusted accordingly.

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Research Department
Federal Reserve Bank of St. Louis
411 Locust St.
St. Louis, MO 63102

Please keep in mind that technical limitations preclude us from adding more pages to the publication. So, we must make some difficult choices with respect to the material we include.

Thank you in advance for your help in making International Economic Trends a great publication.

Sincerely,
Christopher J. Neely
Editor, International Economic Trends

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<td>4.97</td>
<td>4.87</td>
<td>4.60</td>
<td>5.00</td>
<td>5.13</td>
<td>4.63</td>
<td>4.43</td>
<td>4.07</td>
<td>3.87</td>
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<td>Italy</td>
<td>5.48</td>
<td>5.16</td>
<td>5.37</td>
<td>5.27</td>
<td>4.94</td>
<td>5.25</td>
<td>5.36</td>
<td>4.85</td>
<td>4.68</td>
<td>4.24</td>
<td>4.16</td>
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<td>Japan</td>
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<td>1.28</td>
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<td>1.11</td>
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<td>4.81</td>
<td>5.10</td>
<td>5.05</td>
<td>4.79</td>
<td>5.05</td>
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<tr>
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<td>5.56</td>
<td>5.81</td>
<td>5.59</td>
<td>5.44</td>
<td>5.70</td>
<td>5.72</td>
<td>5.09</td>
<td>4.92</td>
<td>4.77</td>
<td>4.44</td>
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</table>
Canada
International Economic Trends

GDP
Percent change from year ago

Industrial Production
Percent change from year ago

Retail Sales
Percent change from year ago

Capacity Utilization
Percent

Research Division
Federal Reserve Bank of St. Louis
Euro Area

International Economic Trends

Real GDP
Percent change from year ago

Employment
Percent change from year ago

Consumer Price Index
Percent change from year ago

Unemployment Rate
Percent

Hourly Earnings
Percent change from year ago

Current Account Balance
Percent of GDP

Research Division
Federal Reserve Bank of St. Louis
France

International Economic Trends

GDP
Percent change from year ago

Industrial Production
Percent change from year ago

Retail Sales
Percent change from year ago

Capacity Utilization
Percent

Research Division
Federal Reserve Bank of St. Louis
Real GDP
Percent change from year ago

Employment
Percent change from year ago

Consumer Price Index
Percent change from year ago

Unemployment Rate
Percent

Hourly Earnings
Percent change from year ago

Current Account Balance
Percent of GDP
**GDP**
Percent change from year ago

---

**Industrial Production**
Percent change from year ago

---

**Retail Sales**
Percent change from year ago

---

**Capacity Utilization**
Percent

---
**Hourly Earnings and Output per Worker**
Percent change from year ago

**Labor Force Indicators**
Percent change from year ago

**Inflation**
Percent change from year ago

**Government Debt and Budget Balance**
Percent of GDP, annual data
Italy

International Economic Trends

GDP
Percent change from year ago

Industrial Production
Percent change from year ago

Retail Sales
Percent change from year ago

Capacity Utilization
Percent
Hourly Earnings and Output per Worker
Percent change from year ago

Labor Force Indicators
Percent change from year ago

Inflation
Percent change from year ago

Government Debt and Budget Balance
Percent of GDP, annual data

Research Division
Federal Reserve Bank of St. Louis
United Kingdom

International Economic Trends

M0
Percent change from year ago

Interest Rates
Percent

M2
Percent change from year ago

Exchange Rate and Inflation Differential

Pounds/US$

M4
Percent change from year ago

Real Effective Exchange Rate
Index 1995 = 100

Research Division
Federal Reserve Bank of St. Louis

35
International Economic Trends

GDP
Percent change from year ago

Industrial Production
Percent change from year ago

Retail Sales
Percent change from year ago

Firms Operating at Capacity
Percent

Research Division
Federal Reserve Bank of St. Louis
International Trade - Goods and Services
Percent of GDP

Current Account Balance
Percent of GDP

Foreign Exchange Reserves
Billions of US$

Real Effective Exchange Rate
Index 1995 = 100
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 balance, earnings, employment, government debt and budget balance, gross domestic product (GDP), industrial production, merchandise trade, the producer price index, and unemployment include Greece. The series for interest rates, monetary aggregates, the real effective exchange rate, retail sales, and the stock exchange index incorporate Greece starting in January 2001.

Euro-area interest rates prior to December 1998 are calculated on the basis of national government yields weighted by GDP. Starting in 1999, short-term rates are euro interbank offered rates. Long-term rates are calculated on the basis of national government bond yields weighted by the nominal outstanding amounts of government bonds in each maturity band.

The euro/dollar exchange rate used in the chart on page 12 is a synthetic rate prior to January 1999. This is constructed by calculating a weighted average of the exchange rates of the euro-area countries, excluding Greece and Luxembourg, against the dollar. The weights are based on 1997 GDP shares.

German Data: As a result of reunification, data for all of Germany are now incorporated in the statistical series. The starting periods for unified German data are listed below. Care should be exercised when interpreting the data around these break periods.

Third quarter 1990: current account balance, international trade, and unemployment.
First quarter 1991: consumer price index, GDP, industrial production, output per worker.
First quarter 1993: stock exchange index.
Third quarter 1993: employment.
First quarter 1995: hourly earnings.

Capacity Utilization covers the manufacturing sector for Canada, France, Japan, the United Kingdom, the United States, and the euro area; manufacturing excluding food, beverage, and tobacco for Germany; and mining and manufacturing for Italy.

Consumer Price Index is for all items. The current index is based on goods and services consumed by all individuals for Canada; all multi-person households excluding those mainly engaged in agriculture, forestry, and fisheries for Japan; all households except pensioners dependent on state pension and high income households for the United Kingdom; and all urban households for the United States. Data for the euro area, France, Germany, and Italy are based on the harmonized index of consumer prices.

Current Account Balance is the sum of merchandise and service exports and income receipts on domestic assets abroad minus the sum of merchandise and service imports and income payments from foreign assets in the domestic economy plus net unilateral transfers.

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

The Exchange Rate for all countries except the United States is expressed as units of local currency per U.S. dollar. For the United States the trade-weighted exchange rate, TWEX, is used. This is a weighted average of the exchange value of the U.S. dollar relative to the major international currencies—the euro, Canadian dollar, Japanese yen, British pound, Swiss franc, Australian dollar, and Swedish kronor. Prior to 1999, the currencies of the euro-area countries (with the exception of Greece) are used instead of the euro.

Real Effective Exchange Rate uses normalized unit labor costs in manufacturing. The weighting scheme used to construct the rates, for all except the euro area, is based on disaggregated data for trade among 21 industrial countries in manufactured goods for 1995. For the euro area the weights relate to the trade of the euro area with the other countries. The weights reflect the relative importance of a country’s trading partners in its direct bilateral trade relations and competition in third markets. Normalized unit labor costs in manufacturing are calculated by dividing an index of actual hourly compensation per worker by a five-year moving average index of output per man-hour.

Employment data refer to civilian employment for Canada, Germany, Italy, Japan, and the United States; industrial employment for France; and total employment for the euro area and the United Kingdom.

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-à-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 net capital expenditures. Government Debt incorporates all financial liabilities of the general government sector. The general government sector consolidates the accounts of the central, state, local, and social security sectors.

Inflation Differential is the U.S. inflation rate minus the foreign inflation rate, as measured by the consumer price index. For the U.S. chart on page 41, the inflation differential is the U.S. inflation rate minus a weighted average of the inflation rates in countries whose currencies are used in the major currency trade-weighted exchange rate index. Starting in 1999, the euro-area harmonized consumer price index is used for the euro area. Prior to 1999, the inflation rates for the individual euro area countries (excluding Greece and Luxembourg) are used.

Industrial Production measures the change in the volume of output in the mining, manufacturing, oil, electricity, gas, and water industries.

The Short-Term Interest Rate table on page 4 uses the relevant 3-month interest rate shown in the country pages.

The Long-Term Interest Rate table on page 4 uses the government bond rate. The government bond rate is a composite of yields on federal government bonds with maturities of more than 10 years for the United States; long-term public and semi-public sector bonds for France; 7- to 15-year public sector bonds for Germany; 15- to 20-year government bonds through 1990 and 10-year government bonds starting in 1991 for Italy; and 10-year government bonds for Canada, the euro area, Japan, and the United Kingdom.

The Reserve Money table on page 4 refers to the adjusted monetary base for Japan and the United States; reserve money for Canada; and M0 for the United Kingdom. Reserve Money is currency in circulation, deposits of the deposit money banks, and demand deposits of other residents (with the exception of the central government) with the monetary authority.

Adjusted Monetary Base

Japan: currency in circulation and current deposits at the Bank of Japan.
United States: the sum of currency in circulation outside Federal Reserve banks and the U.S. Treasury, deposits of depository financial institutions at Federal Reserve banks, and an adjustment for the effects of changes in statutory reserve requirements on the quantity of base money held by depositories.

M0


M1

Canada: currency in circulation and chartered bank net demand deposits.
Japan: cash, currency in circulation, and deposit money.
Euro area: currency in circulation and overnight deposits.

MZM

United States: currency in circulation, travelers’ checks, total publicly-held checkable deposits minus cash items in the process of collection and Federal Reserve float, savings deposits, shares in retail money market mutual funds (funds with initial investments of less than $50,000), net of retirement accounts, and institutional money market mutual funds.
Notes and Sources

**M2**
Canada: M1 plus all 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: MZM less institutional money market mutual funds plus small denomination (less than $100,000) time deposits.

**M2 + CDs**
Japan: M1 plus private deposits, public deposits less 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, readily available for work, and actively seeking work. The standardized rate may differ from the national unemployment rate calculations.

**Sources**

**Abbreviations**
Board of Governors of the Federal Reserve System (BOG)
Bureau of Economic Analysis, U.S. Department of Commerce (BEA)
International Monetary Fund, International Financial Statistics (IMF)
Organization for Economic Cooperation and Development,
   Economic Outlook (OECD1)
   Main Economic Indicators (OECD2)
   National Accounts Quarterly (OECD3)

**Canada**
Bank of Canada: M1 and M2.
BOG: exchange rate.
IMF: foreign exchange reserves, merchandise and service trade, real effective exchange rate, and reserve money.
OECD1: 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.

**Euro Area**
Eurostat: capacity utilization, consumer price index, current account balance, employment, GDP, interest rates, merchandise trade, producer price index, and retail sales.
Haver Analytics: synthetic euro exchange rate.
IMF: real effective exchange rate.

**France**
BOG: 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.
OECD1: government debt and budget balance.
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**Germany**
BOG: exchange rate.
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OECD1: government debt and budget balance.
OECD2: current account balance, GDP, hourly earnings, industrial production, long-term interest rates, retail sales, stock exchange index, and unemployment.

**Japan**
Bank of Japan: adjusted monetary base and long-term interest rate.
BOG: exchange rate.
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OECD1: 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.

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U.K. Office for National Statistics: employment and M0.

**United States**
BOG: capacity utilization, exchange rate, industrial production index, M2, and interest rates.
BEA: GDP, current account balance, merchandise and service trade, and retail sales.
BLS: employment, consumer price index, and producer price index.
Federal Reserve Bank of St. Louis: adjusted monetary base and MZM.
IMF: foreign exchange reserves and real effective exchange rate.
OECD1: government debt and budget balance.
OECD2: hourly earnings, stock exchange index, and unemployment.

International Economic Trends

**M2**
Canada: M1 plus all checkable notice deposits and personal term deposits.
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Eurostat: capacity utilization, consumer price index, current account balance, employment, GDP, interest rates, merchandise trade, producer price index, and retail sales.
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IMF: real effective exchange rate.

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BOG: exchange rate.
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IMF: foreign exchange reserves, merchandise and service trade, and real effective exchange rate.
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OECD2: current account balance, GDP, hourly earnings, industrial production, M1, M3, retail sales, interest rates, stock exchange index, and unemployment.

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Eurostat: capacity utilization, consumer price index, and producer price index.
IMF: foreign exchange reserves, merchandise and service trade, and real effective exchange rate.
Istituto Nazionale di Statistica: employment.
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BLS: employment, consumer price index, and producer price index.
Federal Reserve Bank of St. Louis: adjusted monetary base and MZM.
IMF: foreign exchange reserves and real effective exchange rate.
OECD1: government debt and budget balance.
OECD2: hourly earnings, stock exchange index, and unemployment.