How big is Japan’s debt?

Japan recently has been experiencing a severe recession, with stagnant growth since 1992 and unemployment climbing to the record level of 4.4 percent. One traditional tool to combat recessions has been to increase government spending and/or lower taxes in order to increase demand for goods and services. To pay for this fiscal deficit, governments issue bonds to the public.

Just as individuals have limited funds to repay debt, governments have access to limited real resources and may be forced to default if they accumulate too much debt. Therefore, when governments spend to stimulate the economy, policymakers must consider whether the government can service the debt.

How big is Japan’s debt? The gross debt is the value of total outstanding financial liabilities—bills and bonds. Net debt equals gross debt less financial assets—for instance, shares of stock and bonds—held by the government. The net debt may be more relevant because financial assets can be sold to service the debt.

The Organization for Economic Cooperation and Development (OECD) projects the gross debt and net debt of Japan to be 109% and 38% of GDP, respectively, at the end of 1999. Japan thus has the lowest net debt—as a percentage of output—among the G-7. It will soon have the highest gross debt among the G-7, however. The difference between Japan’s gross debt and net debt is very large, indicating that the Japanese government holds considerable financial assets. These assets are primarily bonds held for public pension liabilities and holdings accumulated from the government’s role in financial intermediation. The Japanese government has long had an important role in matching savers with borrowers through the Postal Savings system and through the investments of the pension system.

The magnitude of the difference between the gross and net debt figures has contributed to disagreement about the ability of the Japanese government to service its debt. While conceptually, one would want to consider only net debt, two factors suggest that this figure undercounts Japan’s true obligations. First, the Japanese government has enormous future pension obligations for its aging population. The assets set aside for this commitment cover only a small part of it. Second, the assets related to the government’s role in financial intermediation are valued at their acquisition price, which probably overstates their current market value.

Indisputably, the liabilities of the Japanese government are rising rapidly. The OECD projects that the central and local governments in Japan will run a deficit equal to 7.8% of GDP in 1999. By contrast, the largest general (federal, state and local) government deficit of the United States during the 1980s was 4.1% of GDP in 1983. Although the Japanese government retains the resources to cover several more years of stimulative fiscal policy, no government can sustain large deficits indefinitely. Nevertheless, current low yields on long-term Japanese securities suggest that financial markets are not overly concerned about the magnitude of future deficits.

—Christopher J. Neely

Japanese Government Debt as a % of GDP
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Conventions used in this publication:

1. Charts and tables contain data that were current through January, 1999. 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 month t-12 and the current month t is: \[ (x_t / x_{t-12}) - 1 \] x 100.

3. All data with significant seasonal patterns are seasonally adjusted.

Note: The trade-weighted exchange rate index for the U.S. dollar (chart on page 42) has been changed. The new index is a weighted average of the exchange value of the U.S. dollar relative to the currencies of 17 countries. This index is the “major currency” index produced by the Board of Governors of the Federal Reserve System. A detailed description of the new index was published in the October 1998 issue of the Federal Reserve Bulletin. This article is available on-line at: www.bog.frb.fed.us/pubs/bulletin

We welcome your comments addressed to:

Editor, International Economic Trends
Research Division
Federal Reserve Bank of St. Louis
P.O. Box 442
St. Louis, MO 63166

or to:

webmaster@stls.frb.org

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### Real Gross Domestic Product
Percent change

| United States | 2.05 | 2.45 | 3.86 | 3.55 | 3.92 | 4.14 | 3.62 | 4.15 | 3.83 | 4.16 | 3.62 | 3.49 |
| Canada        | 1.11 | 0.68 | 0.89 | 1.50 | 1.75 | 2.72 | 3.86 | 4.25 | 4.38 | 3.86 | 2.92 | 2.28 |
| France        | 0.38 | 1.28 | 0.99 | 1.54 | 2.40 | 1.18 | 2.44 | 2.61 | 3.05 | 3.61 | 3.29 | 2.84 |
| Germany       | 0.03 | 0.39 | 1.04 | 2.11 | 2.47 | 2.17 | 2.36 | 2.31 | 3.39 | 2.37 | 2.68 |     |
| Italy         | 2.62 | 1.70 | 0.74 | 0.45 | -0.23 | -0.88 | 1.98 | 2.19 | 2.76 | 2.46 | 1.21 | 1.18 |
| Japan         | 2.49 | 6.43 | 4.91 | 4.34 | 5.09 | 3.76 | 0.95 | 1.70 | -0.80 | -3.58 | -1.84 | -3.49 |
| United Kingdom| 1.93 | 2.52 | 2.49 | 2.59 | 2.63 | 2.57 | 3.46 | 3.89 | 3.95 | 3.73 | 2.97 | 2.34 |

### Nominal Gross Domestic Product
Percent change

| United States | 4.17 | 4.53 | 5.80 | 5.46 | 5.77 | 6.13 | 5.69 | 6.07 | 5.58 | 5.40 | 4.68 | 4.49 |
| Canada        | 3.49 | 2.13 | 2.23 | 2.96 | 3.67 | 4.51 | 4.75 | 4.62 | 4.11 | 3.31 | 2.68 | 1.74 |
| France        | 2.13 | 2.87 | 2.43 | 2.49 | 3.14 | 1.95 | 3.44 | 3.65 | 3.94 | 4.41 | 3.91 |     |
| Germany       | 2.12 | 2.42 | 2.04 | 2.29 | 2.69 | 3.32 | 2.89 | 2.90 | 2.83 | 4.05 | 3.53 | 3.74 |
| Italy         | 9.05 | 7.93 | 5.93 | 5.13 | 3.78 | 1.95 | 4.41 | 4.61 | 5.66 | 5.56 | 4.07 | 3.74 |
| Japan         | 2.21 | 5.36 | 4.04 | 2.52 | 2.83 | 2.75 | 1.15 | 1.99 | -0.00 | -2.33 | -1.67 | -3.42 |
| United Kingdom| 4.61 | 5.91 | 5.79 | 6.23 | 5.68 | 5.24 | 6.00 | 6.96 | 6.88 | 5.99 | 5.42 | 4.24 |

### Consumer Price Index
Percent change

| United States | 2.78 | 2.83 | 2.94 | 3.18 | 2.90 | 2.36 | 2.16 | 1.89 | 1.50 | 1.62 | 1.62 | 1.55 |
| Canada        | 1.45 | 1.41 | 1.43 | 1.98 | 2.05 | 1.65 | 1.77 | 1.06 | 1.05 | 0.94 | 0.87 |     |
| France        | 2.08 | 2.42 | 1.79 | 1.69 | 1.52 | 0.86 | 1.32 | 1.14 | 0.61 | 1.04 | 0.61 | 0.34 |
| Germany       | 1.62 | 1.53 | 1.48 | 1.39 | 1.68 | 1.58 | 1.88 | 1.79 | 1.16 | 1.30 | 1.80 | 0.64 |
| Italy         | 4.72 | 4.08 | 3.10 | 2.67 | 2.44 | 1.58 | 1.58 | 1.56 | 1.71 | 1.78 | 1.85 |     |
| Japan         | -0.34 | 0.06 | 0.17 | 0.48 | 0.60 | 2.02 | 2.05 | 2.15 | 1.97 | 0.54 | -0.19 |     |
| United Kingdom| 2.71 | 2.32 | 2.18 | 2.61 | 2.65 | 2.67 | 3.45 | 3.68 | 3.40 | 4.05 | 3.34 |     |

### Employment Growth
Percent change

| United States | 0.59 | 1.33 | 1.80 | 2.06 | 2.40 | 2.42 | 2.11 | 2.06 | 1.82 | 1.49 | 1.20 | 1.34 |
| Canada        | 1.26 | 1.25 | 1.17 | 1.33 | 0.93 | 1.73 | 2.44 | 2.49 | 2.91 | 2.71 | 2.22 | 3.15 |
| France        | 0.33 | -0.07 | -0.46 | 0.06 | 0.16 | 0.60 | 1.08 | 1.29 | 1.86 | 1.92 | 2.07 |     |
| Germany       | -1.14 | -1.06 | -1.23 | -1.56 | -1.57 | -1.52 | -1.35 | -0.90 | -0.51 | -0.21 | 0.30 |     |
| Italy         | 0.23 | 0.12 | 0.09 | -0.23 | -0.43 | -0.32 | -0.14 | 0.23 | 0.28 | 0.27 |     |     |
| Japan         | -0.02 | 0.29 | 0.69 | 0.84 | 1.62 | 1.36 | 0.69 | 0.71 | 0.05 | -0.74 | -0.94 |     |
| United Kingdom| 2.99 | 3.26 | 1.81 | 1.69 | 2.13 | 2.44 | 2.21 | 2.54 | 2.57 | 1.75 | 1.92 |     |

### Unemployment Rate
Percent

| United States | 5.60 | 5.60 | 5.40 | 5.30 | 5.30 | 4.90 | 4.90 | 4.70 | 4.70 | 4.40 | 4.50 |     |
| Germany       | 8.40 | 8.70 | 8.80 | 8.90 | 9.20 | 9.60 | 9.90 | 10.10 | 10.30 | 10.00 | 9.80 | 9.50 |
| Italy         | 11.90 | 12.00 | 12.00 | 12.00 | 12.20 | 12.10 | 12.10 | 12.10 | 12.10 | 12.30 | 12.30 | 12.30 |
| Japan         | 3.30 | 3.30 | 3.50 | 3.30 | 3.30 | 3.30 | 3.50 | 3.40 | 3.40 | 4.20 | 4.20 |     |
| United Kingdom| 8.50 | 8.40 | 8.30 | 8.10 | 7.90 | 7.40 | 7.30 | 6.80 | 6.50 | 6.40 | 6.30 | 6.20 |
### Reserve Money Growth

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**Federal Reserve Bank of St. Louis**
International Economic Trends—Japan

Federal Reserve Bank of St. Louis
Monthly Earnings and Output per Worker

Labor Force Indicators

Real Saving and Real Investment

Government Debt and Budget Surplus or Deficit (-)
International Economic Trends—U.K.

**M0 Growth**
Percent change


**Interest Rates**
Percent


**M2 Growth**
Percent change


**Exchange Rate and Inflation Differential**
Pounds/US$


**M4 Growth**
Percent change


**Real Effective Exchange Rate**
Index 1990 = 100


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 1990 = 100
Notes

German Data  – As a result of reunification, data for all of Germany are now incorporated in most of 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. Data for capacity utilization and hourly earnings remain for western Germany only.

Third quarter 1990: current account balance, international trade and monetary aggregates.
First quarter 1991: CPI, GDP, industrial production, investment and saving.
First quarter 1992: employment and output per worker.
First quarter 1993: stock exchange index and unemployment rate.
First quarter 1994: retail sales.

Capacity Utilization covers the manufacturing sector for Canada, France, Japan, the United Kingdom, and the United States; 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 and Italy; all households for France; households with a monthly income of less than 25,000 DM for Germany; 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.

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 foreign assets in the domestic economy plus net unilateral transfers.

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

The Real Effective Exchange Rate uses normalized unit labor costs in manufacturing. The weighting scheme used to construct the rates is based on disaggregated data for trade among 17 industrial countries in manufactured goods for 1989-91. 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 and the United States; industrial employment for France; employed persons excluding conscripts for Italy; and total employment for Japan and the United Kingdom.

Fluctuations in the dollar value of Foreign Exchange Reserves occur as a result of changes in reserve holdings and/or changes in the dollar value of the currencies held.

Government Surplus 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.

The Inflation Differential is the difference between the U.S. inflation rate and the foreign inflation rate, as measured by the consumer price index. For the U.S. chart on page 42, the inflation differential is the difference between the U.S. inflation rate and a weighted average of the inflation rates in the 17 countries used in the major currency trade-weighted exchange index.

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 relevant government bond rate shown in the country pages. The government bond rate is a composite of yields on Federal government bonds with maturities of more than 10 years for Canada and the United States; long-term public and semi-public sector bonds for France; 7-15 year public sector bonds for Germany; 15-20 year government bonds through 1990, and 10-year government bonds starting in 1991 for Italy; 10-year government bonds for Japan and the United Kingdom.

Investment is gross fixed capital formation and changes in stocks (inventories) of the government and business sectors.

The Reserve Money table on page 4 refers to the monetary base for Italy; the adjusted monetary base for Japan and the United States; central bank money for Germany; reserve money for Canada and France; 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.

Monetary Base
Italy  – currency in circulation and bank reserves.

Adjusted Monetary Base
Japan  – currency in circulation, reserve requirements and an adjustment for the effects of changes in reserve requirement ratios.
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.

Central Bank Money
Germany  – currency in circulation plus minimum reserves on domestic liabilities at constant reserve ratios, excluding bank bonds subject to reserve requirements.

M0

M1
Canada  – currency in circulation and chartered bank net demand deposits. France  – currency in circulation and sight deposits held by residents of the non-financial sector.
Germany  – currency in circulation (excluding credit institutions’ cash balances) and domestic non-bank sight deposits.
Italy  – currency in circulation, sight deposits and other assets.
Japan  – cash, currency in circulation and deposit money.

MZM
United States  – currency in circulation, travelers’ checks and 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.

M2
Canada  – M1 plus all checkable notice deposits and personal term deposits. Italy  – M1 plus certificates of deposit, bank savings, and postal savings deposits.
United Kingdom  – currency in circulation and sterling retail deposits with the UK banks and building societies. In December 1992, the definition of retail deposits was changed, so care should be exercised when making comparisons around this date.
United States  – M2M 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
France  – M1 plus sight investments in francs, deposits and certificates of credit in foreign currencies, time and saving deposits and franc denominated securities.
Germany  – M1 plus domestic non-bank time deposits of less than four years, and domestic non-bank savings deposits at three-month’s notice.
**M4**
United Kingdom – M2 plus wholesale deposits with the UK banks and building societies.

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

**Retail Sales** are based on a volume index.

**Saving** is gross national saving which includes net national saving (receipts less disbursements of households, business and the government) and consumption of fixed capital. Nominal saving is deflated using the investment deflator.

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

The trade-weighted exchange rate, **TWEX**, is the Board of Governors of the Federal Reserve System’s major currency trade-weighted dollar exchange rate. This is a weighted average of the exchange value of the U.S. dollar relative to the major international currencies of 17 industrial countries.

The **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**
Except as noted below, all data are from the Organization for Economic Cooperation and Development (OECD). For more details on these data see: OECD, *Main Economic Indicators, Sources and Definitions* 1997, July 1997. This publication is available on the Internet at: http://www.oecd.org/std/meta.htm.

**Bank of Canada**
M1 and M2 (Canada)

**Bank of Japan**
Monetary aggregates (Japan), long-term interest rate (Japan), employment (Japan)

**Bank of Italy**
Monetary aggregates, long-term interest rate (Italy)

**Board of Governors of the Federal Reserve System**
Exchange rates, short and long-term interest rates (U.S.), M2 (U.S.), industrial production index (U.S.), capacity utilization (U.S.)

**Bureau of Economic Analysis (BEA), U.S. Department of Commerce**
Gross domestic product (U.S.), current account balance (U.S.), merchandise and service trade (U.S.)

**Bureau of Labor Statistics (BLS), U.S. Department of Labor**
Employment (U.S.), consumer price index (U.S.)

**Deutsche Bundesbank**
Central bank money (Germany)

**Federal Reserve Bank of St. Louis**
Adjusted monetary base (U.S.) and MZM (U.S.)

**Ministere du Travail et des Affaires Sociales**
Employment (France)

**Istituto Centrale di Statistica**
Employment (Italy)

**International Monetary Fund (IMF)**
Foreign exchange reserves, reserve money (Canada and France), merchandise and service trade (except U.S.), and real effective exchange rate. For more details on these data see: *IMF, International Financial Statistics*.

**Statistics Canada**
Employment (Canada)

**Bundesanstalt Fur Arbeit**
Employment (Germany)

**U.K. Office for National Statistics**
Employment (U.K.) and M0 (U.K.)