

## International Trade Integration and Business Cycle Synchronization

**T**rade and international capital flows have grown rapidly in recent years. The sum of U.S. exports to the rest of the world (ROW) plus imports from the ROW, as a percentage of gross domestic product (GDP), increased by 50 percent from 1974 to 2007.<sup>1</sup> Cross-country financial holdings also increased substantially during this period. U.S. international portfolio investments increased from 2 percent to 29 percent of U.S. capital stock from 1974 to 2007; foreign asset holdings in the United States similarly increased.

Although trade has grown and investors have diversified their international asset holdings, U.S. output and consumption commove less with those in the ROW. In particular, the correlation between U.S. real output and that of the ROW sharply declined, while the correlation between U.S. real consumption and that of the ROW declined much more modestly. The U.S.-ROW GDP correlation declined from 0.71 to 0.26 between 1974 and 1985 and 1986 and 2007, while the U.S.-ROW consumption correlation declined from 0.37 to 0.27 across the same periods (see the table).<sup>2</sup>

The changes in international trade and finance are linked to the changes in business cycle correlations.<sup>3</sup> Because trade integration tends to increase specialization in production, it may reduce output correlation across countries when asymmetric industry-specific shocks occur. For example, a positive shock to production in the auto industry will increase production in car-producing countries but reduce it in others. On the other hand, greater international asset diversification increases the ability of countries to share risks, thereby insuring each other against declines in consumption (see the chart). For example, when the U.S. stock market declines, U.S. consumers can offset some of their losses with asset holdings in other countries. As a consequence, people can continue to consume at nearly normal rates, even during a recession. Thus, consumption correlations may decrease by less than output correlations or even increase.

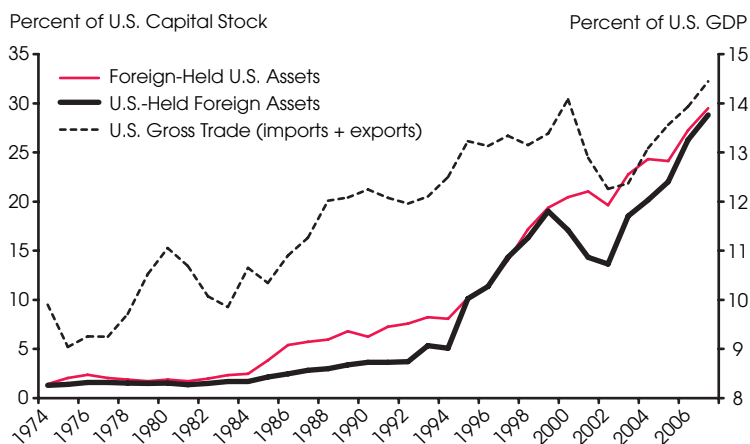
—Luciana Juvenal

### Real Output and Real Consumption Correlations

Period	$Y_{US}, Y_{ROW}$	$C_{US}, C_{ROW}$
1974-2007	0.52	0.33
1974-1985	0.71	0.37
1986-2007	0.26	0.27

NOTE: The table shows the correlations calculated on filtered quarterly series taken from the Organisation for Economic Co-operation and Development. The series are expressed at 2000 national currency constant prices and converted into U.S. dollars using 2000 purchasing power parity exchange rates.

### U.S. Assets, Liabilities, and Trade



NOTE: Asset holdings are measured on the left axis, and gross trade is measured on the right axis.

SOURCE: Bureau of Economic Analysis and International Monetary Fund.

<sup>1</sup> The ROW series are an aggregate of Canada, Japan, and Europe. Europe includes the following 15 countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Norway, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

<sup>2</sup> The selection of 1985 as a breakpoint is related to the moderation of the U.S. business cycle.

<sup>3</sup> Juvenal, Luciana and Santos Monteiro, Paulo. "Trade Integration and Financial Globalization." Unpublished manuscript, Federal Reserve Bank of St. Louis, 2009.

# Contents

---

## Page

3	Reference Tables
5	Canada
11	Euro Area
16	France
20	Germany
24	Italy
28	Japan
34	United Kingdom
40	United States
46	Notes and Sources

## Conventions used in this publication:

1. Charts and tables contain data that were current through October 2009. 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:  $[(x_t/x_{t-4})-1] \times 100$ .
3. All data with significant seasonal patterns are adjusted accordingly.

Due to a new earnings statistics law, hourly earnings data published by the German National Statistical Office now incorporate wage and salary employees. Data prior to 2007 are not strictly comparable with the new figures.

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 63166-0442

Slovakia joined the euro area on January 1, 2009.  
The Notes section details the Slovakian data.

or to:

stlsIET@stls.frb.org

**Real Gross Domestic Product**

Percent change from year ago

	06.3	06.4	07.1	07.2	07.3	07.4	08.1	08.2	08.3	08.4	09.1	09.2
Canada	2.42	1.91	1.82	2.57	2.97	2.76	1.66	0.70	0.28	-0.95	-2.31	-3.23
Euro Area	3.09	3.48	3.43	2.68	2.69	2.18	2.18	1.46	0.44	-1.75	-4.94	-4.78
France	2.30	2.41	2.55	1.87	2.47	2.16	1.87	1.00	0.12	-1.70	-3.50	-2.81
Germany	3.51	4.31	3.77	2.58	2.47	1.58	2.86	1.96	0.83	-1.75	-6.72	-5.90
Italy	1.92	2.56	2.22	1.89	1.57	0.31	0.31	-0.31	-1.24	-3.11	-5.88	-6.21
Japan	1.70	2.08	3.21	2.26	1.82	1.86	1.41	0.66	-0.33	-4.49	-8.40	-7.22
United Kingdom	2.66	2.80	2.42	2.70	2.71	2.41	2.30	1.57	0.34	-1.97	-4.99	-5.48
United States	2.23	2.45	1.42	1.86	2.74	2.53	2.04	1.60	0.03	-1.86	-3.30	-3.83

**Nominal Gross Domestic Product**

Percent change from year ago

	06.3	06.4	07.1	07.2	07.3	07.4	08.1	08.2	08.3	08.4	09.1	09.2
Canada	4.90	3.10	4.46	6.09	5.77	6.56	5.33	5.74	5.97	0.77	-3.80	-6.67
Euro Area	5.15	5.40	5.86	5.16	5.20	4.61	4.34	3.83	2.78	0.69	-3.11	-3.74
France	4.88	4.92	5.16	4.53	5.11	4.45	4.33	3.50	2.58	0.81	-1.64	-1.54
Germany	3.98	5.09	5.57	4.53	4.61	3.58	4.21	3.40	2.25	0.15	-5.27	-4.63
Italy	3.90	3.57	4.66	3.49	4.02	3.18	2.62	3.12	1.55	0.00	-2.55	.
Japan	0.80	1.59	2.77	1.97	1.03	0.63	0.31	-0.77	-1.95	-3.89	-7.38	-6.16
United Kingdom	6.71	5.96	5.52	6.10	5.39	5.03	5.23	4.31	2.84	0.85	-3.87	-4.13
United States	5.58	5.39	4.64	4.87	5.40	5.34	4.19	3.58	2.59	0.07	-1.36	-2.39

**Consumer Price Index**

Percent change from year ago

	06.3	06.4	07.1	07.2	07.3	07.4	08.1	08.2	08.3	08.4	09.1	09.2
Canada	1.70	1.39	1.88	2.13	2.10	2.44	1.82	2.32	3.42	1.92	1.26	0.02
Euro Area	2.16	1.80	1.92	1.87	1.87	2.89	3.37	3.63	3.84	2.31	0.96	0.16
France	1.90	1.53	1.32	1.24	1.33	2.54	3.32	3.68	3.63	2.03	0.70	-0.25
Germany	1.61	1.30	1.91	1.96	2.17	3.07	3.08	3.02	3.26	1.68	0.78	0.25
Italy	2.32	1.97	2.05	1.84	1.68	2.59	3.28	3.77	4.06	2.91	1.35	0.86
Japan	0.58	0.31	-0.07	-0.05	-0.16	0.51	1.00	1.37	2.15	1.02	-0.12	-0.98
United Kingdom	2.40	2.72	2.88	2.56	1.76	2.10	2.40	3.36	4.81	3.88	3.02	2.11
United States	3.34	1.95	2.44	2.64	2.32	4.04	4.20	4.27	5.23	1.53	-0.18	-0.94

**Employment**

Percent change from year ago

	06.3	06.4	07.1	07.2	07.3	07.4	08.1	08.2	08.3	08.4	09.1	09.2
Canada	1.91	1.91	2.47	2.00	2.30	2.45	2.07	1.91	1.35	0.79	-1.09	-1.67
Euro Area	1.65	1.71	1.80	1.73	1.88	1.70	1.54	1.13	0.46	-0.11	-1.26	-1.78
France	1.30	1.29	1.89	1.71	1.68	1.83	1.40	0.88	0.21	-0.88	-2.19	-2.50
Germany	0.82	0.88	1.78	1.66	1.57	1.66	1.62	1.49	1.38	1.08	0.42	-0.07
Italy	1.76	1.57	0.71	0.53	1.53	1.05	0.84	0.30	-0.63	-0.95	-1.92	-2.64
Japan	0.19	0.69	0.43	0.91	0.30	0.24	0.10	-0.41	-0.61	-0.76	-0.76	-2.06
United Kingdom	0.28	0.36	0.33	0.44	0.89	0.70	0.87	0.67	-0.08	-1.16	-1.92	-2.57
United States	1.60	2.10	1.85	1.25	0.97	0.45	0.04	0.08	-0.46	-1.52	-3.12	-3.70

**Unemployment Rate**

Percent

	06.3	06.4	07.1	07.2	07.3	07.4	08.1	08.2	08.3	08.4	09.1	09.2
Canada*	6.43	6.17	6.13	6.03	5.97	5.90	5.93	6.10	6.17	6.43	7.63	8.33
Euro Area*	8.17	8.00	7.70	7.50	7.47	7.33	7.23	7.37	7.60	8.03	8.77	9.30
France*	9.17	8.97	8.77	8.47	8.20	7.90	7.63	7.63	7.87	8.27	8.90	9.37
Germany*	9.60	9.23	8.77	8.47	8.27	8.00	7.60	7.37	7.17	7.10	7.30	7.63
Italy*	6.60	6.50	6.00	5.90	6.20	6.40	6.60	6.80	6.80	6.90	7.40	7.40
Japan*	4.10	4.03	4.00	3.80	3.80	3.83	3.83	4.03	4.03	4.03	4.43	5.20
United Kingdom*	5.47	5.47	5.50	5.30	5.27	5.13	5.13	5.27	5.83	6.33	7.07	7.67
United States*	4.63	4.43	4.50	4.53	4.70	4.80	4.93	5.37	6.07	6.87	8.07	9.27

\* Copyright ©, 2009, Organisation for Economic Cooperation and Development, OECD Main Economic Indicators ([www.oecd.org](http://www.oecd.org)).

**Reserve Money**

Percent change from year ago

	06.3	06.4	07.1	07.2	07.3	07.4	08.1	08.2	08.3	08.4	09.1	09.2
Canada	5.79	5.94	5.66	5.43	5.63	4.89	2.88	3.64	2.42	5.45	7.45	12.93
Japan	-21.27	-20.11	-18.88	-4.25	0.65	0.14	0.17	0.29	0.85	1.68	7.00	6.26
United Kingdom	5.24	5.31	4.06	4.31	4.89	5.56	6.44	6.05	5.40	6.73	8.14	8.65
United States	3.16	2.71	1.90	1.62	2.11	1.81	1.18	1.12	4.76	67.58	94.22	105.23

**Narrow Money**

Percent change from year ago

	06.3	06.4	07.1	07.2	07.3	07.4	08.1	08.2	08.3	08.4	09.1	09.2
Canada	9.19	9.84	9.48	9.34	10.27	7.18	7.42	7.98	7.86	12.41	12.63	12.62
Euro Area	7.51	7.63	7.28	6.50	6.55	4.11	2.89	1.61	1.67	3.73	7.12	10.16
Japan	1.65	0.08	-0.10	-0.26	-0.30	0.51	-0.30	-0.45	-0.44	-1.04	-0.01	0.43
United Kingdom	7.89	7.99	7.53	7.25	7.39	6.69	6.66	6.43	5.39	4.58	4.16	3.61
United States	4.31	5.11	5.82	7.68	10.10	12.48	15.02	16.06	13.47	11.58	12.16	10.25

**Broad Money**

Percent change from year ago

	06.3	06.4	07.1	07.2	07.3	07.4	08.1	08.2	08.3	08.4	09.1	09.2
Canada	8.15	8.91	8.44	7.93	8.17	6.44	7.36	8.49	8.45	12.35	14.30	14.21
Euro Area	8.72	9.33	10.88	11.15	11.11	11.89	10.97	10.48	9.97	8.57	5.90	4.13
Japan	0.53	0.69	1.07	1.75	1.74	2.08	2.23	2.16	2.19	1.81	2.22	2.47
United Kingdom	14.44	12.74	12.94	13.01	12.92	11.84	11.52	11.39	12.02	16.62	17.80	12.19
United States	4.92	5.23	5.26	5.83	6.09	5.87	6.52	6.48	6.10	8.32	9.42	8.64

**Short-Term Interest Rates**

Percent

	06.3	06.4	07.1	07.2	07.3	07.4	08.1	08.2	08.3	08.4	09.1	09.2
Canada*	4.32	4.32	4.35	4.52	5.11	4.79	3.57	3.16	3.29	2.32	1.06	0.57
Euro Area	3.22	3.59	3.82	4.07	4.50	4.73	4.48	4.86	4.98	4.21	2.01	1.31
Japan*	0.38	0.42	0.54	0.60	0.73	0.76	0.75	0.71	0.74	0.78	0.56	0.34
United Kingdom*	4.85	5.17	5.49	5.72	6.30	6.31	5.69	5.86	5.81	4.60	2.06	1.33
United States	5.39	5.32	5.31	5.32	5.42	5.02	3.23	2.76	3.06	2.82	1.08	0.62

\* Copyright ©, 2009, Organisation for Economic Cooperation and Development, OECD Main Economic Indicators (www.oecd.org).

**Long-Term Interest Rates**

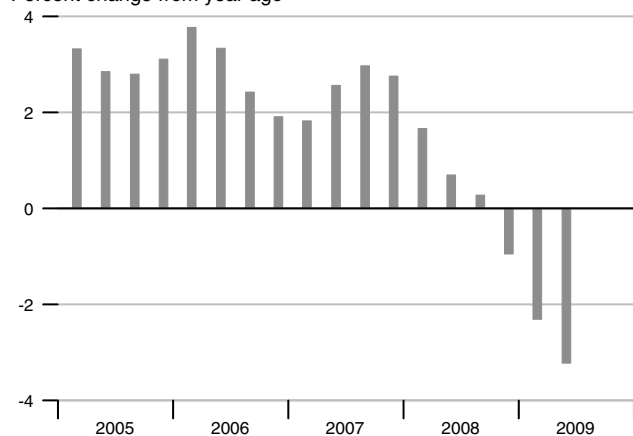
Percent

	06.3	06.4	07.1	07.2	07.3	07.4	08.1	08.2	08.3	08.4	09.1	09.2
Canada*	4.27	4.02	4.08	4.36	4.48	4.17	3.75	3.66	3.62	3.38	2.89	3.20
Euro Area	3.96	3.83	4.08	4.41	4.46	4.34	4.12	4.50	4.55	4.04	3.87	3.94
France*	3.90	3.79	4.06	4.39	4.44	4.33	4.08	4.47	4.48	3.90	3.64	3.79
Germany*	3.88	3.76	4.00	4.33	4.34	4.19	3.93	4.25	4.26	3.50	3.07	3.32
Italy*	4.17	4.03	4.24	4.54	4.64	4.53	4.38	4.78	4.90	4.66	4.54	4.46
Japan	1.80	1.71	1.68	1.75	1.73	1.57	1.40	1.62	1.52	1.43	1.28	1.45
United Kingdom*	4.62	4.60	4.86	5.21	5.18	4.79	4.52	4.91	4.78	4.15	3.54	3.58
United States	5.06	4.80	4.86	5.03	4.98	4.59	4.25	4.46	4.38	3.90	3.55	4.05

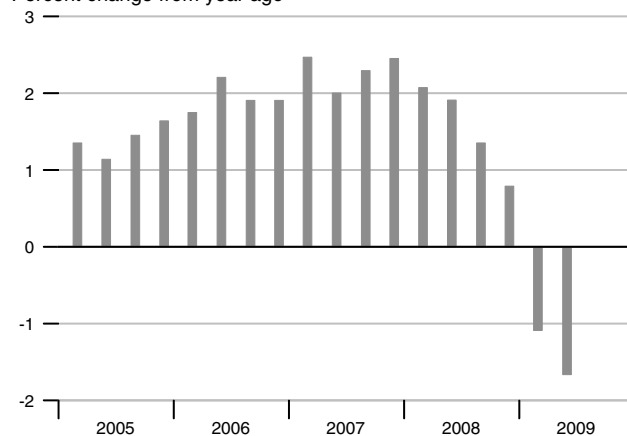
\* Copyright ©, 2009, Organisation for Economic Cooperation and Development, OECD Main Economic Indicators (www.oecd.org).

**Real GDP**

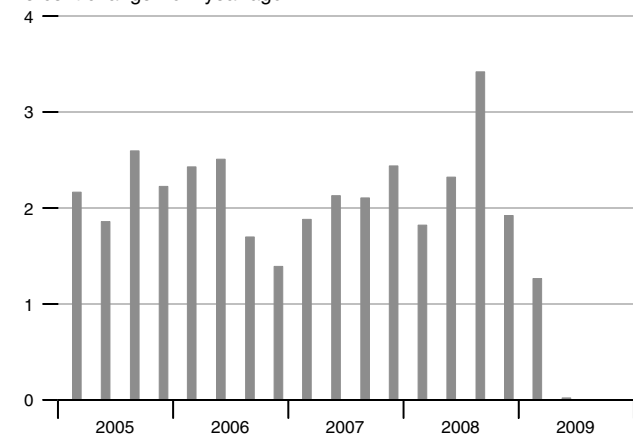
Percent change from year ago

**Employment**

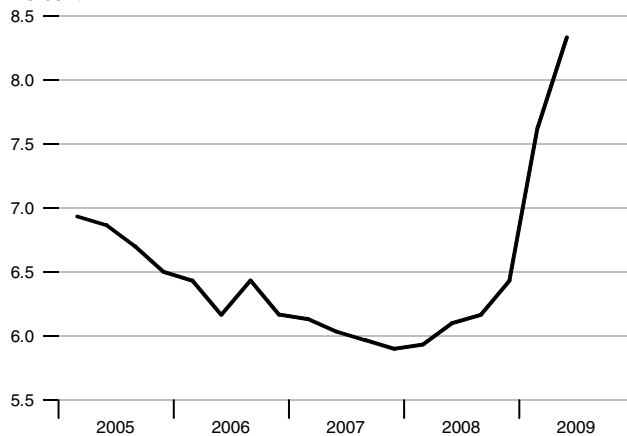
Percent change from year ago

**Consumer Price Index**

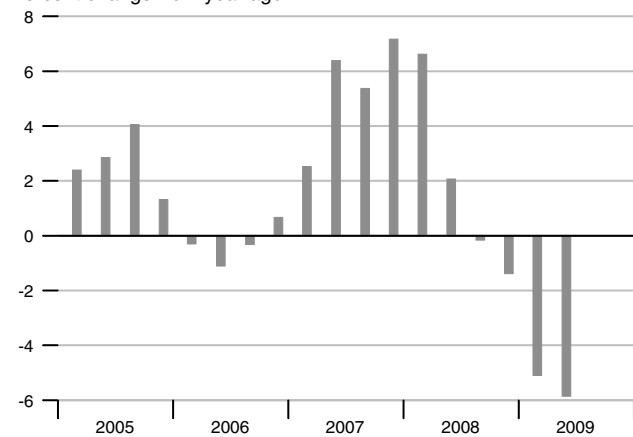
Percent change from year ago

**Unemployment Rate**

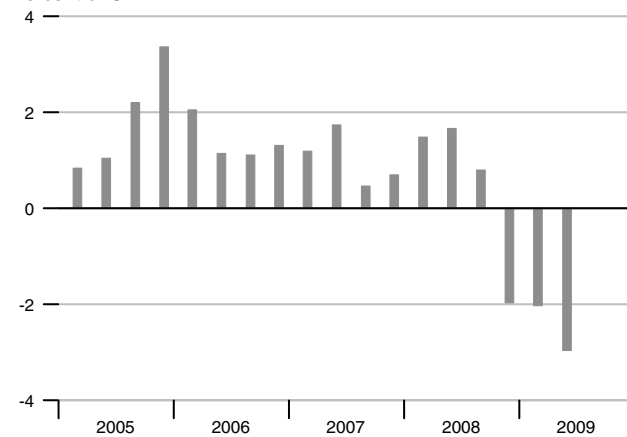
Percent

**Real Hourly Earnings**

Percent change from year ago

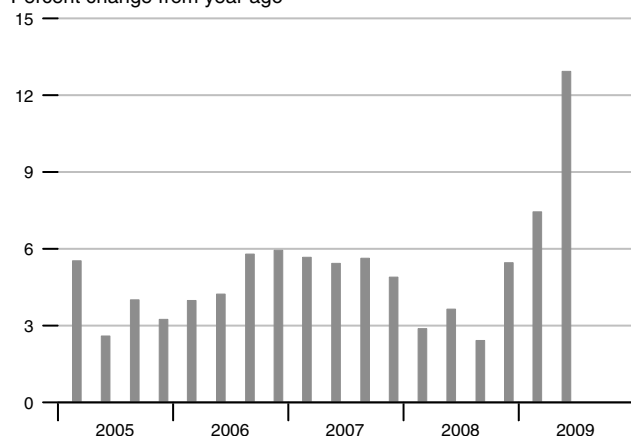
**Current Account Balance**

Percent of GDP



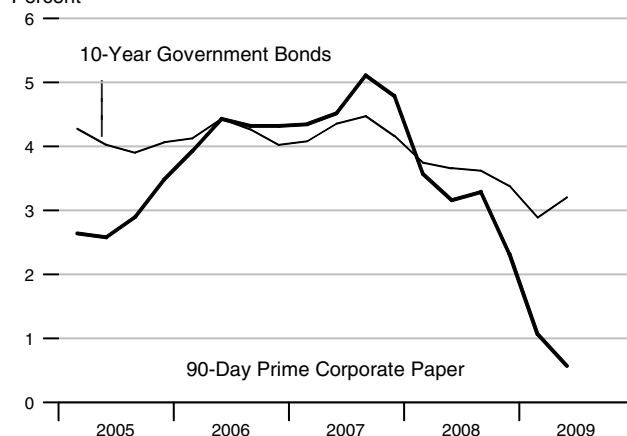
## Reserve Money

Percent change from year ago



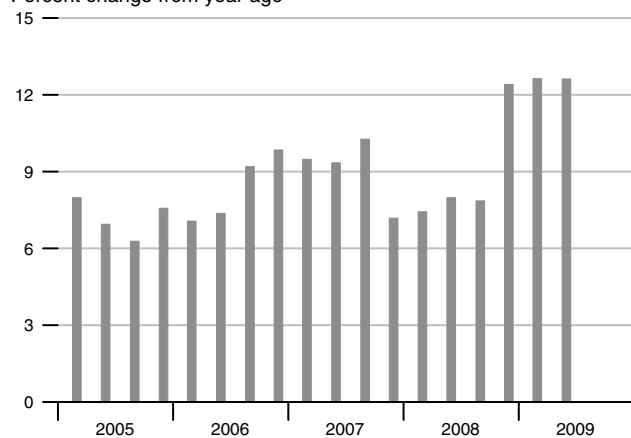
## Interest Rates

Percent



## M1B

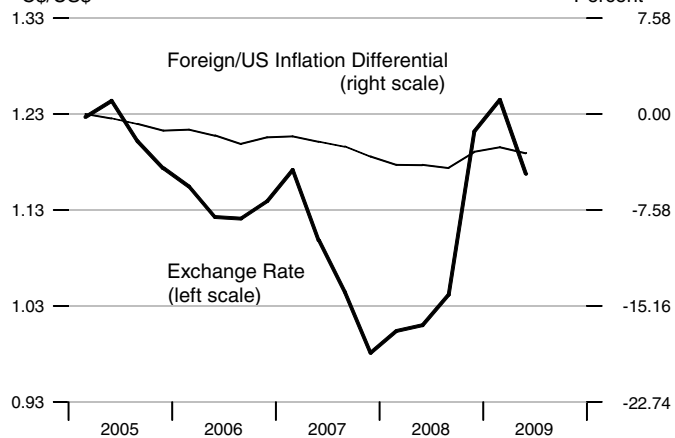
Percent change from year ago



## Exchange Rate and Inflation Differential

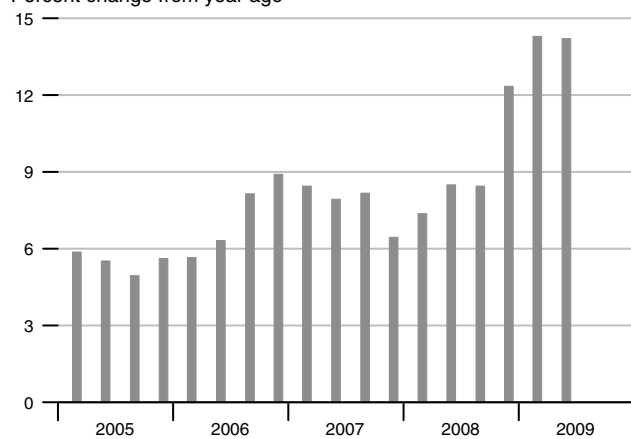
C\$/US\$

Percent



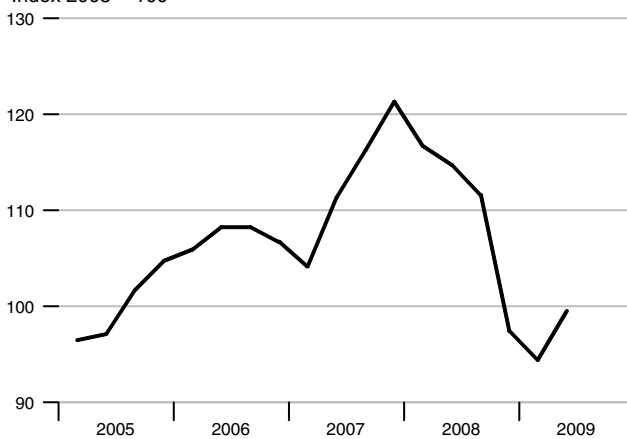
## M2

Percent change from year ago



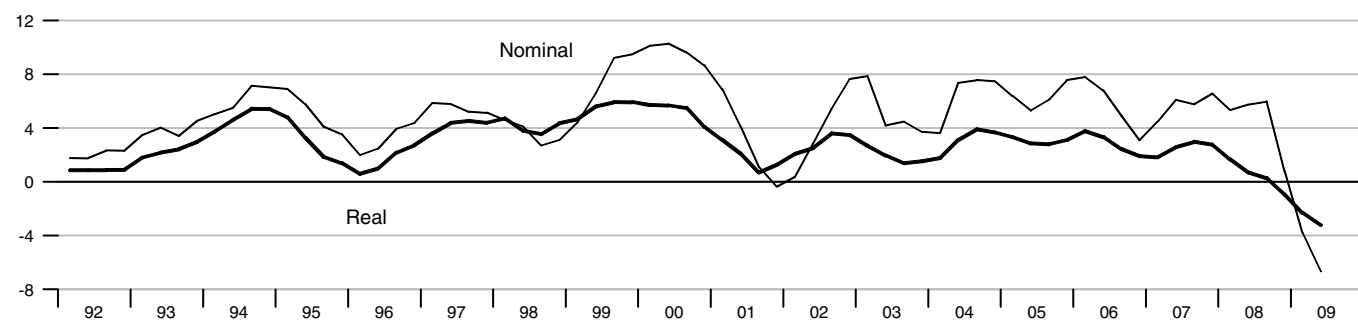
## Real Effective Exchange Rate

Index 2005 = 100

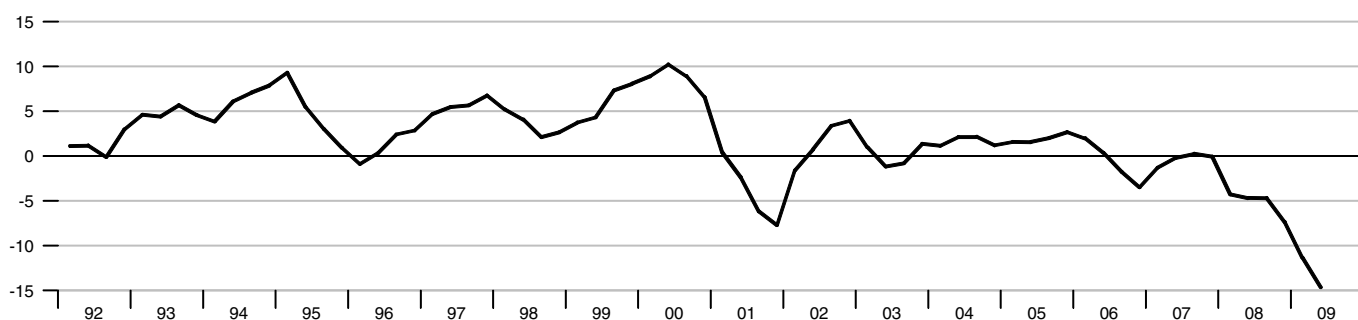


**GDP**

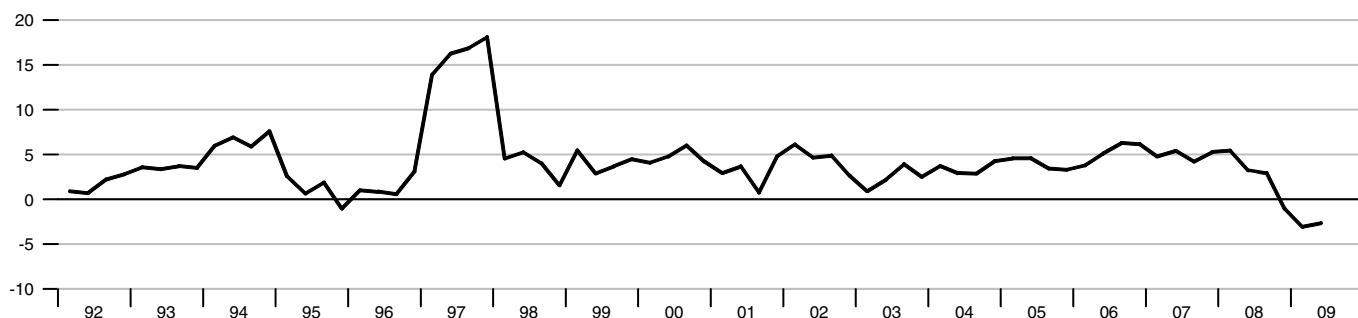
Percent change from year ago

**Industrial Production**

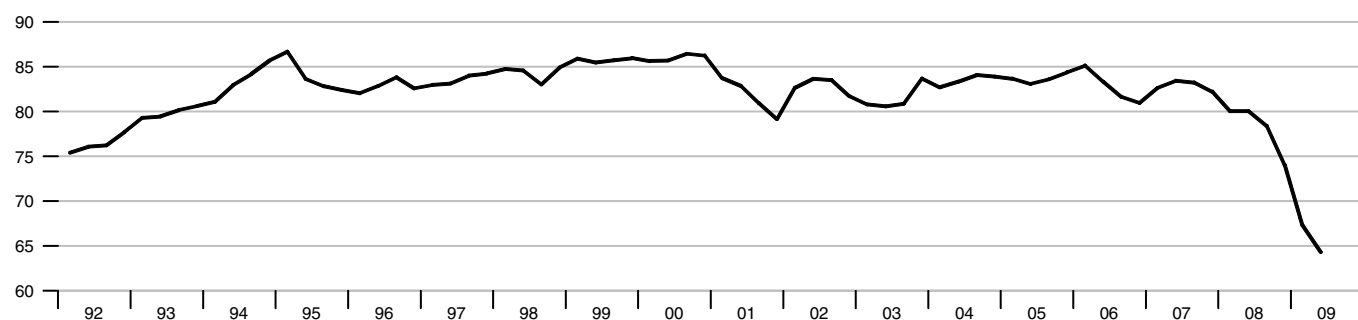
Percent change from year ago

**Retail Sales**

Percent change from year ago

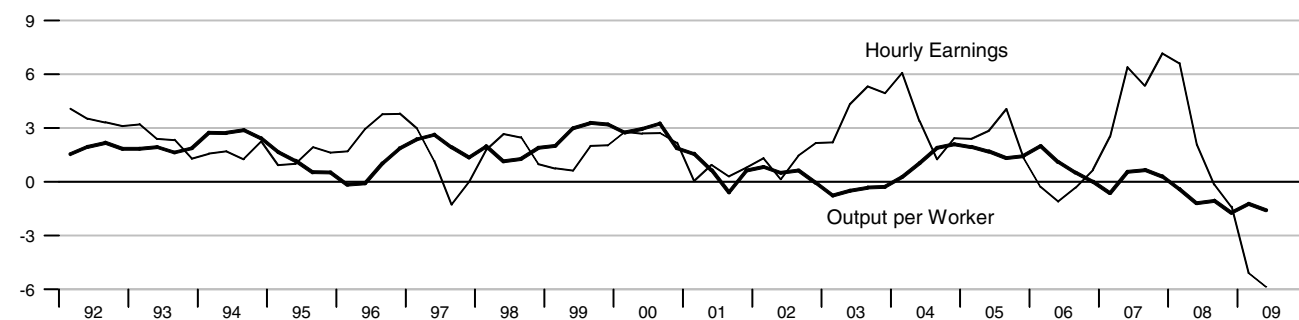
**Capacity Utilization**

Percent



## Real Hourly Earnings and Output per Worker

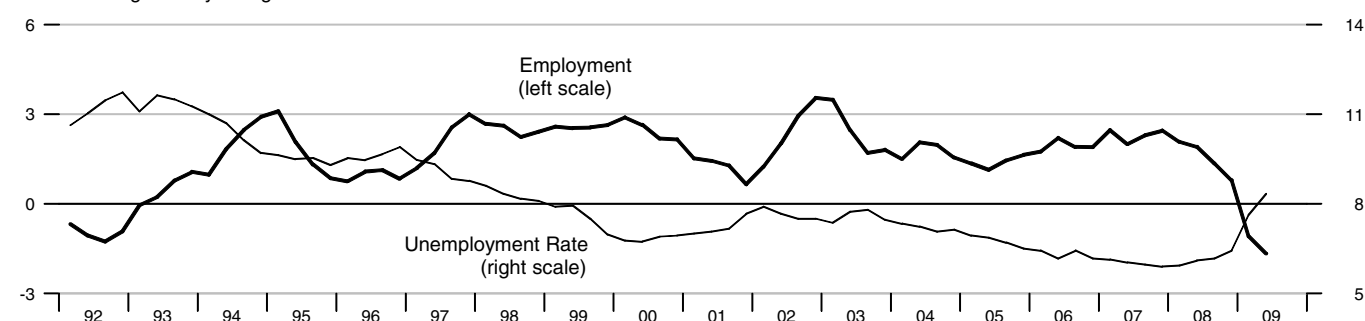
Percent change from year ago



## Labor Force Indicators

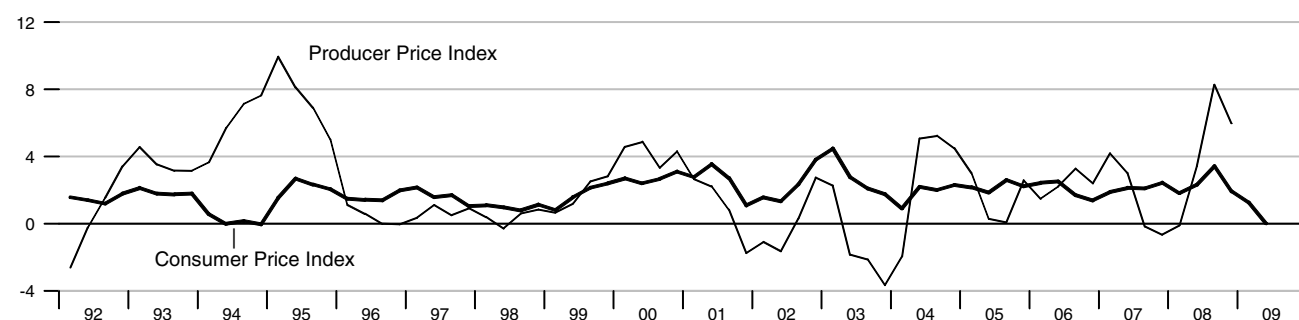
Percent change from year ago

Percent



## Inflation

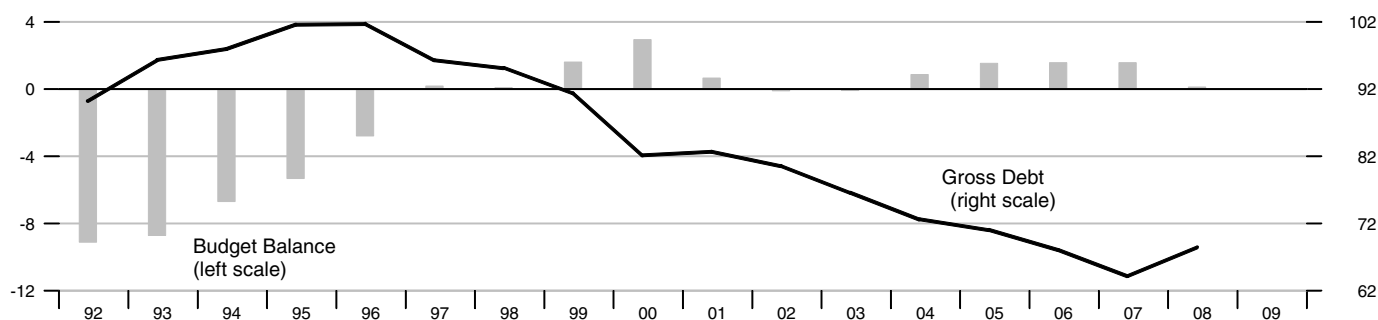
Percent change from year ago



## Gross Government Debt and Budget Balance

Percent of GDP, annual data

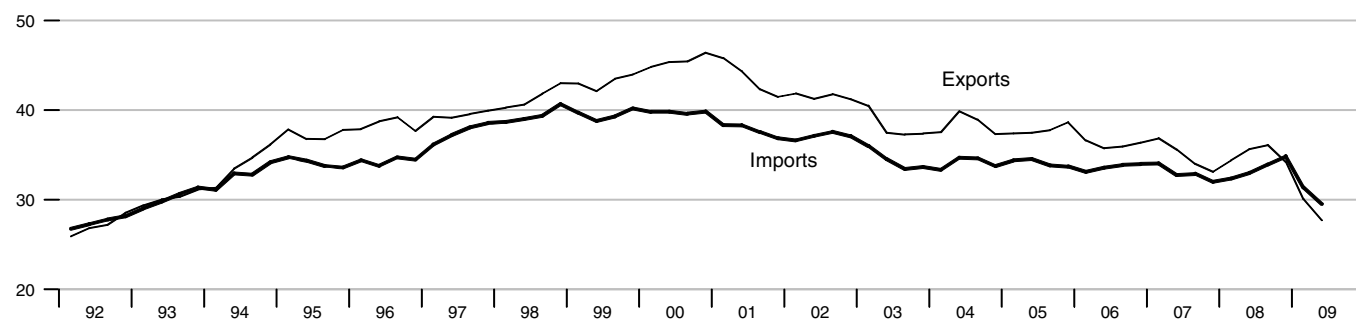
Percent of GDP, annual data



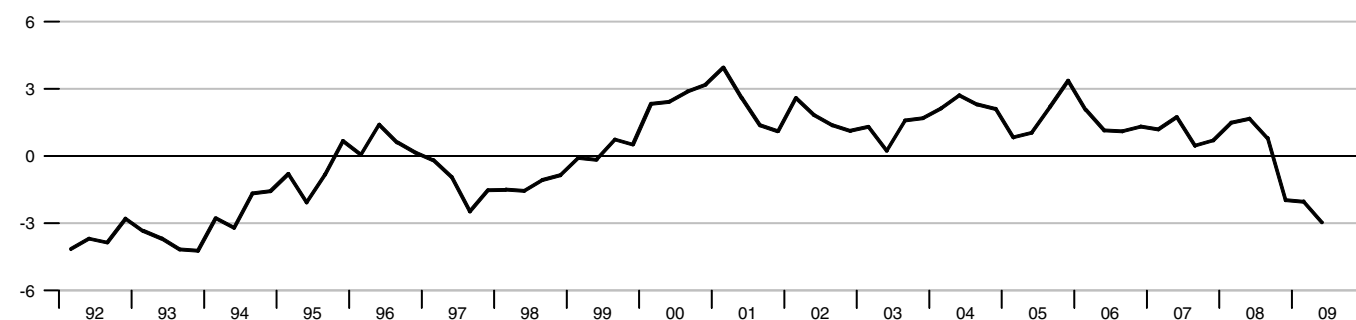


**International Trade - Goods and Services**

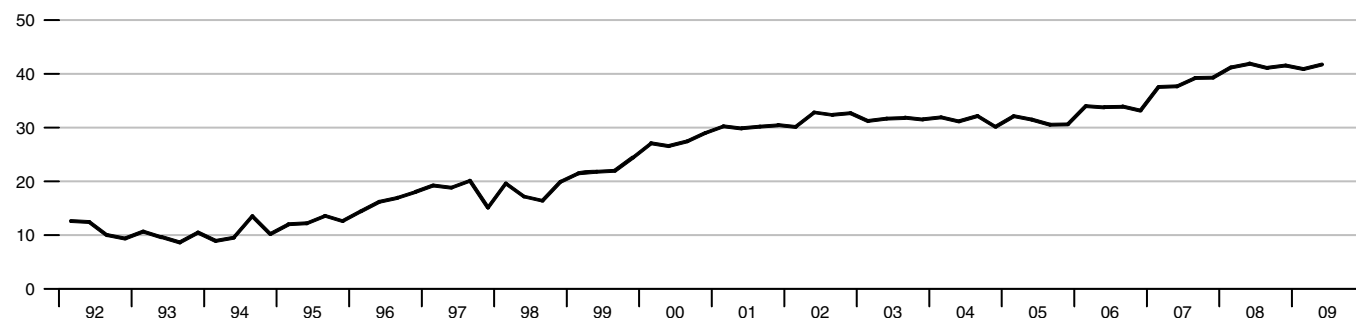
Percent of GDP

**Current Account Balance**

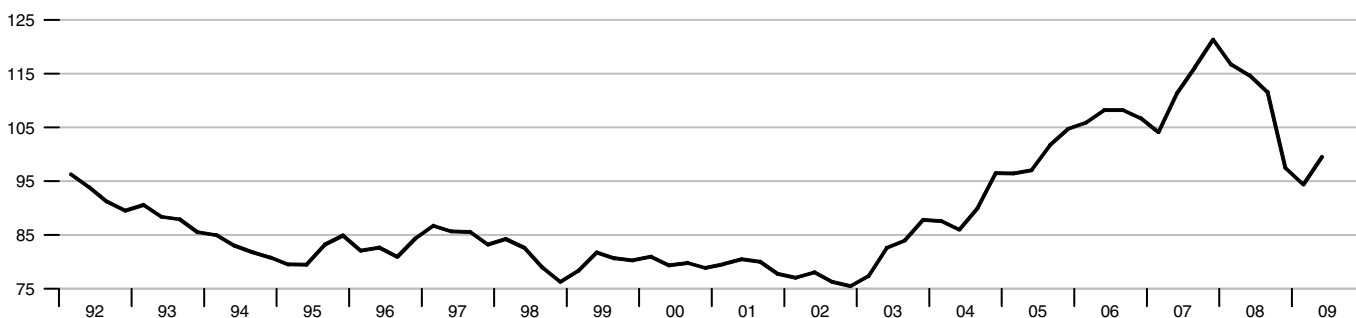
Percent of GDP

**Foreign Exchange Reserves**

Billions of US\$

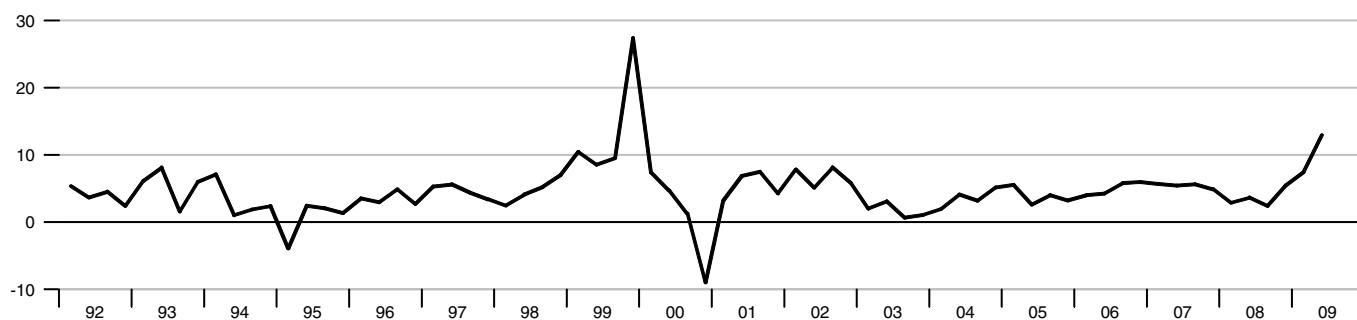
**Real Effective Exchange Rate**

Index 2005 = 100



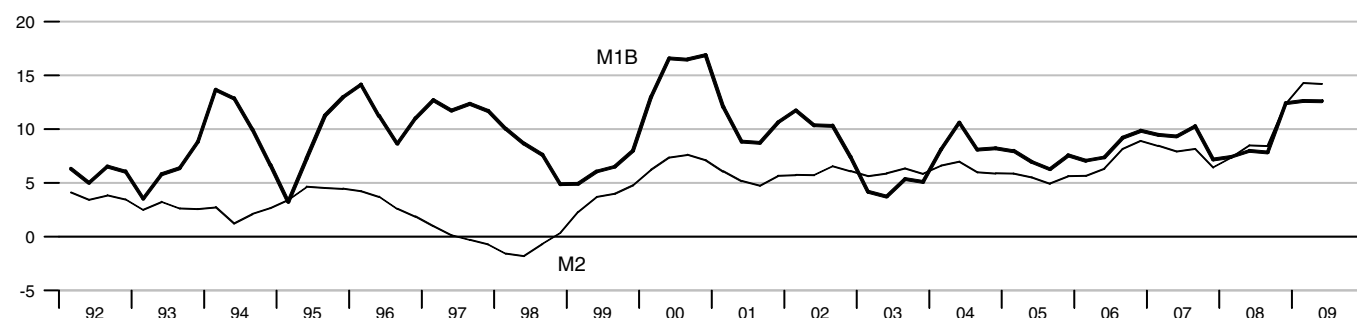
## Reserve Money

Percent change from year ago



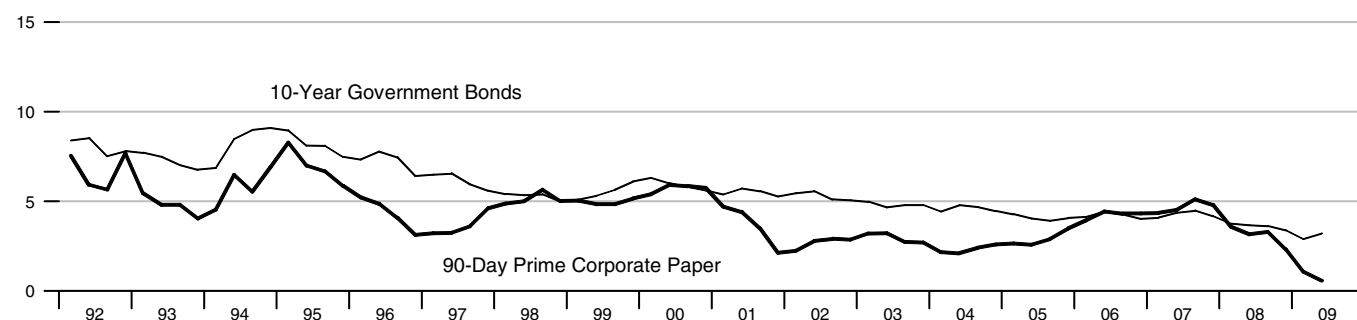
## Monetary Aggregates

Percent change from year ago



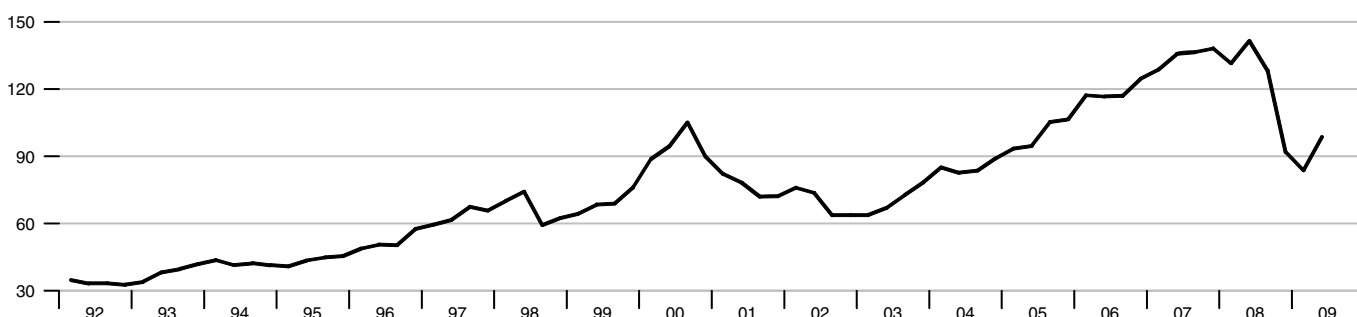
## Interest Rates

Percent



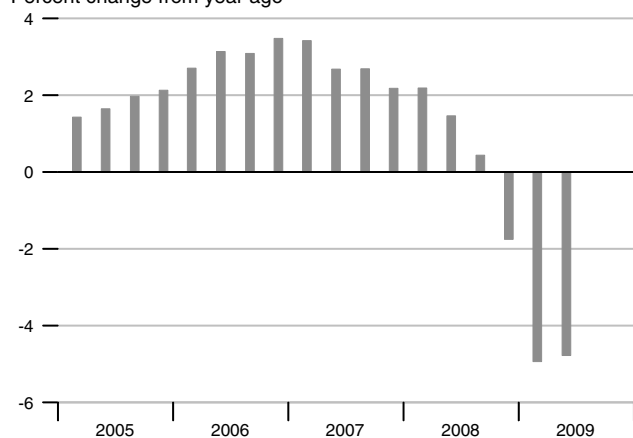
## Stock Exchange Index - Toronto Stock Exchange

2005 = 100

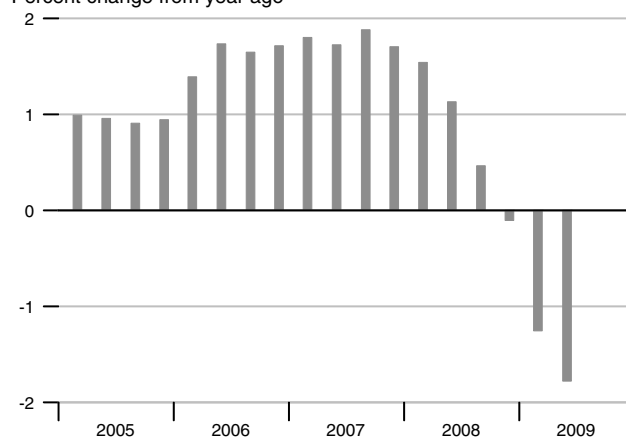


**Real GDP**

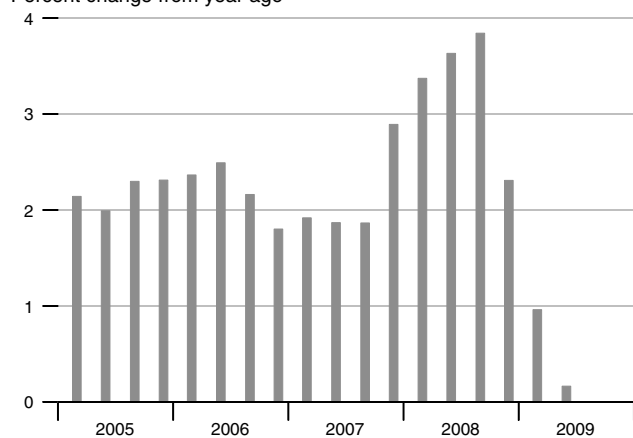
Percent change from year ago

**Employment**

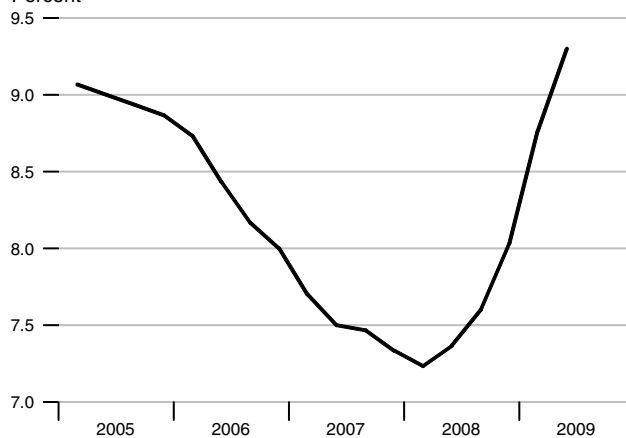
Percent change from year ago

**Consumer Price Index**

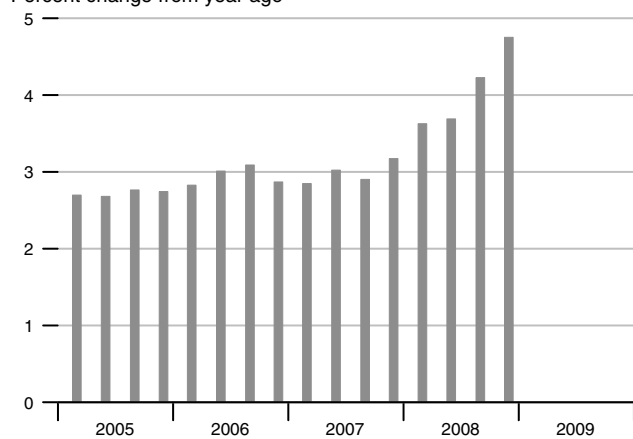
Percent change from year ago

**Unemployment Rate**

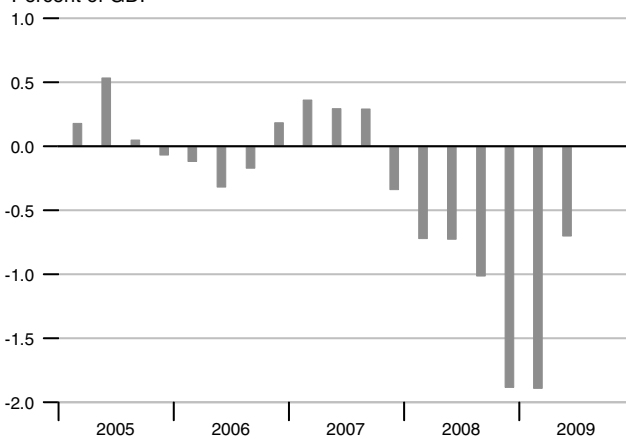
Percent

**Real Hourly Earnings**

Percent change from year ago

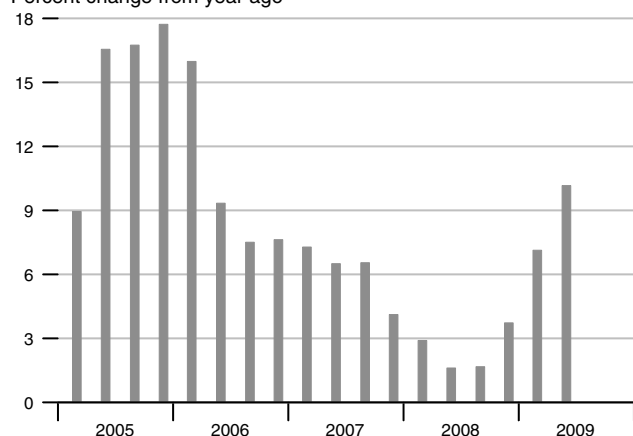
**Current Account Balance**

Percent of GDP



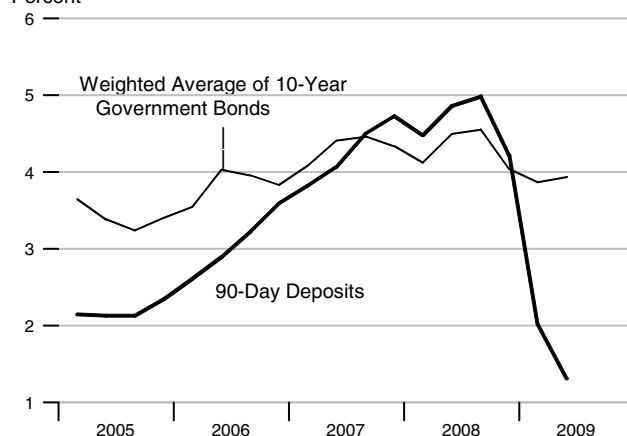
### M1

Percent change from year ago



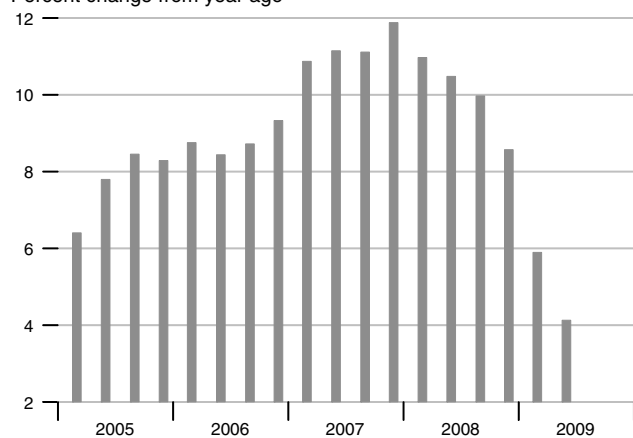
### Interest Rates

Percent



### M3

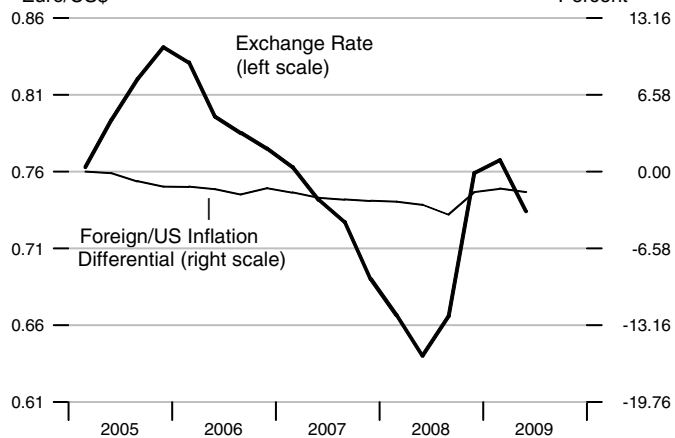
Percent change from year ago



### Exchange Rate and Inflation Differential

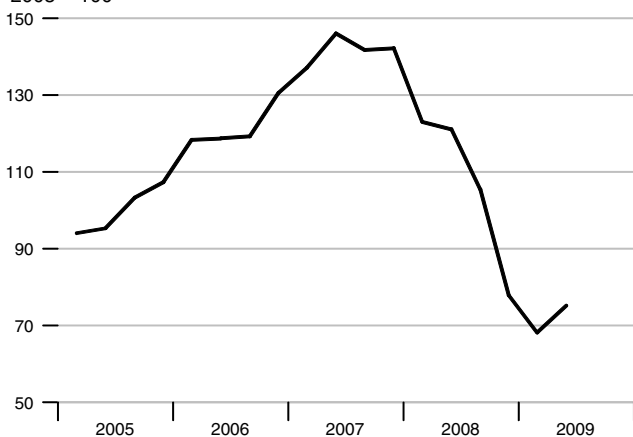
Euro/US\$

Percent



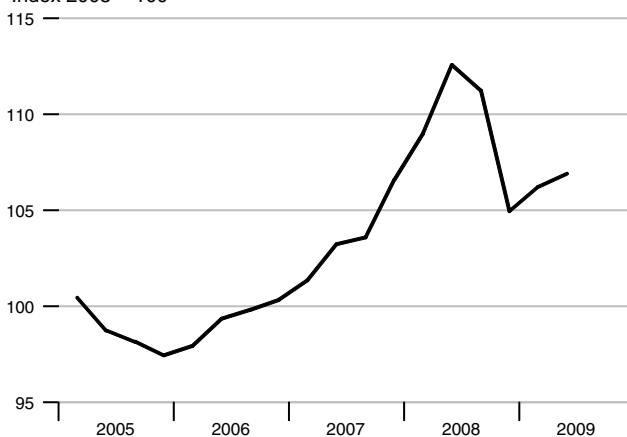
### Stock Exchange Index - Dow Jones EURO STOXX<sup>SM</sup>

2005 = 100



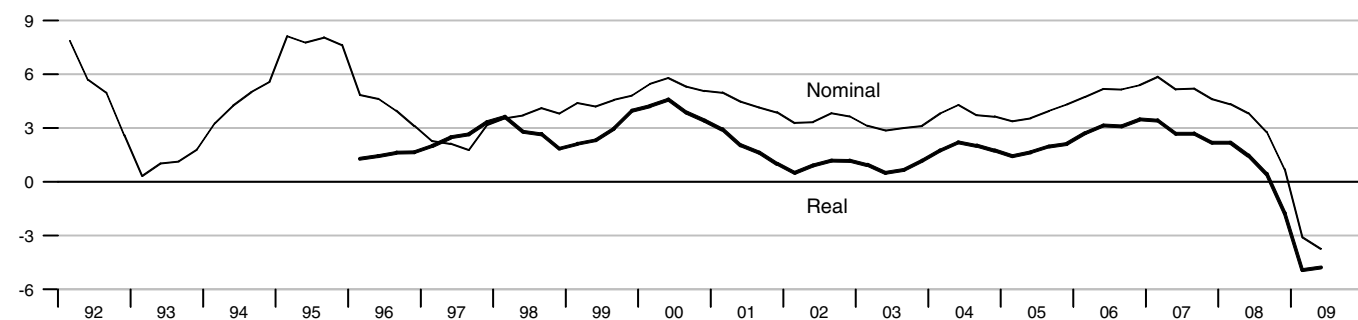
### Real Effective Exchange Rate

Index 2005 = 100

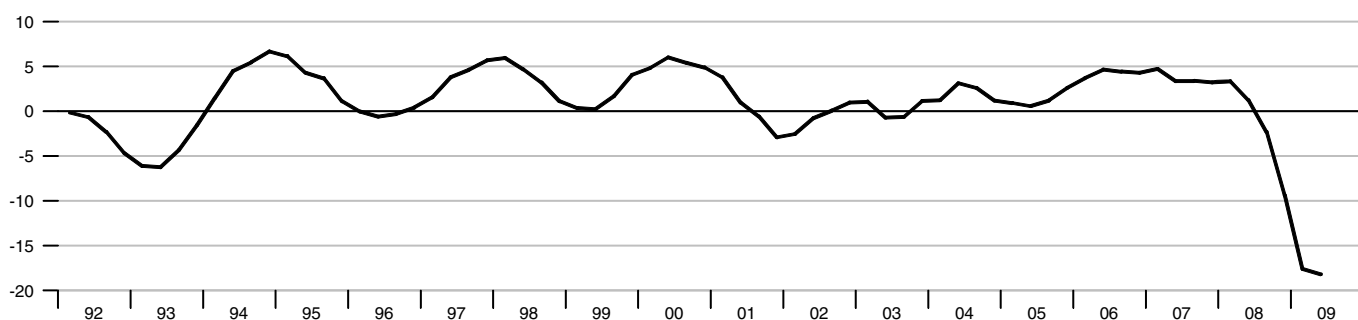


**GDP**

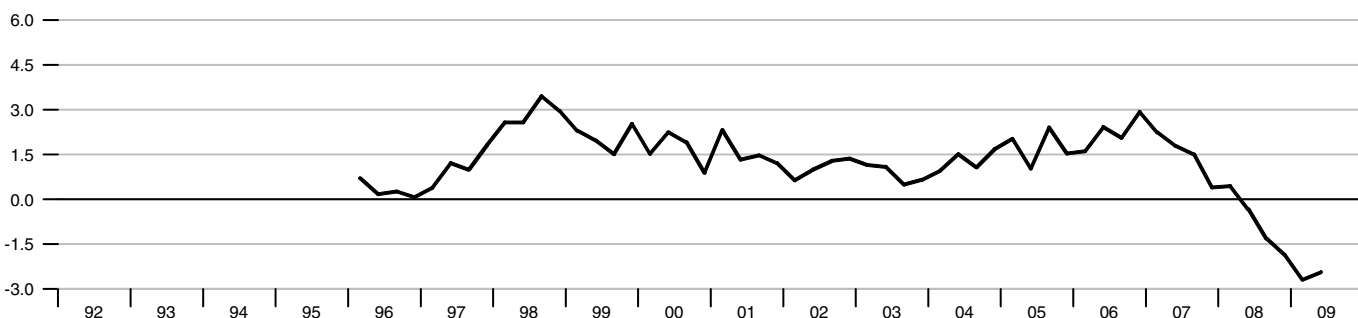
Percent change from year ago

**Industrial Production**

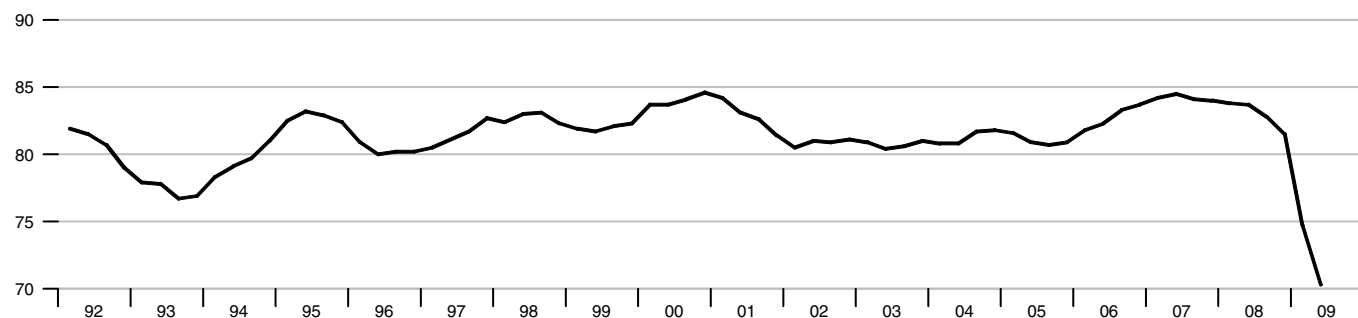
Percent change from year ago

**Retail Sales**

Percent change from year ago

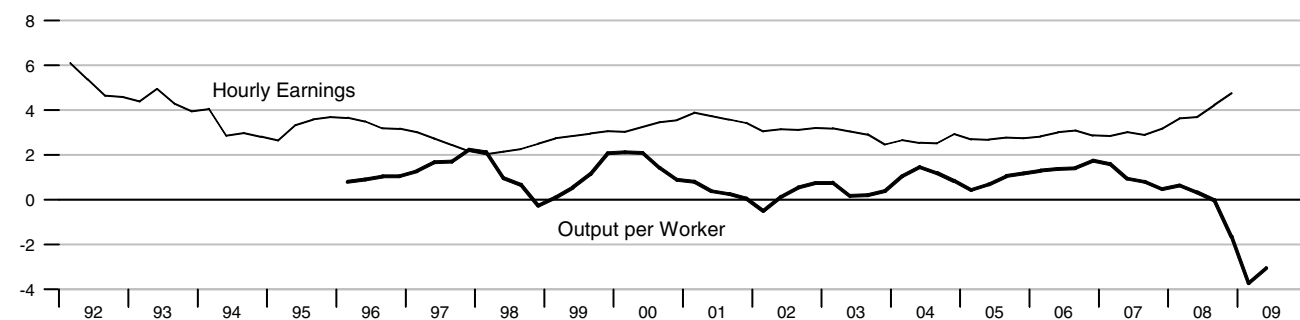
**Capacity Utilization**

Percent



## Real Hourly Earnings and Output per Worker

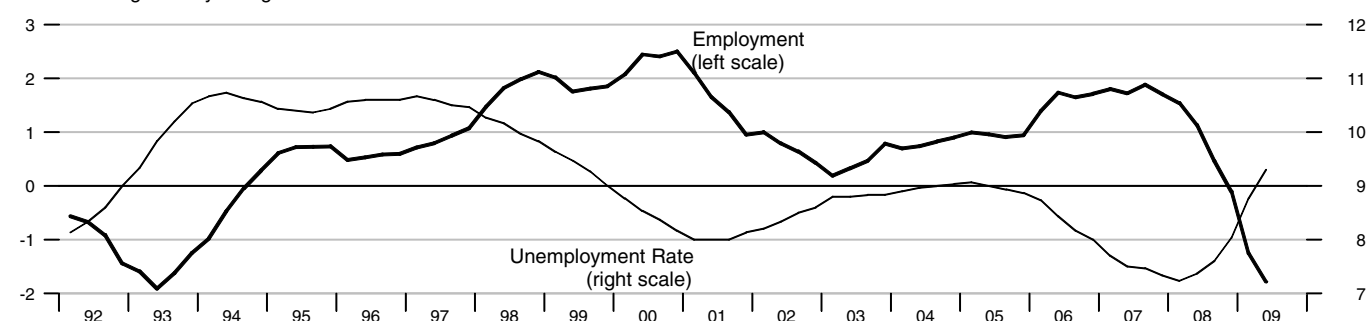
Percent change from year ago



## Labor Force Indicators

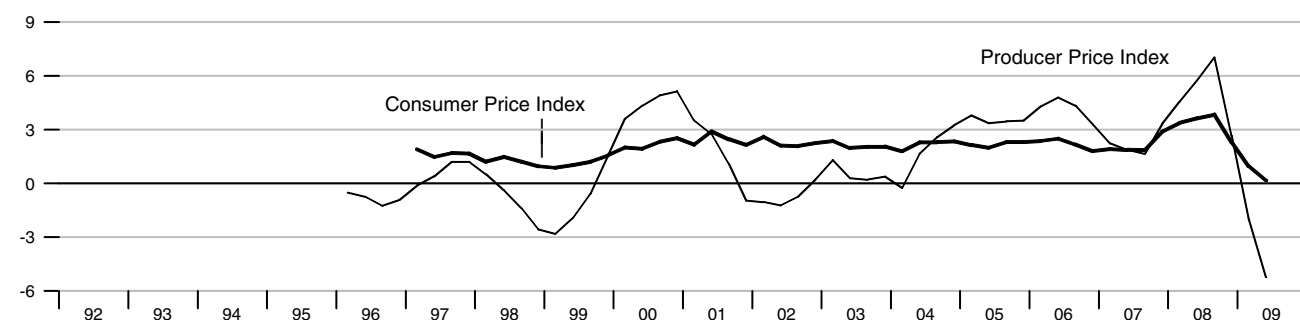
Percent change from year ago

Percent



## Inflation

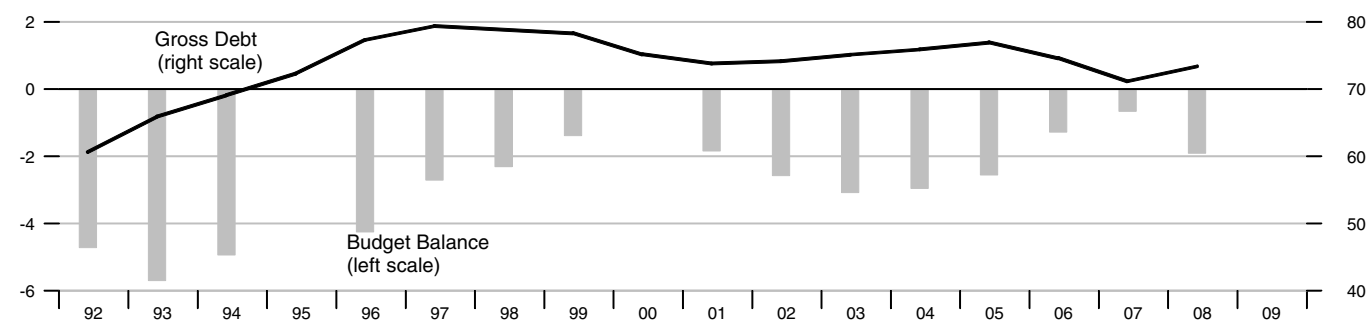
Percent change from year ago



## Gross Government Debt and Budget Balance

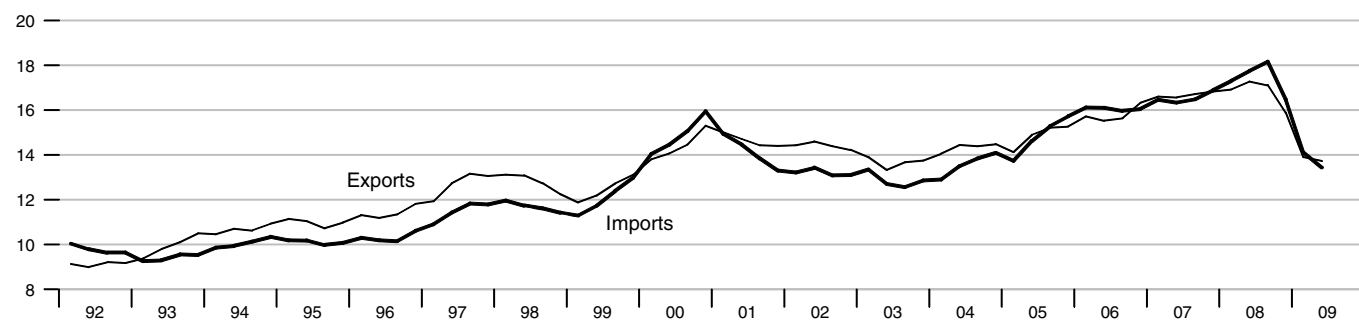
Percent of GDP, annual data

Percent of GDP, annual data

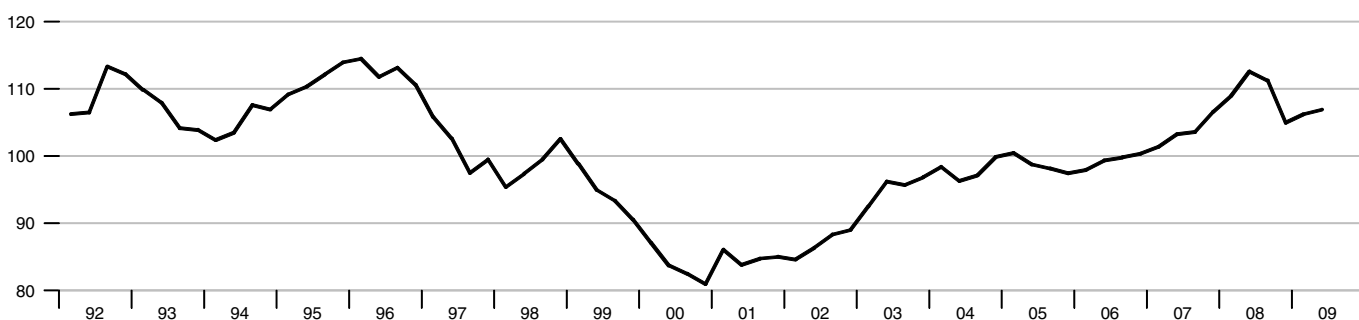


**International Trade - Goods**

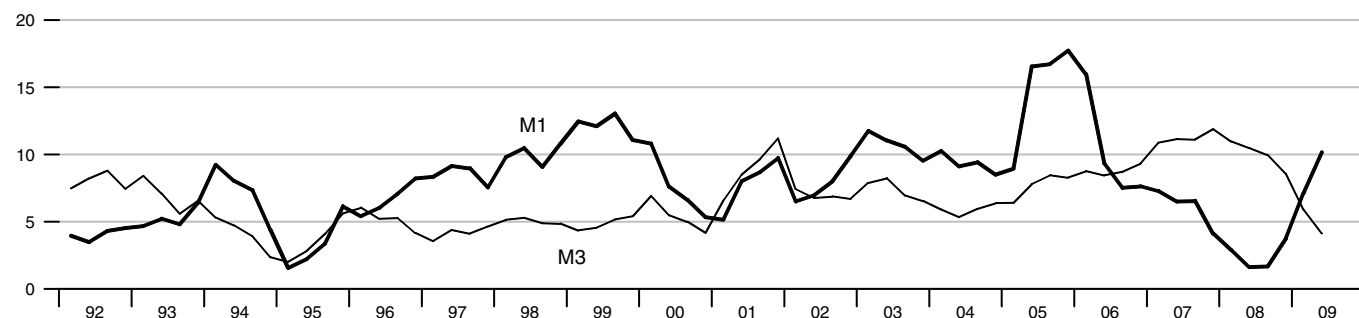
Percent of GDP

**Real Effective Exchange Rate**

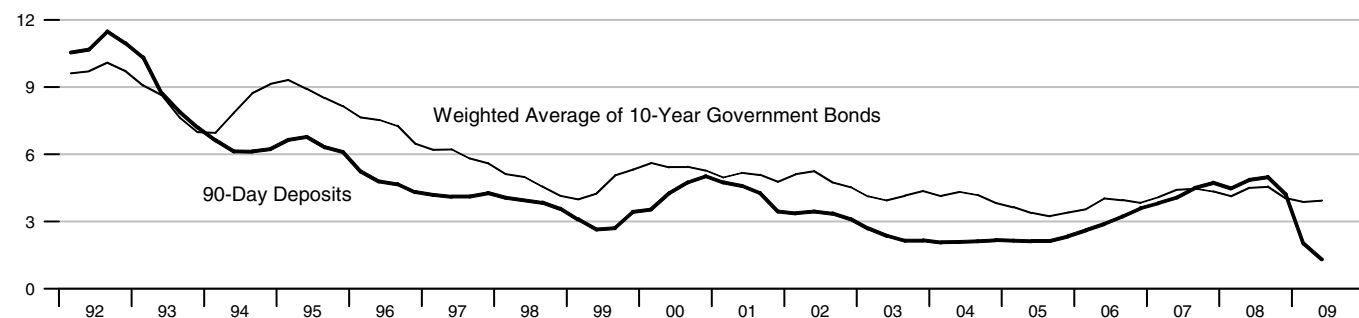
Index 2005 = 100

**Monetary Aggregates**

Percent change from year ago

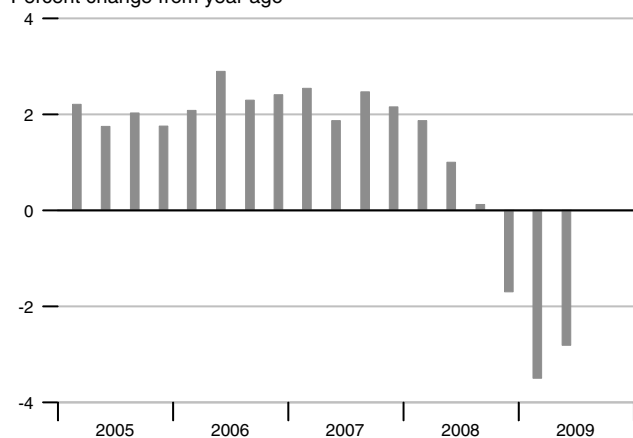
**Interest Rates**

Percent



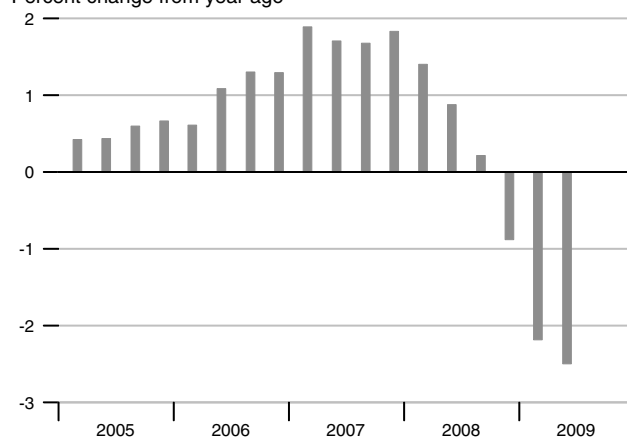
### Real GDP

Percent change from year ago



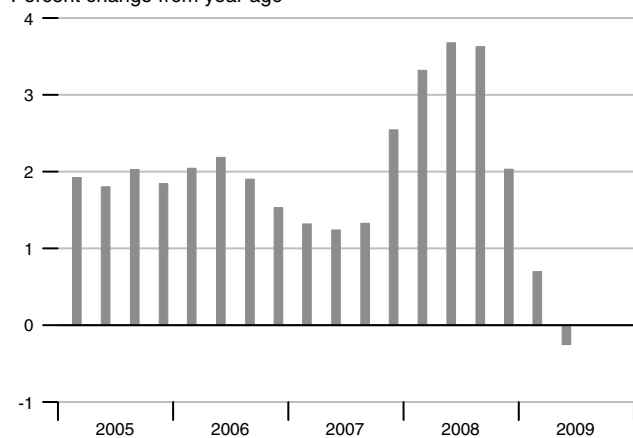
### Employment

Percent change from year ago



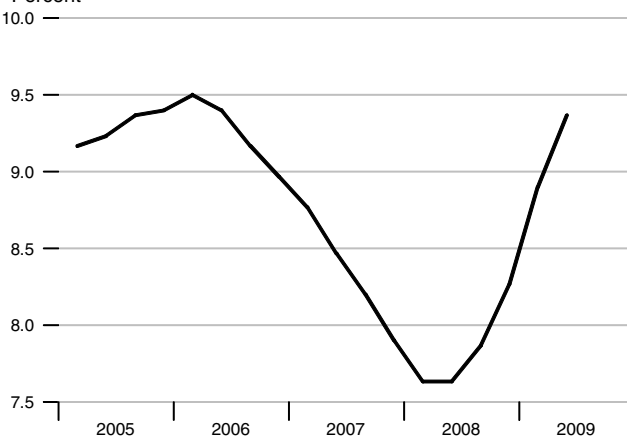
### Consumer Price Index

Percent change from year ago



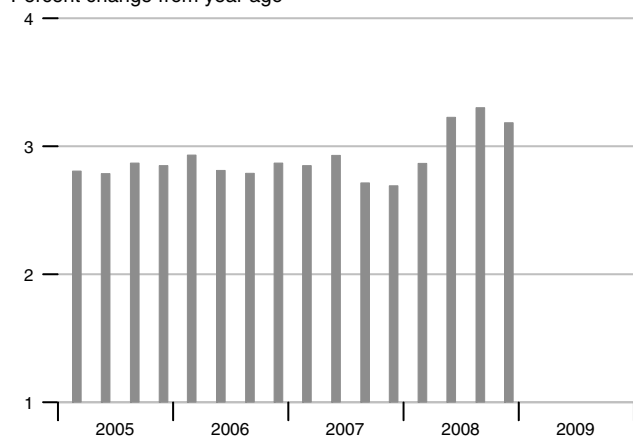
### Unemployment Rate

Percent



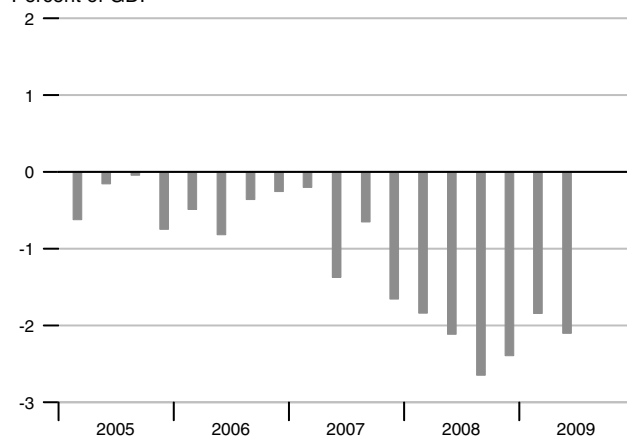
### Real Hourly Earnings

Percent change from year ago



### Current Account Balance

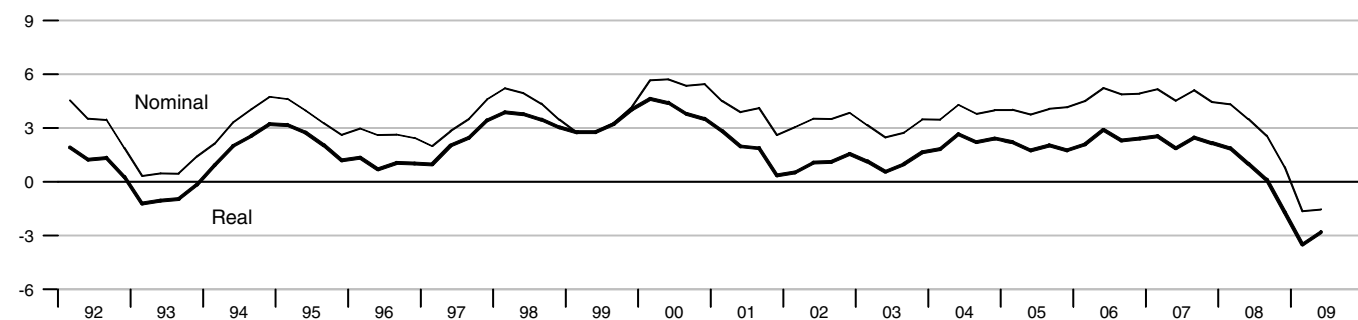
Percent of GDP





**GDP**

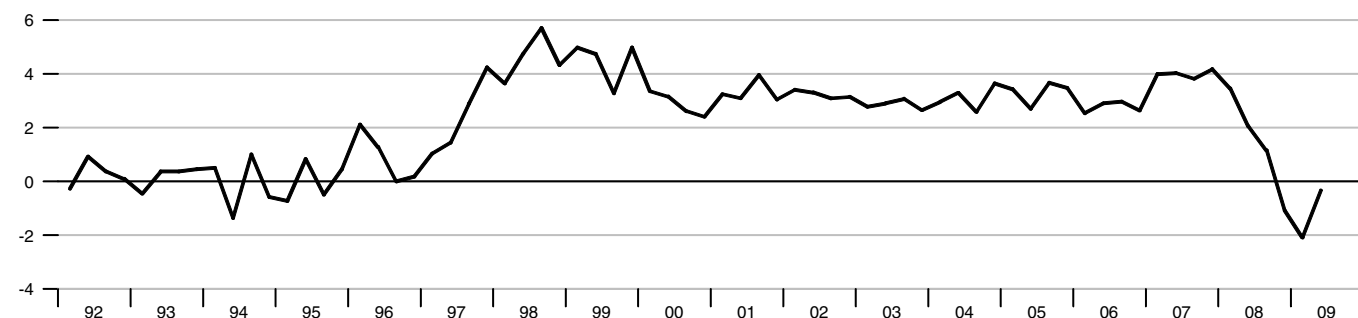
Percent change from year ago

**Industrial Production**

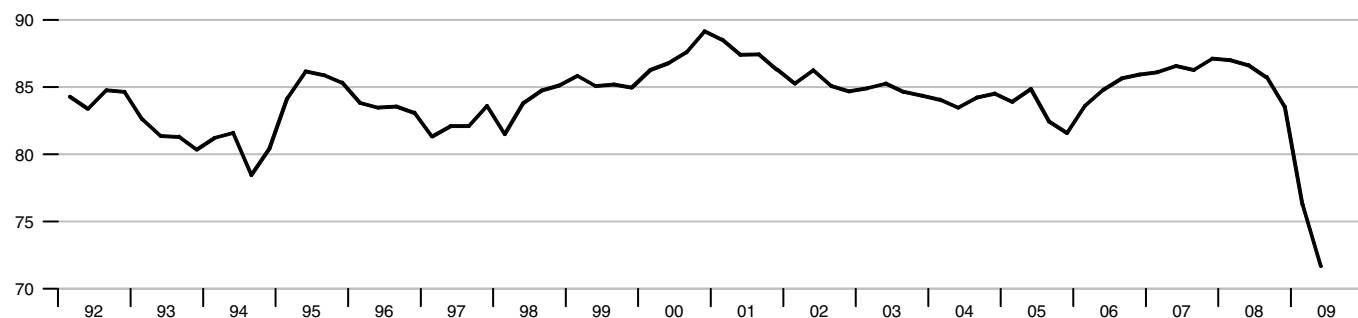
Percent change from year ago

**Retail Sales**

Percent change from year ago

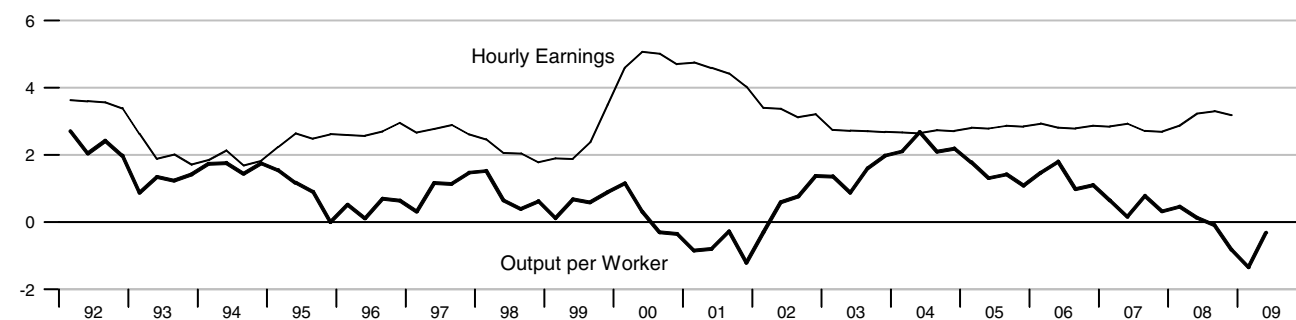
**Capacity Utilization**

Percent



## Real Hourly Earnings and Output per Worker

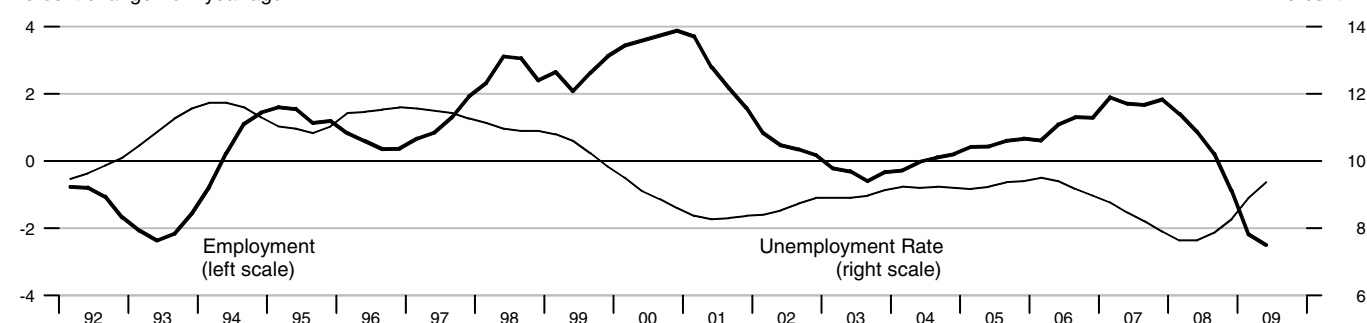
Percent change from year ago



## Labor Force Indicators

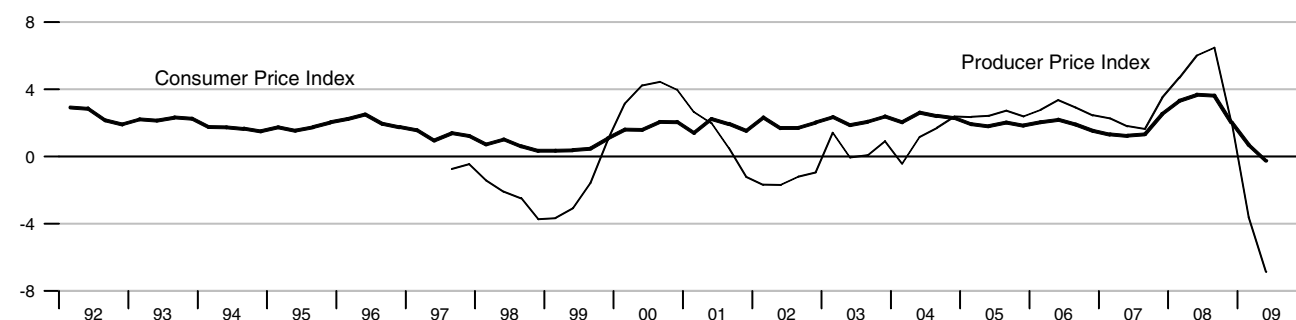
Percent change from year ago

Percent



## Inflation

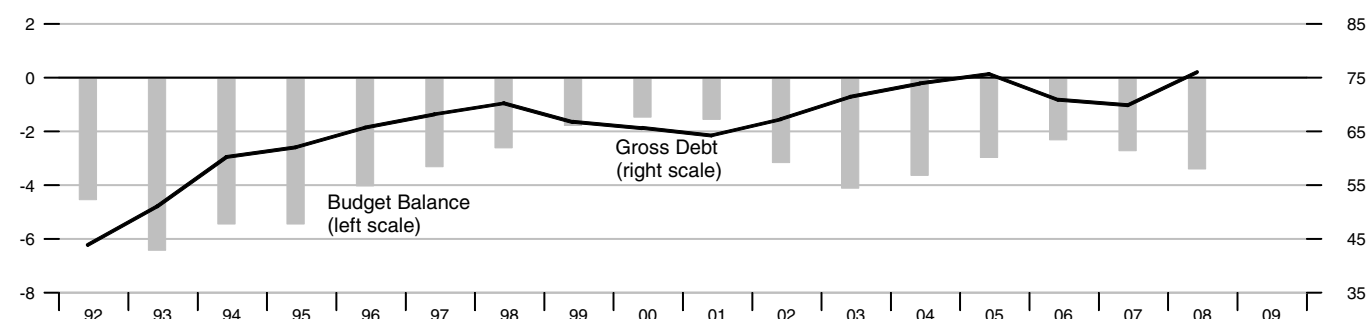
Percent change from year ago



## Gross Government Debt and Budget Balance

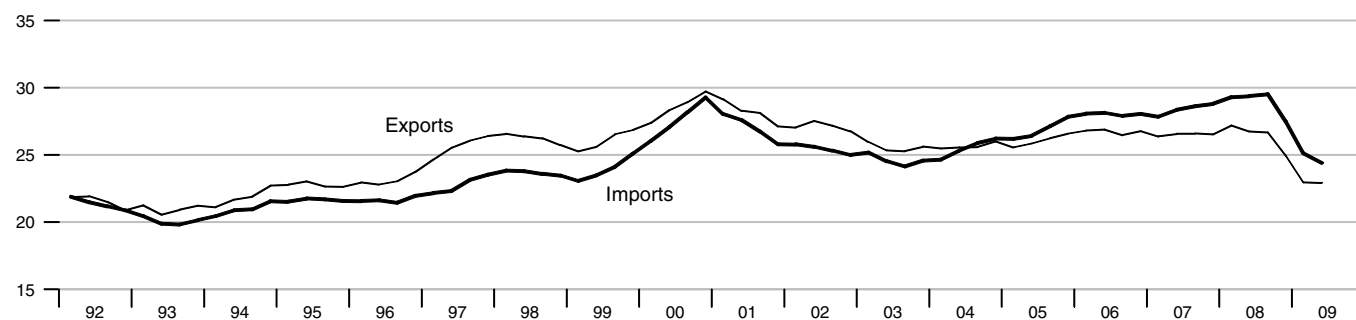
Percent of GDP, annual data

Percent of GDP, annual data



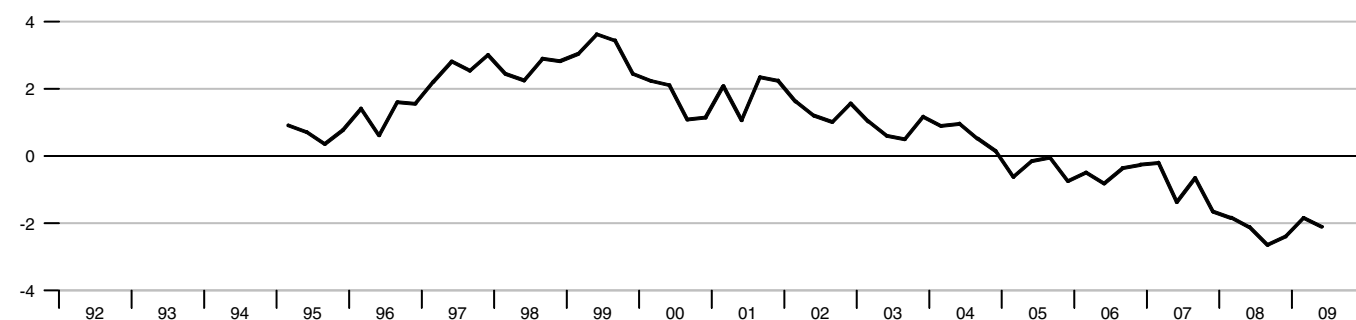
### International Trade - Goods and Services

Percent of GDP



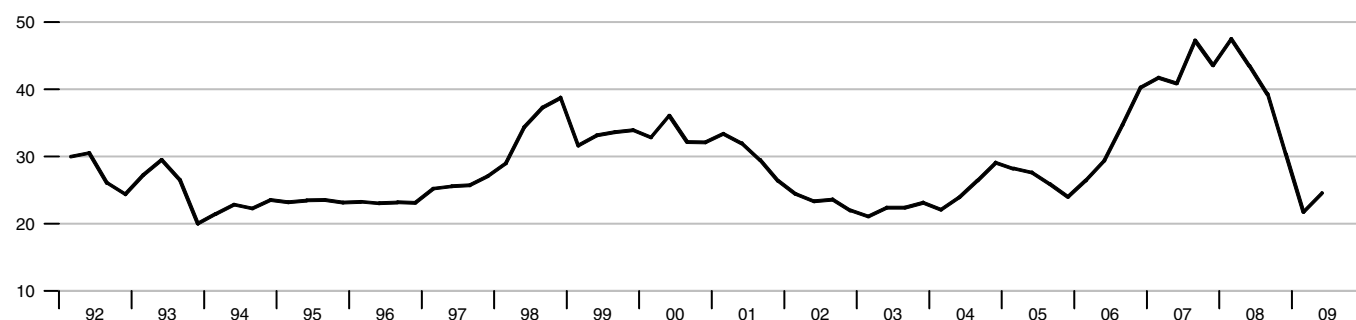
### Current Account Balance

Percent of GDP



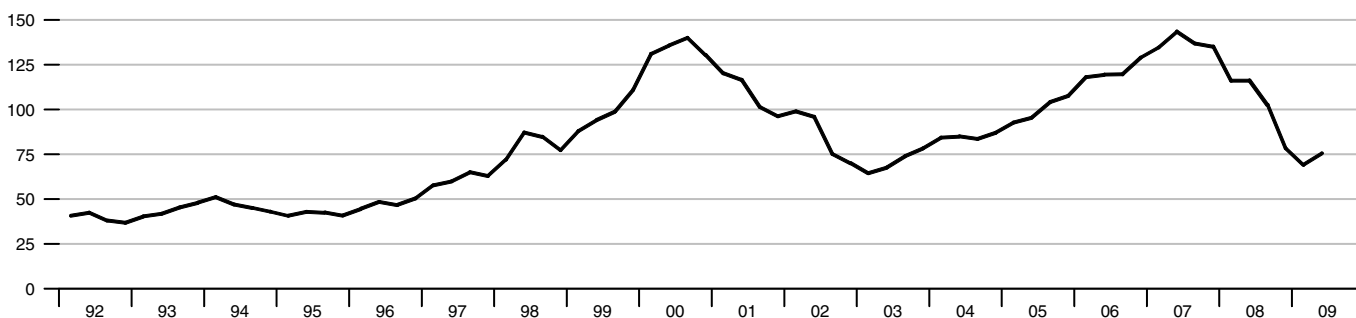
### Foreign Exchange Reserves

Billions of US\$



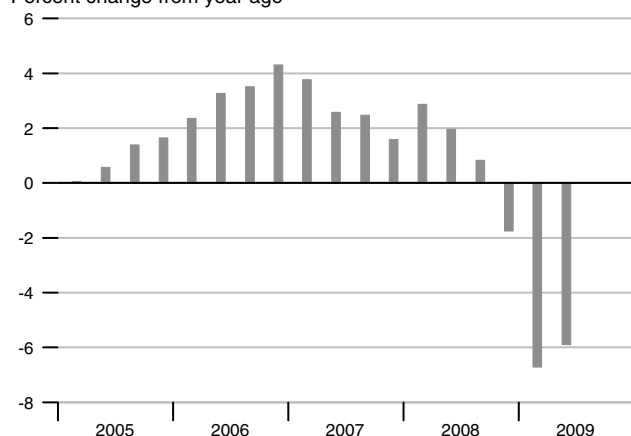
### Stock Exchange Index - SBF 250

2005 = 100

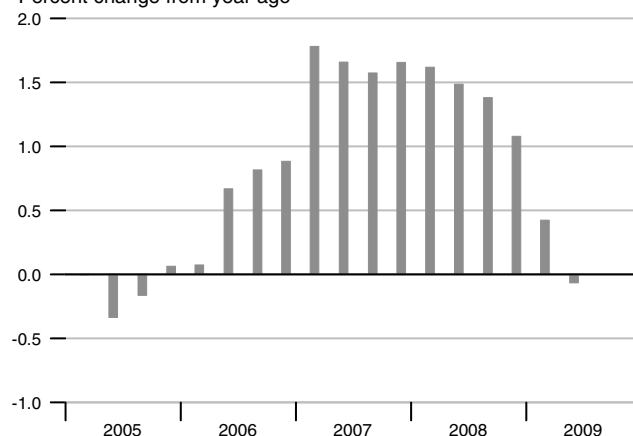


**Real GDP**

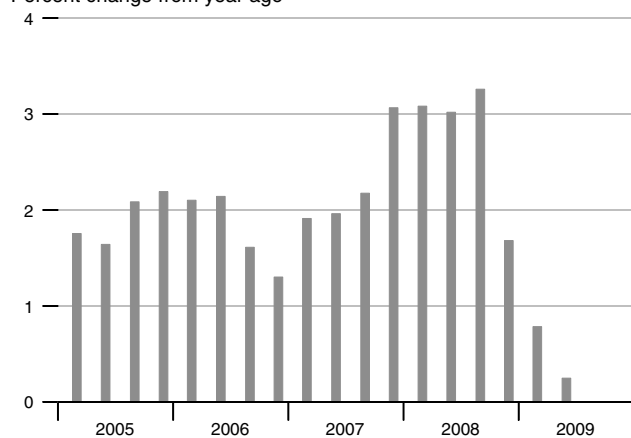
Percent change from year ago

**Employment**

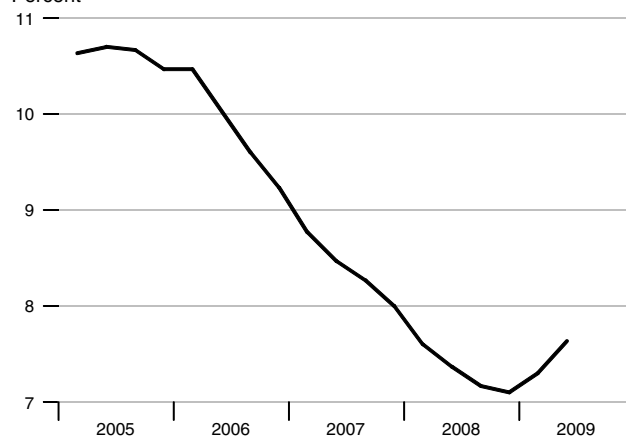
Percent change from year ago

**Consumer Price Index**

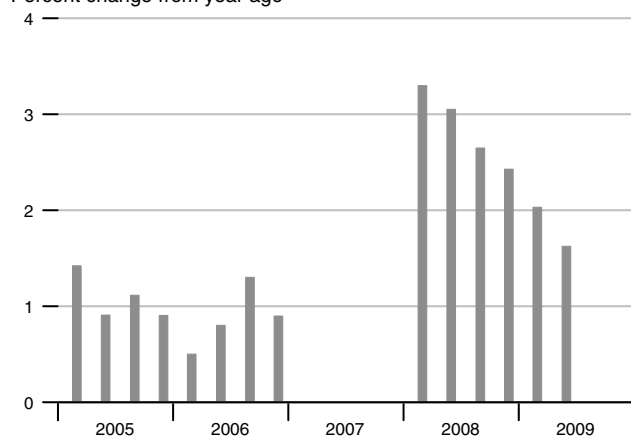
Percent change from year ago

**Unemployment Rate**

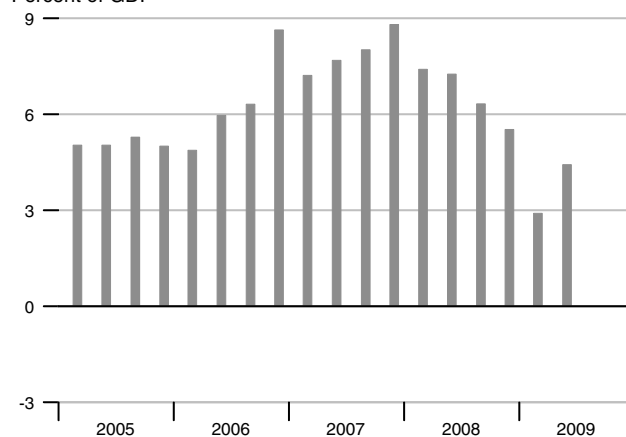
Percent

**Real Hourly Earnings**

Percent change from year ago

**Current Account Balance**

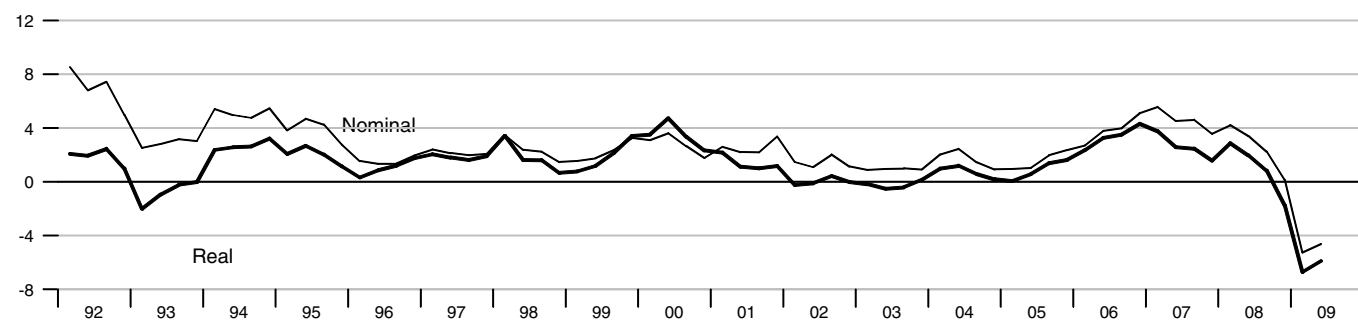
Percent of GDP



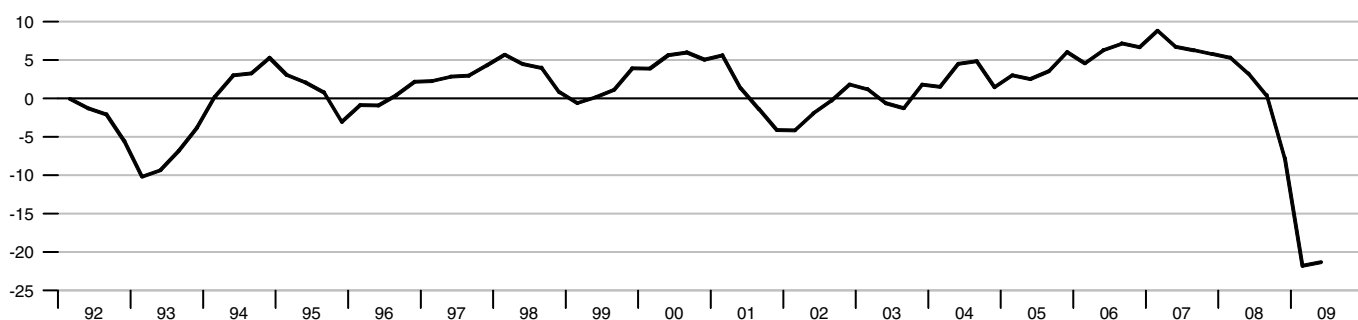
\* Please see the important note on the table of contents page.

**GDP**

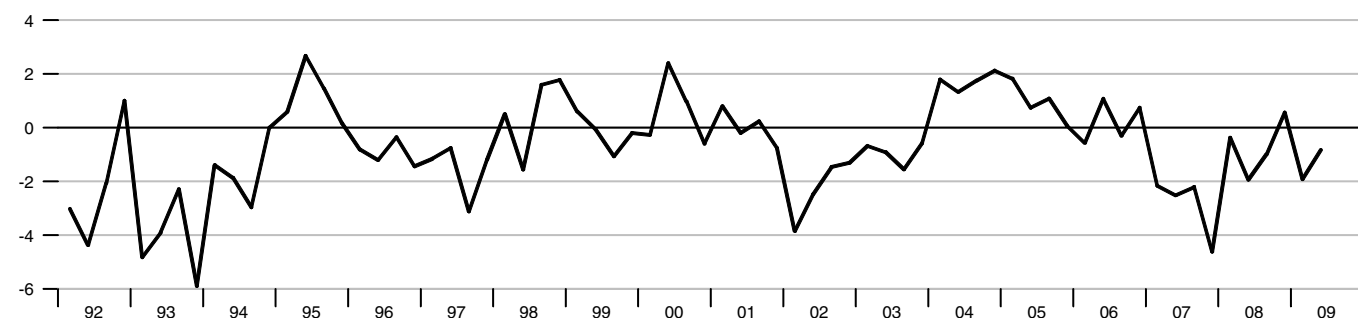
Percent change from year ago

**Industrial Production**

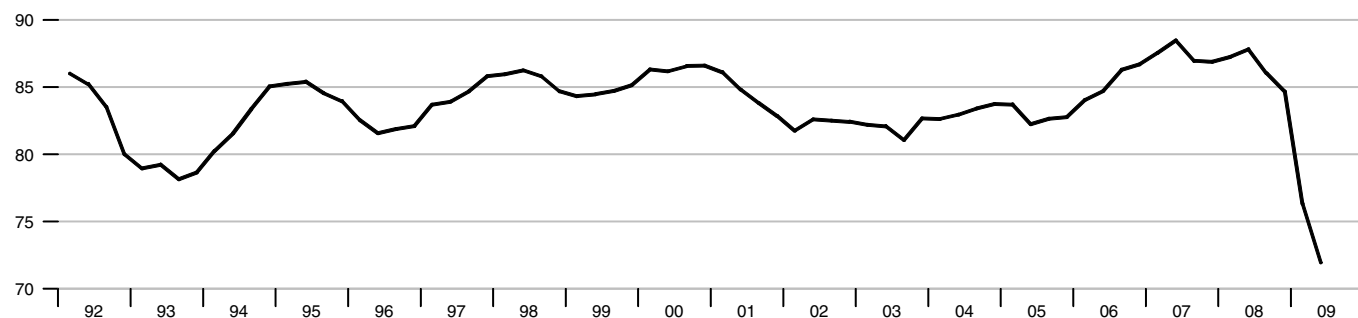
Percent change from year ago

**Retail Sales**

Percent change from year ago

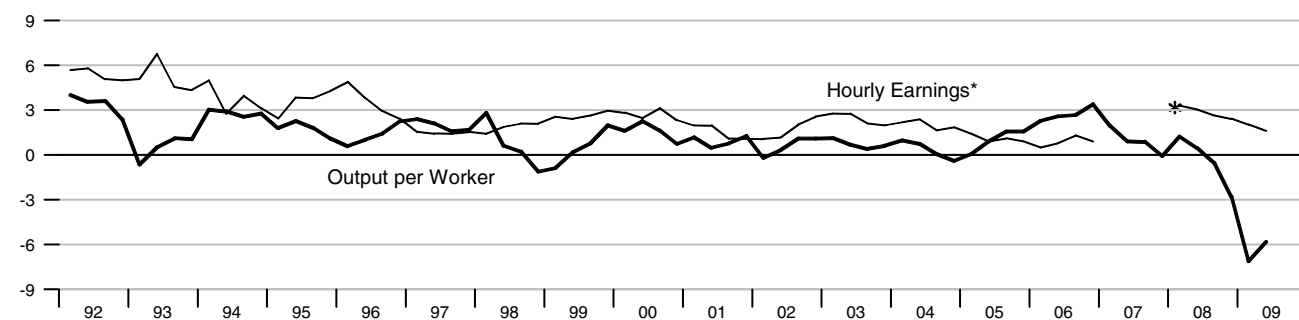
**Capacity Utilization**

Percent



## Real Hourly Earnings and Output per Worker

Percent change from year ago

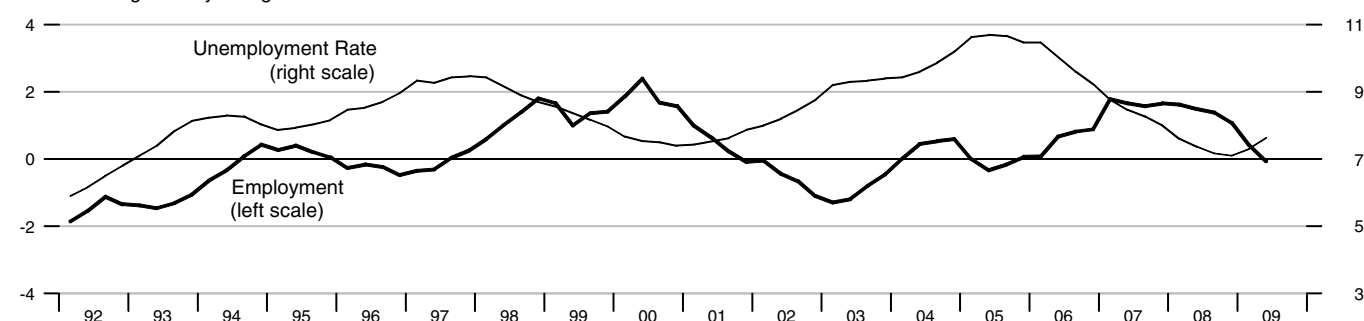


\* Please see the important note on the table of contents page.

## Labor Force Indicators

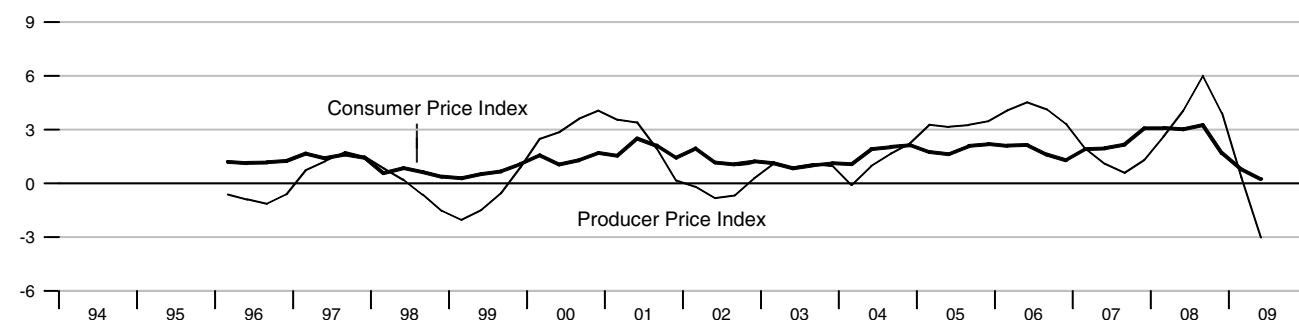
Percent change from year ago

Percent



## Inflation

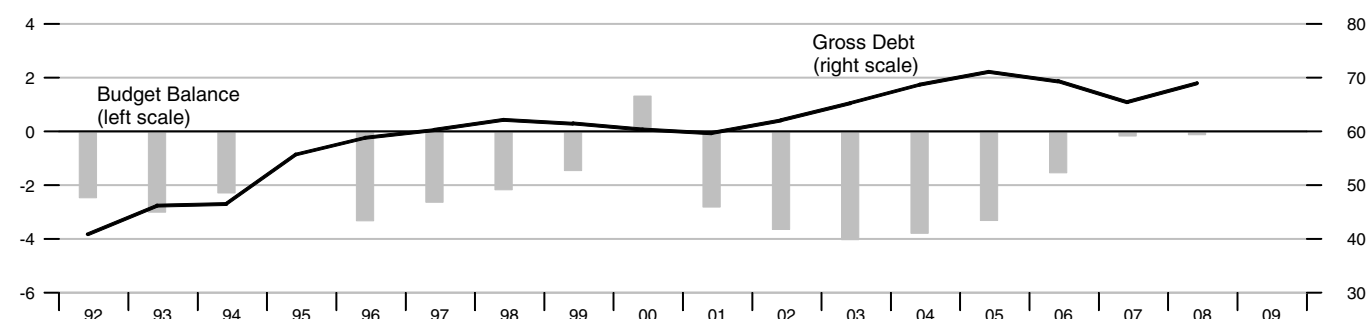
Percent change from year ago



## Gross Government Debt and Budget Balance

Percent of GDP, annual data

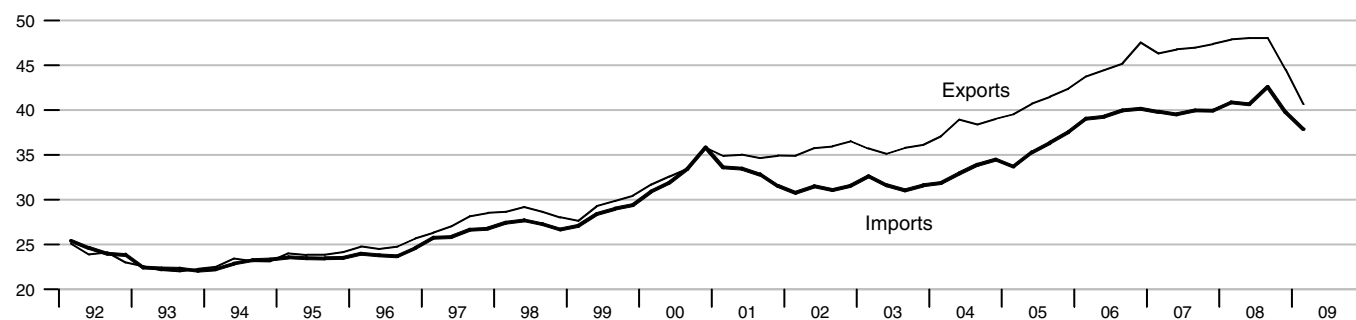
Percent of GDP, annual data



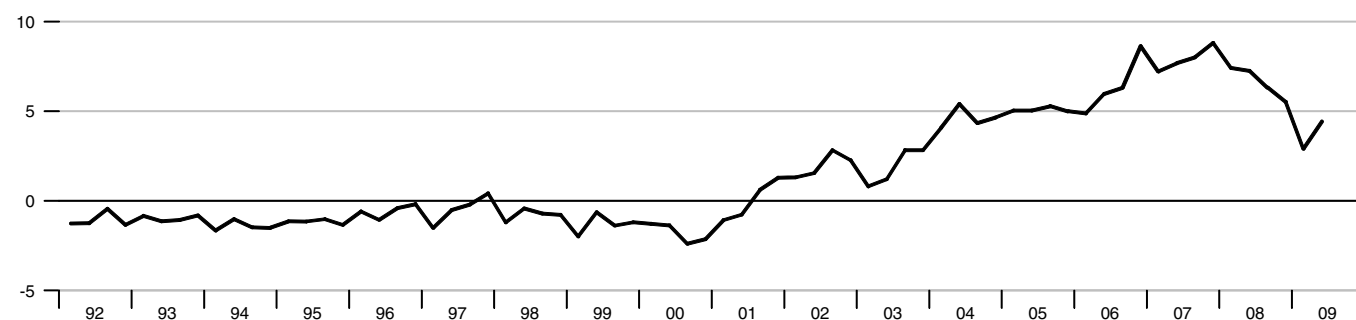
The actual value for budget balance in 2008 is 0.0%.

**International Trade - Goods and Services**

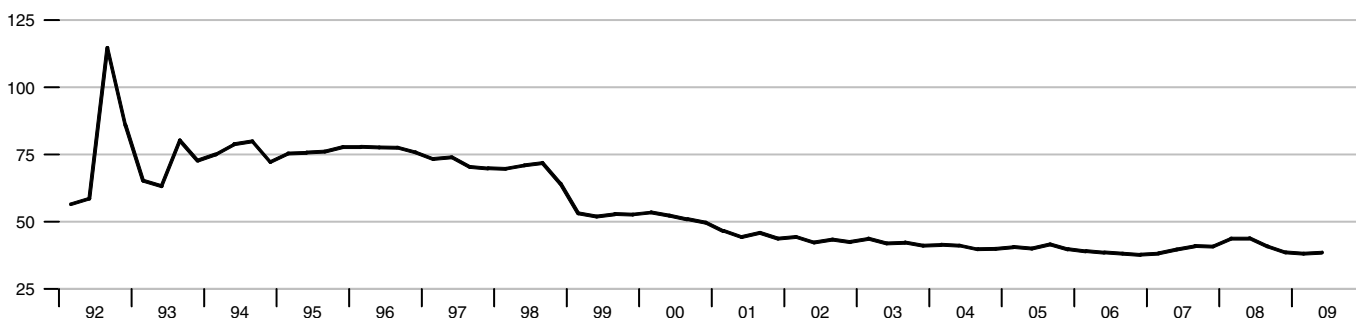
Percent of GDP

**Current Account Balance**

Percent of GDP

**Foreign Exchange Reserves**

Billions of US\$

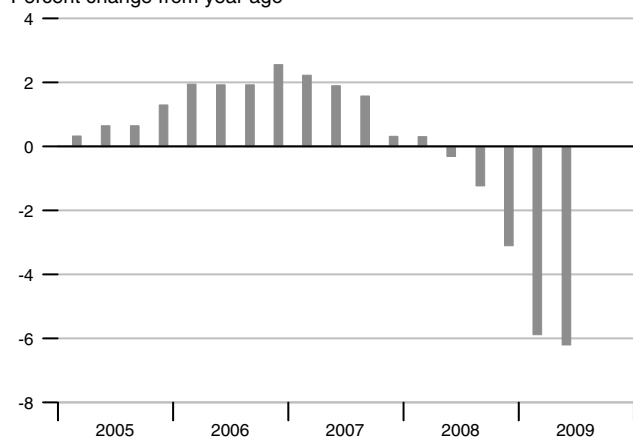
**Stock Exchange Index - CDAX**

2005 = 100



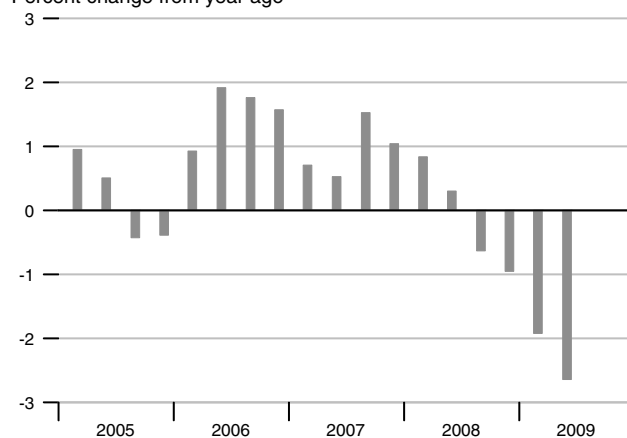
### Real GDP

Percent change from year ago



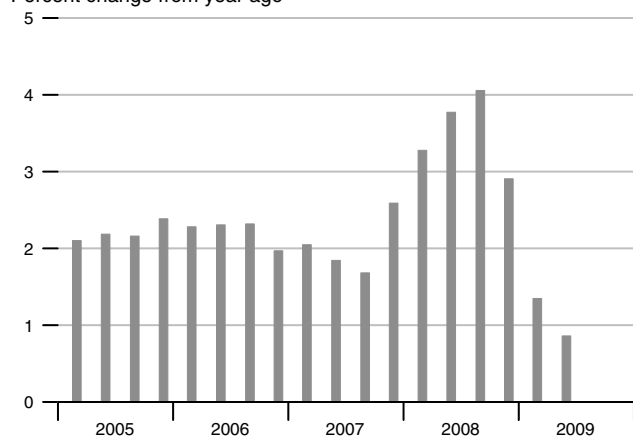
### Employment

Percent change from year ago



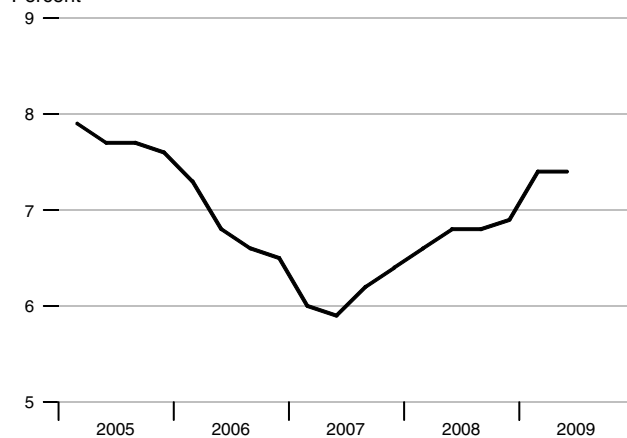
### Consumer Price Index

Percent change from year ago



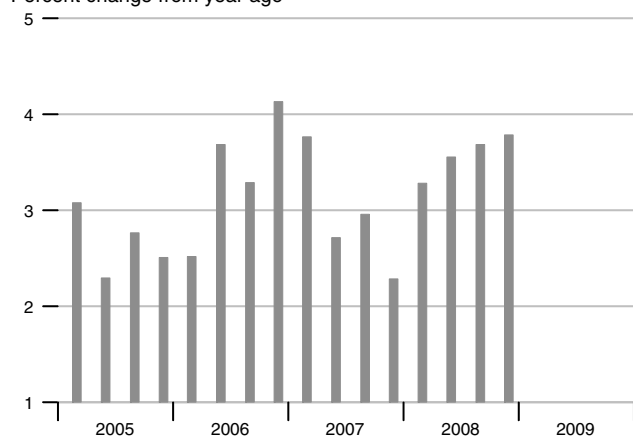
### Unemployment Rate

Percent



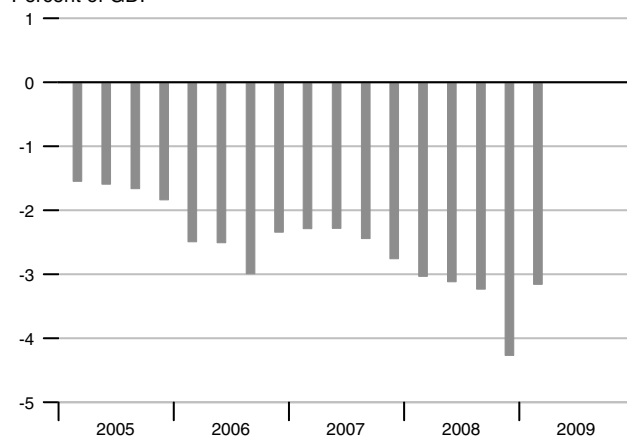
### Real Hourly Earnings

Percent change from year ago



### Current Account Balance

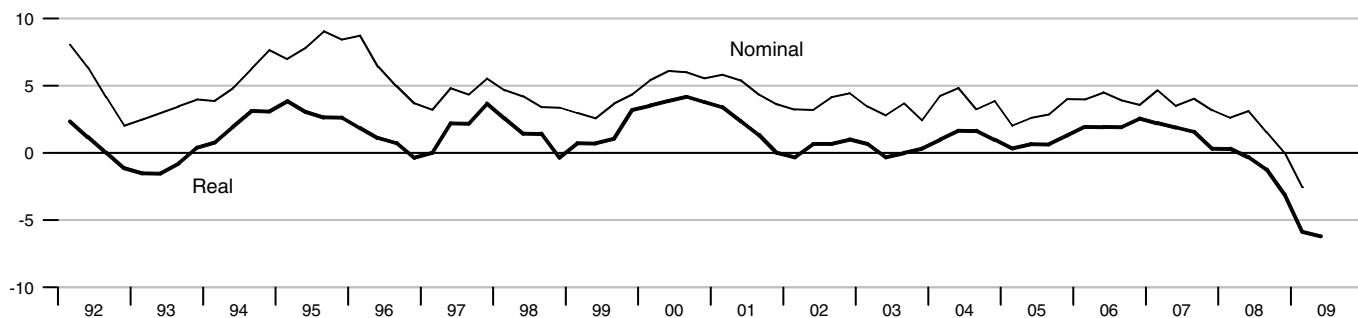
Percent of GDP



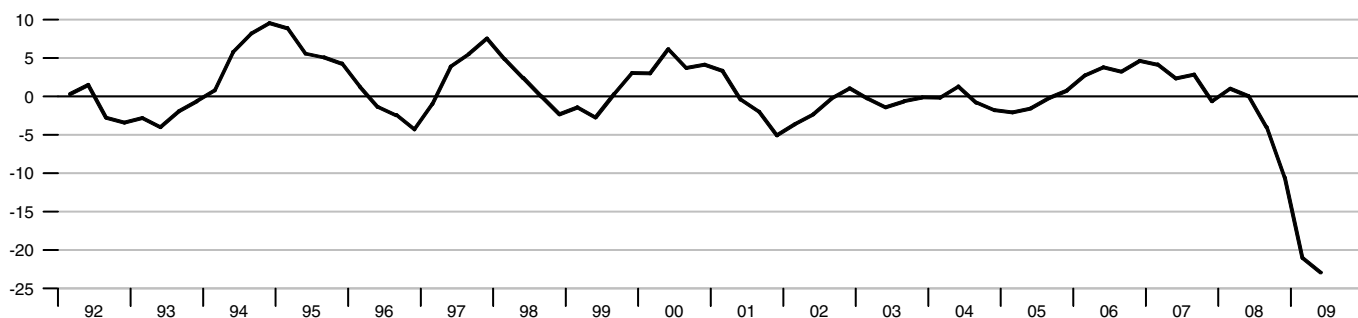


**GDP**

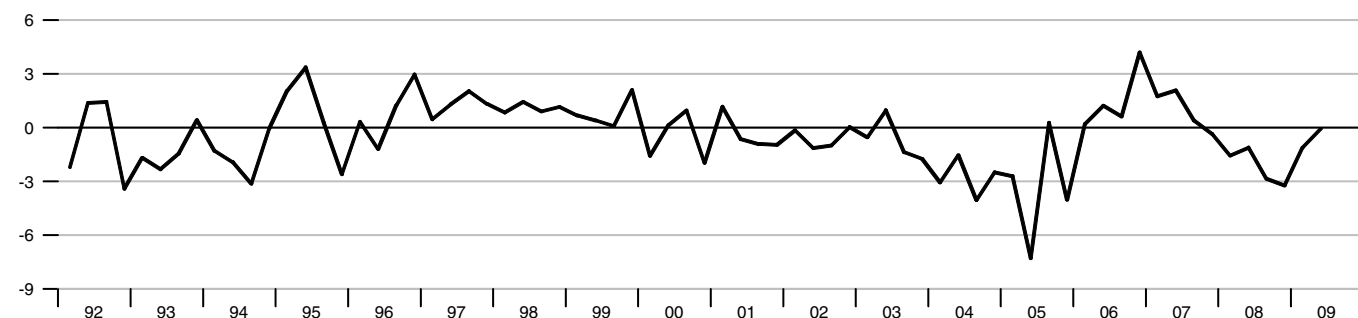
Percent change from year ago

**Industrial Production**

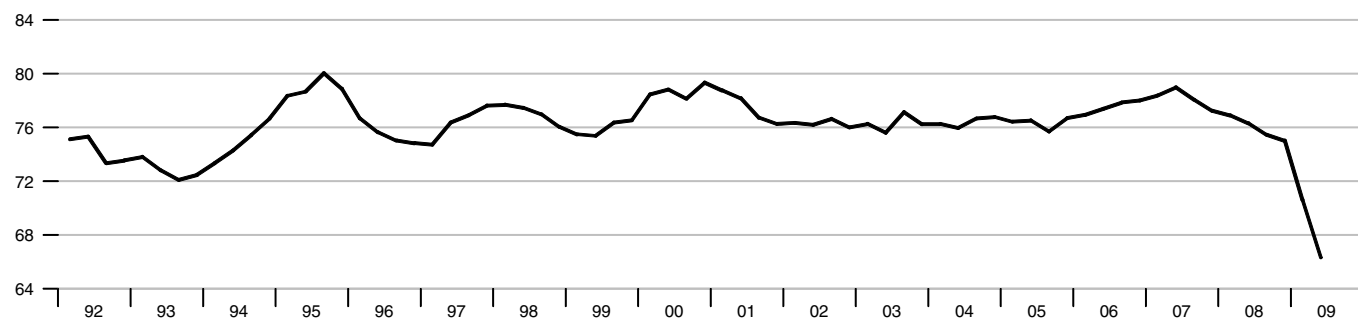
Percent change from year ago

**Retail Sales**

Percent change from year ago

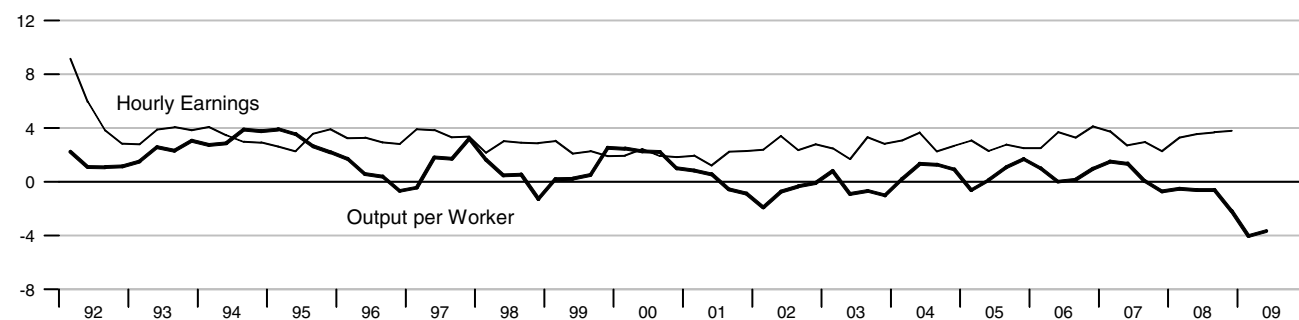
**Capacity Utilization**

Percent



## Real Hourly Earnings and Output per Worker

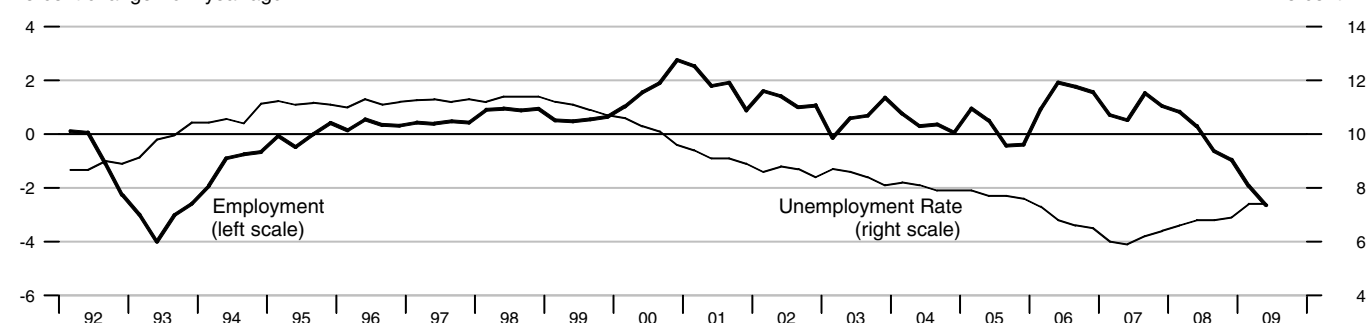
Percent change from year ago



## Labor Force Indicators

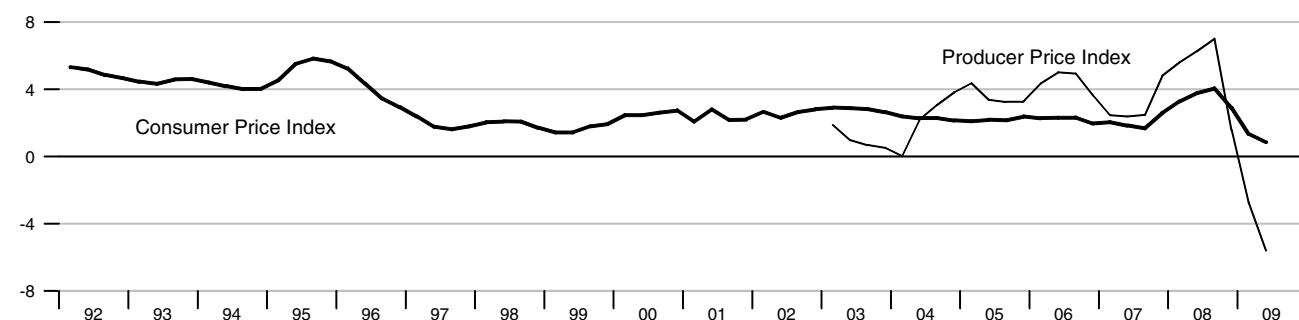
Percent change from year ago

Percent



## Inflation

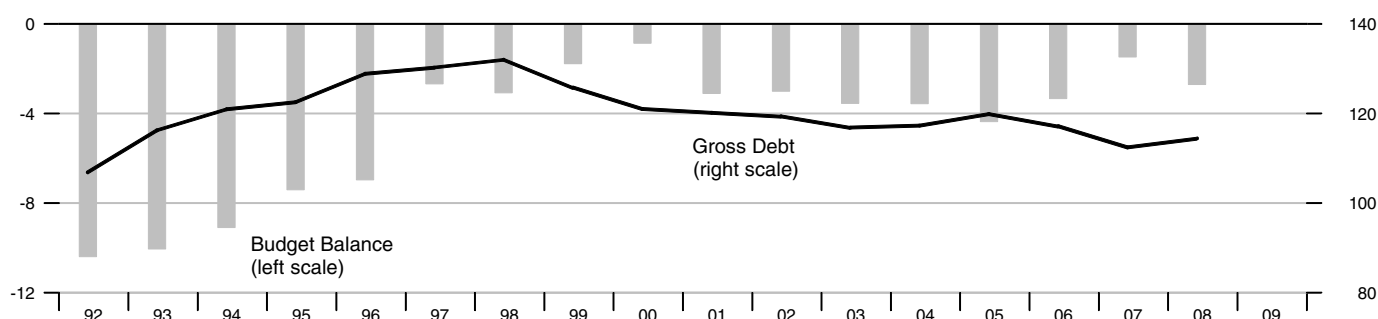
Percent change from year ago



## Gross Government Debt and Budget Balance

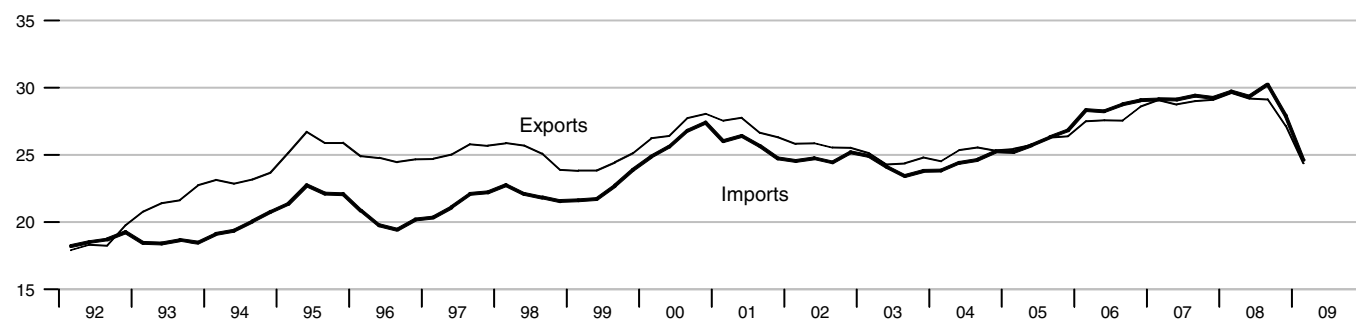
Percent of GDP, annual data

Percent of GDP, annual data

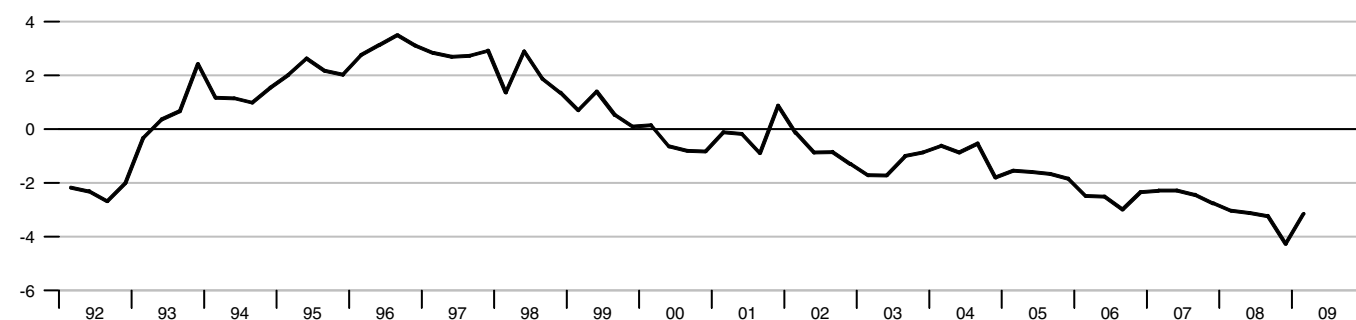


**International Trade - Goods and Services**

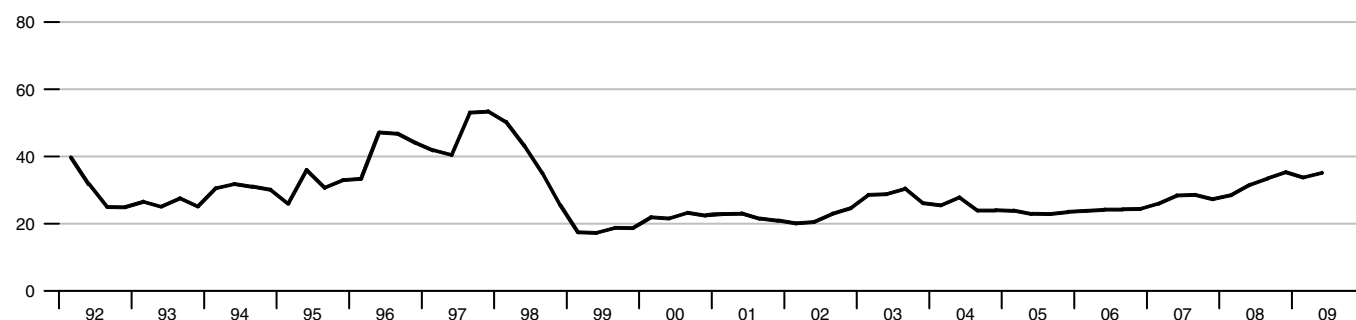
Percent of GDP

**Current Account Balance**

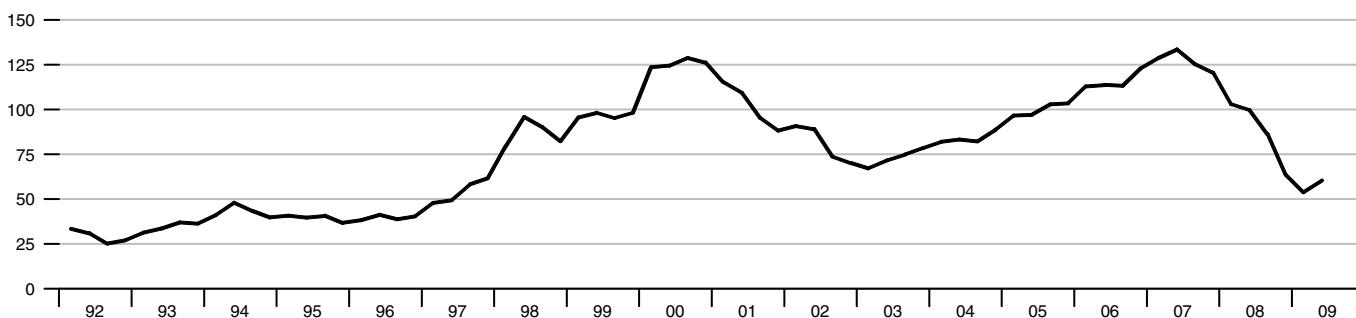
Percent of GDP

**Foreign Exchange Reserves**

Billions of US\$

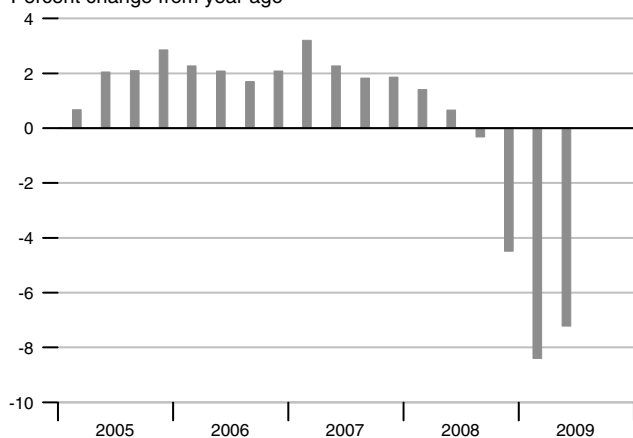
**Stock Exchange Index - Milan Stock Exchange**

2005 = 100



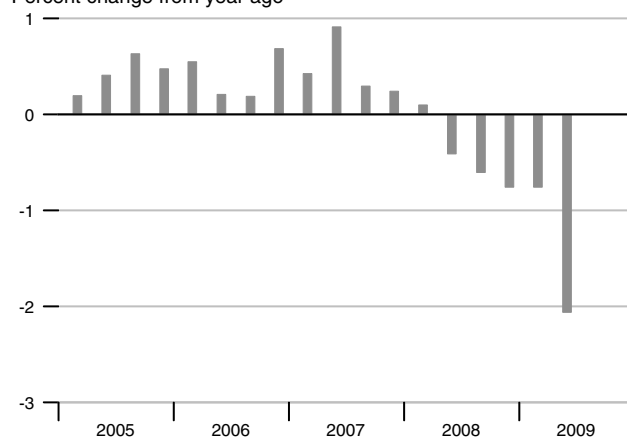
### Real GDP

Percent change from year ago



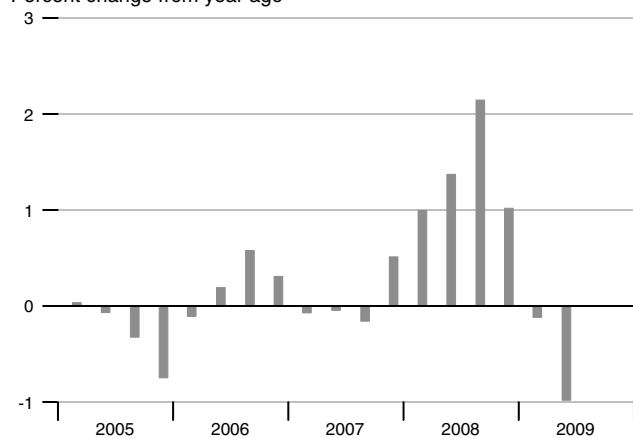
### Employment

Percent change from year ago



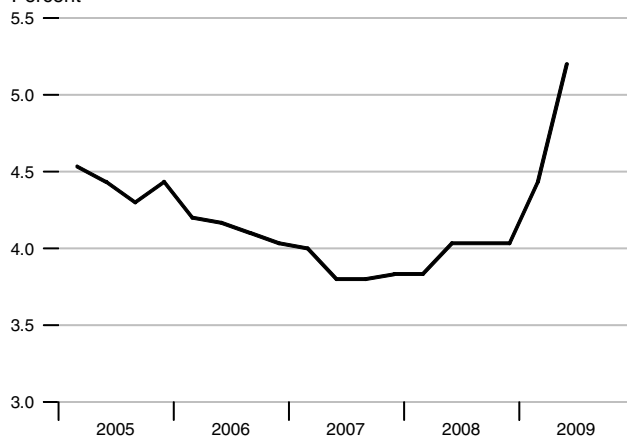
### Consumer Price Index

Percent change from year ago



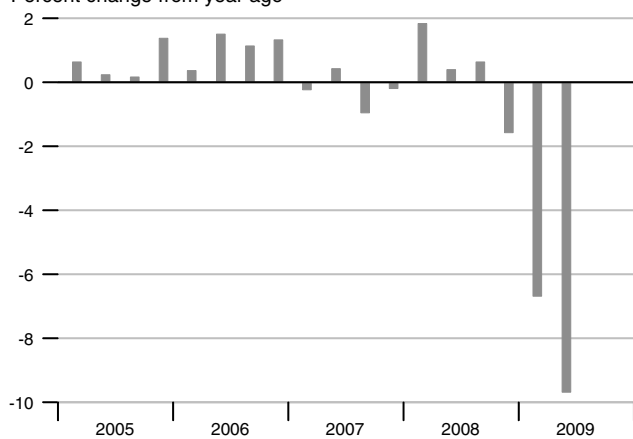
### Unemployment Rate

Percent



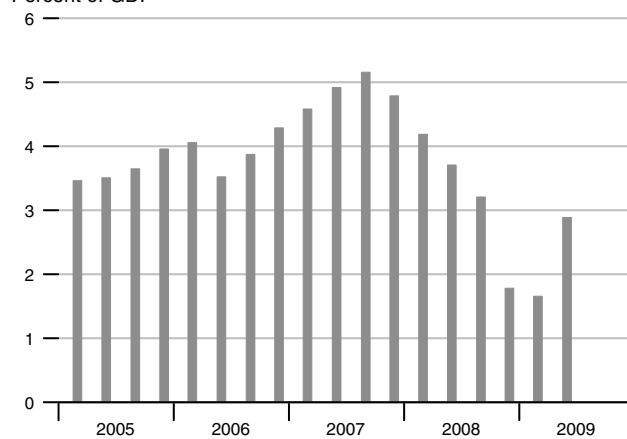
### Real Monthly Earnings

Percent change from year ago



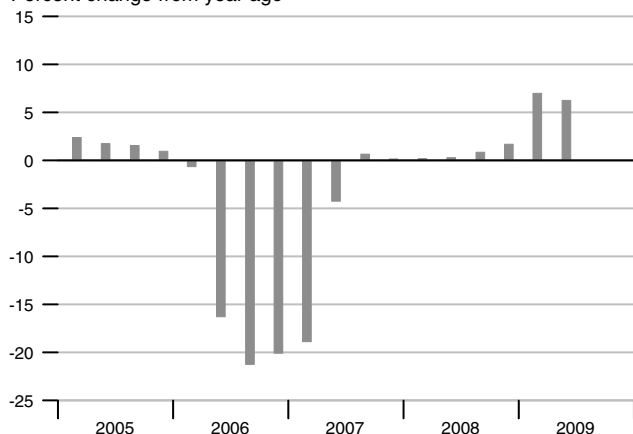
### Current Account Balance

Percent of GDP

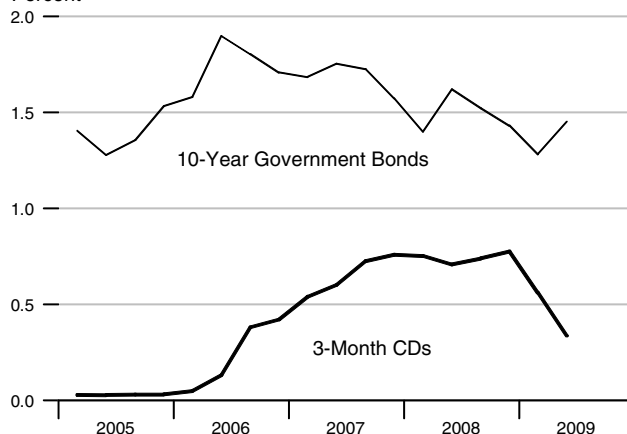


**Adjusted Monetary Base**

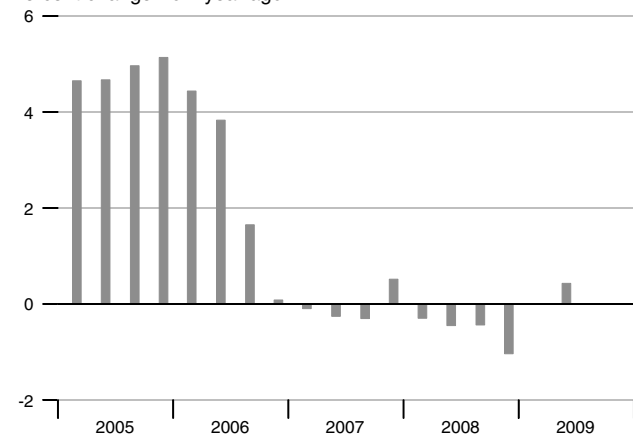
Percent change from year ago

**Interest Rates**

Percent

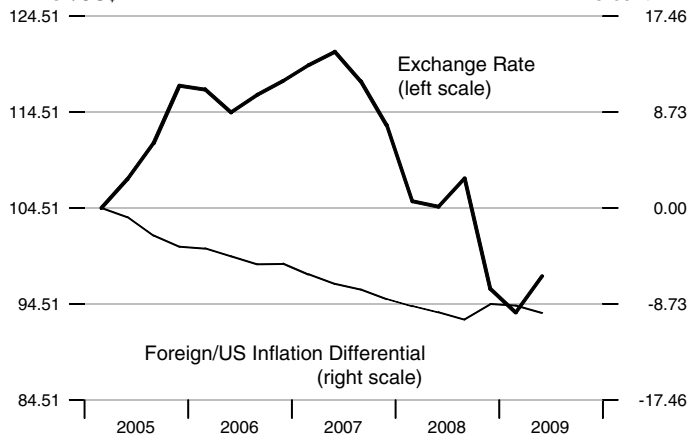
**M1**

Percent change from year ago

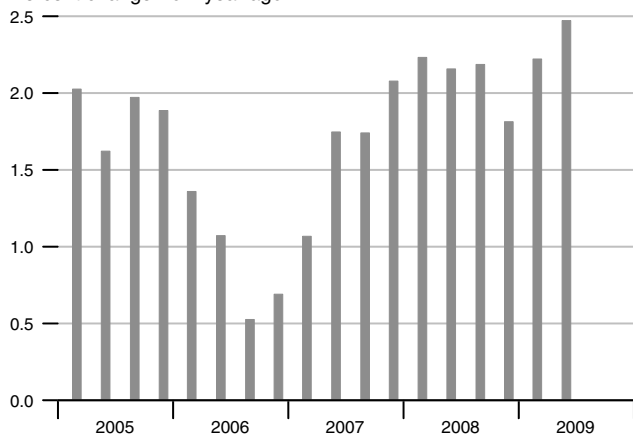
**Exchange Rate and Inflation Differential**

Yen/US\$

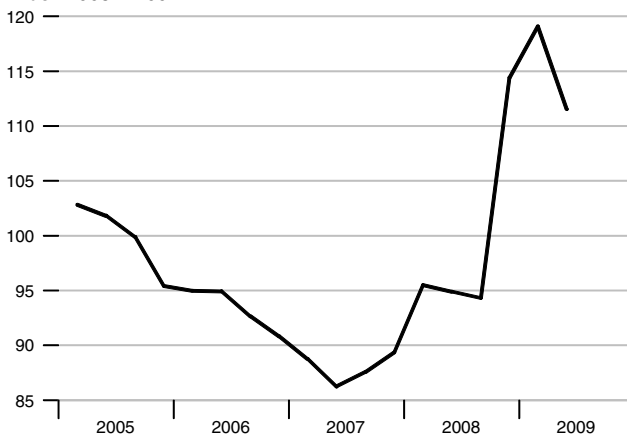
Percent

**M2**

Percent change from year ago

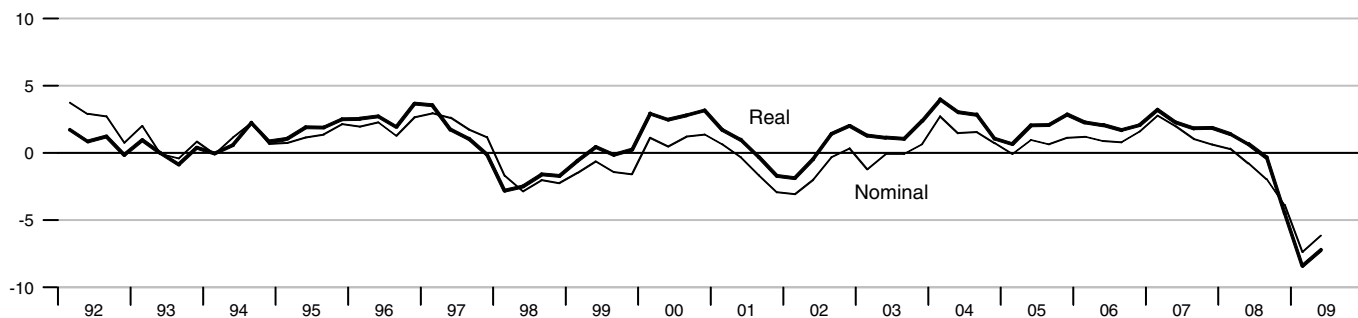
**Real Effective Exchange Rate**

Index 2005 = 100

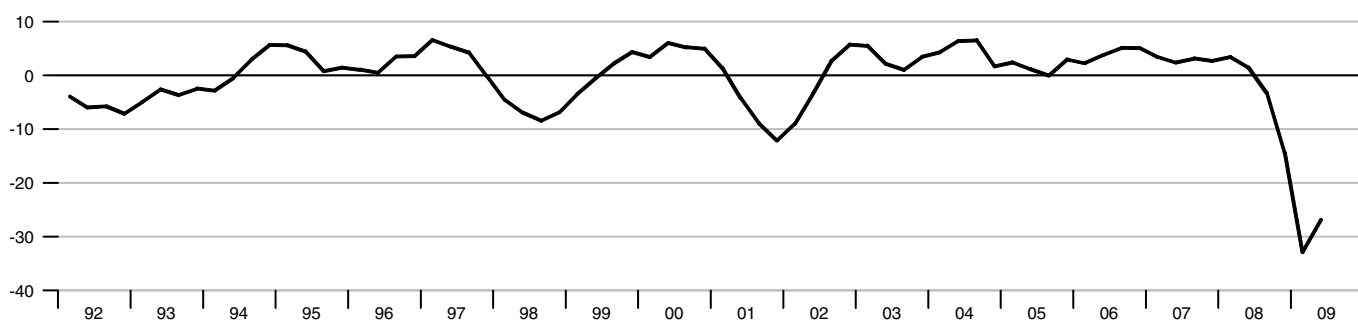


**GDP**

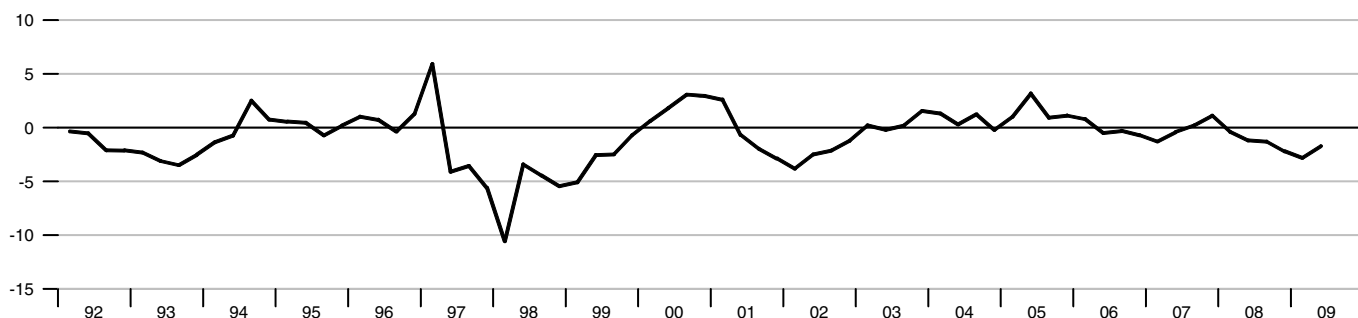
Percent change from year ago

**Industrial Production**

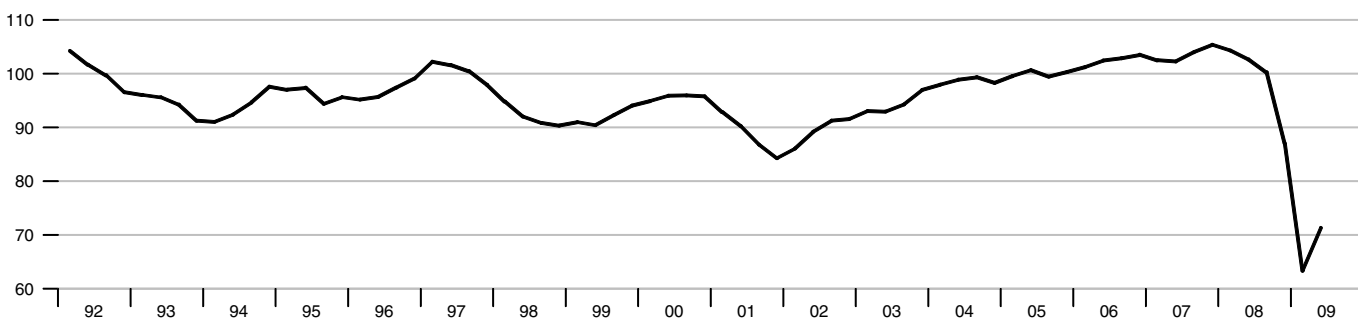
Percent change from year ago

**Retail Sales**

Percent change from year ago

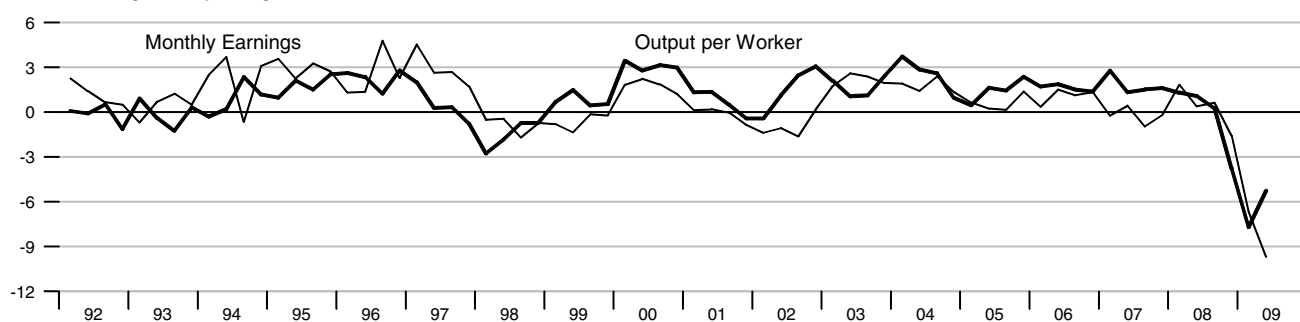
**Capacity Utilization**

2005 = 100



## Real Monthly Earnings and Output per Worker

Percent change from year ago



## Labor Force Indicators

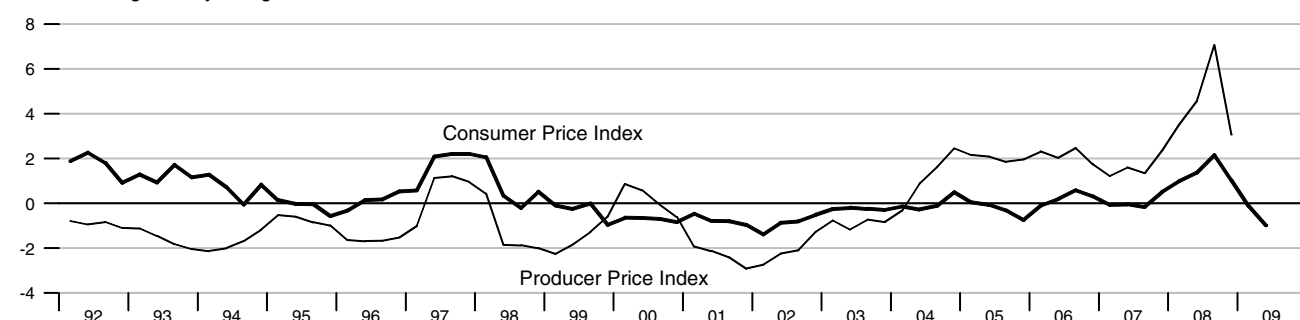
Percent change from year ago

Percent



## Inflation

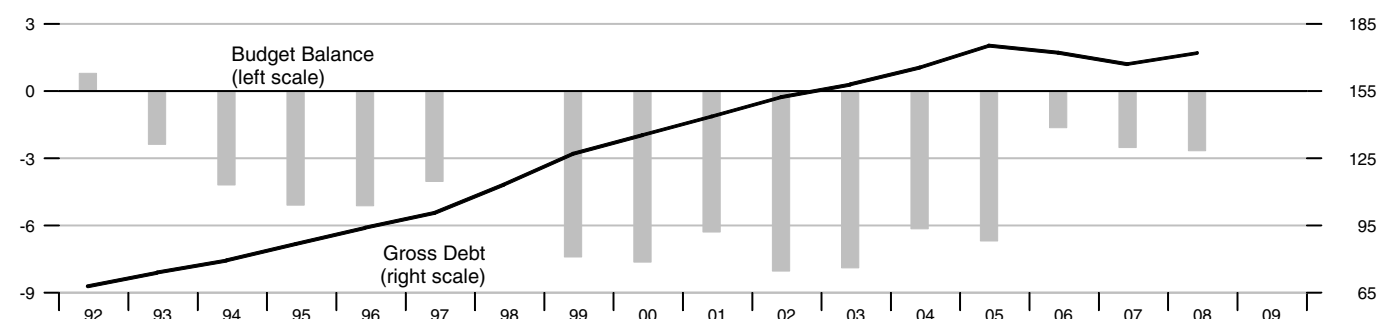
Percent change from year ago



## Gross Government Debt and Budget Balance

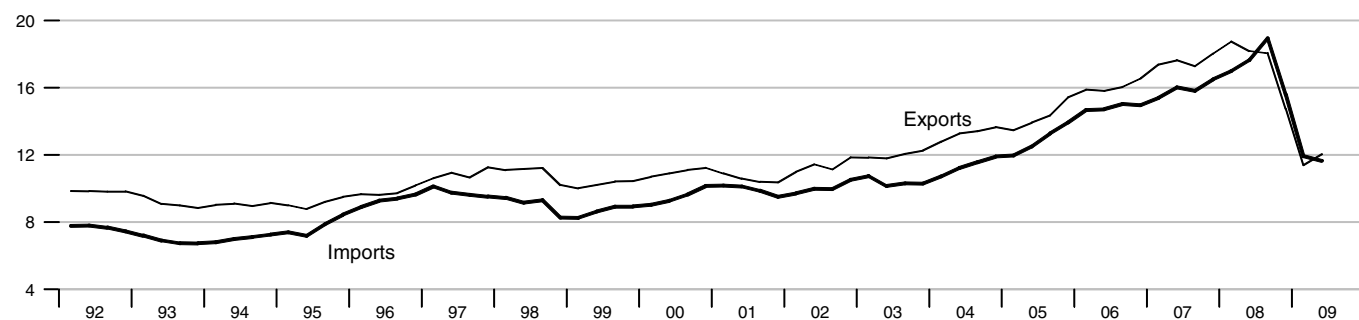
Percent of GDP, annual data

Percent of GDP, annual data



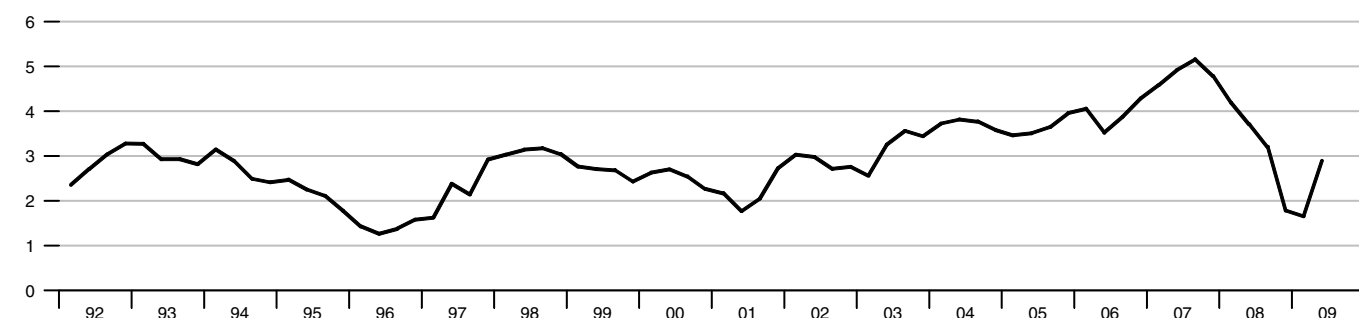
## International Trade - Goods and Services

Percent of GDP



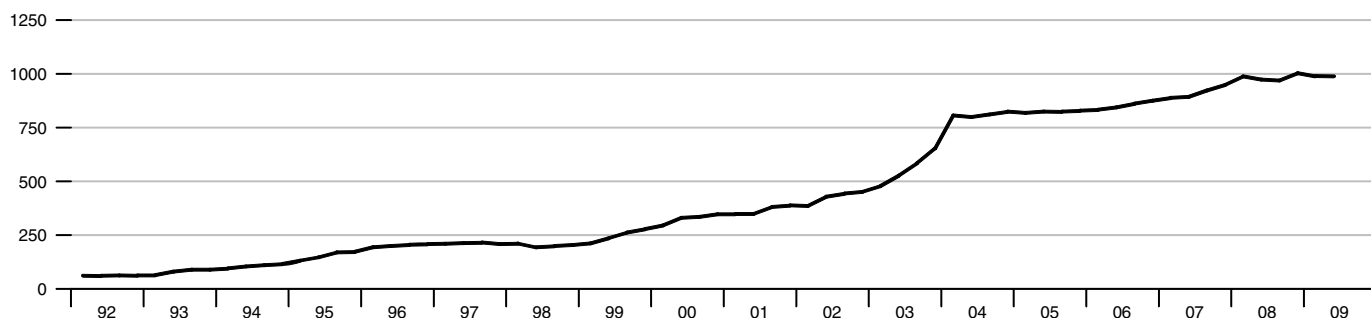
## Current Account Balance

Percent of GDP



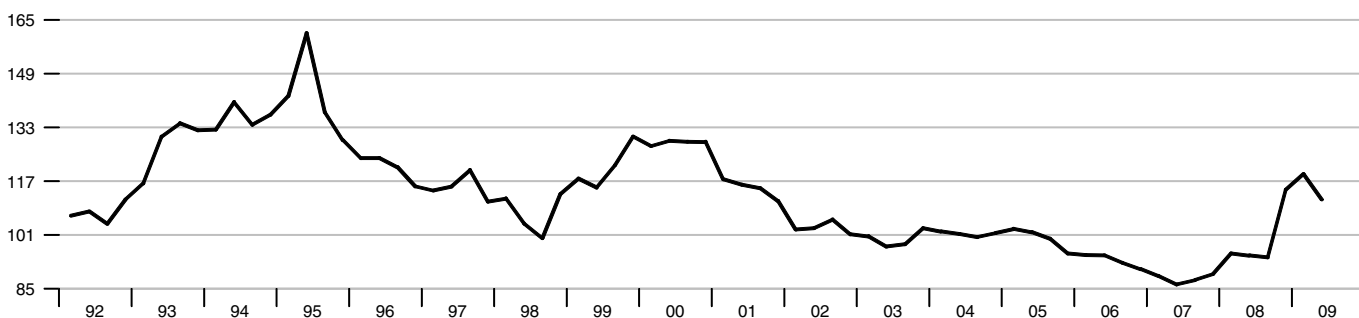
## Foreign Exchange Reserves

Billions of US\$



## Real Effective Exchange Rate

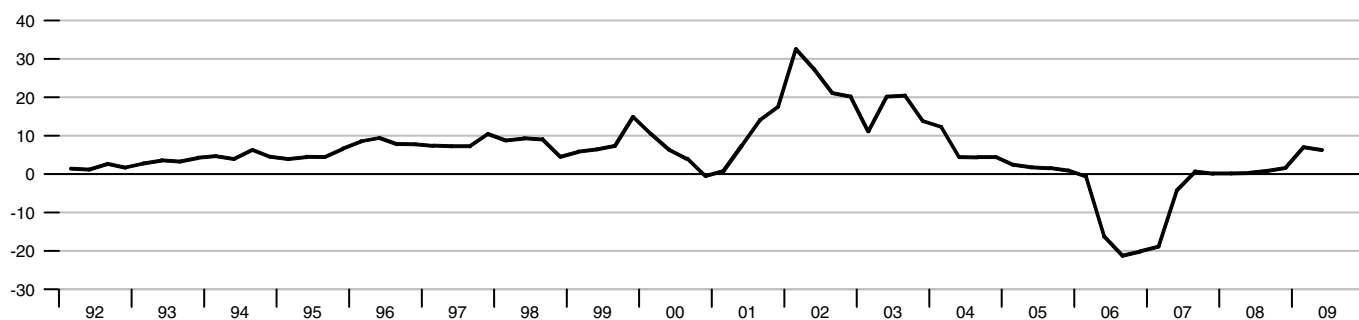
Index 2000 = 100





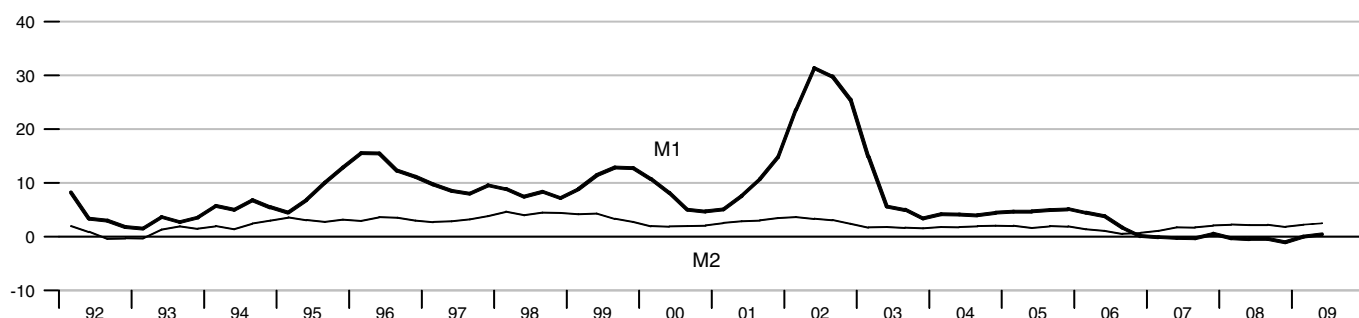
## Adjusted Monetary Base

Percent change from year ago



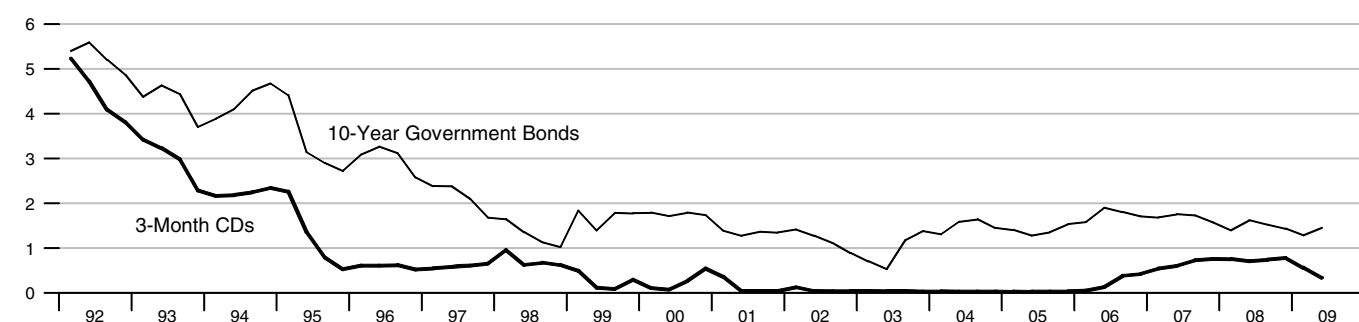
## Monetary Aggregates

Percent change from year ago



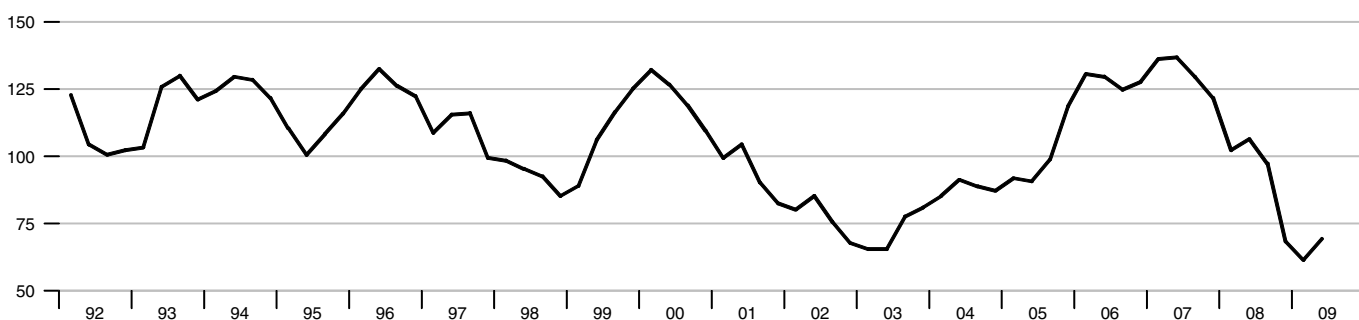
## Interest Rates

Percent



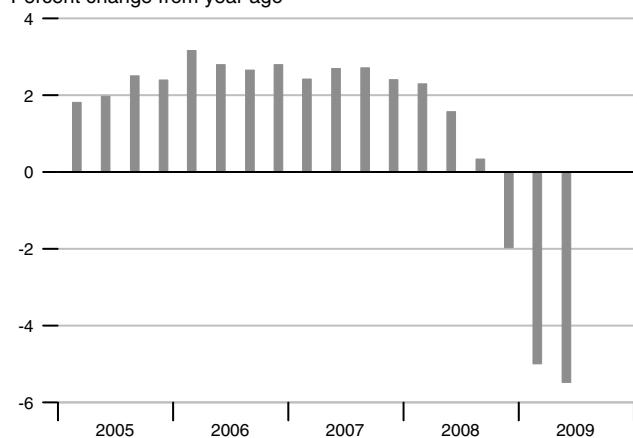
## Stock Exchange Index - Tokyo Stock Exchange

2005 = 100



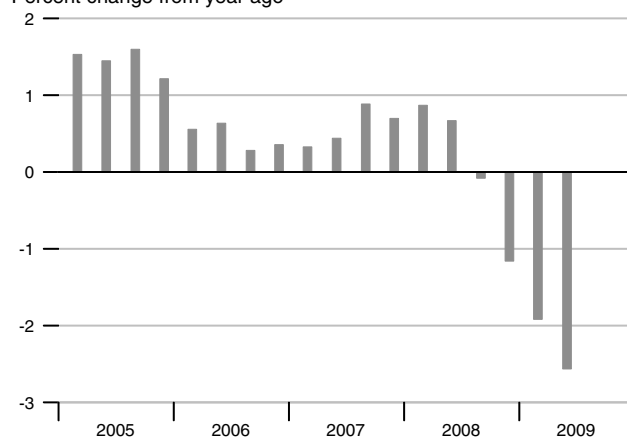
### Real GDP

Percent change from year ago



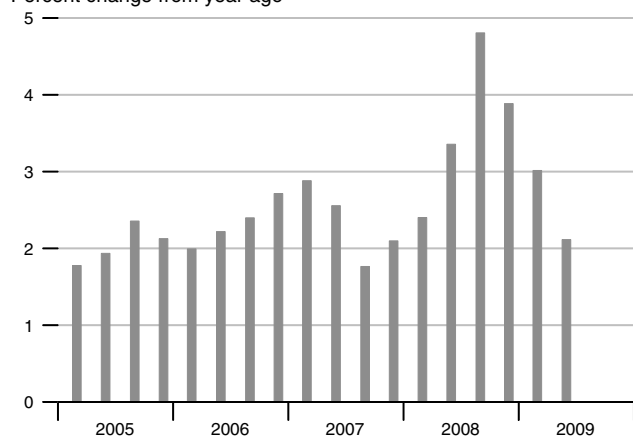
### Employment

Percent change from year ago



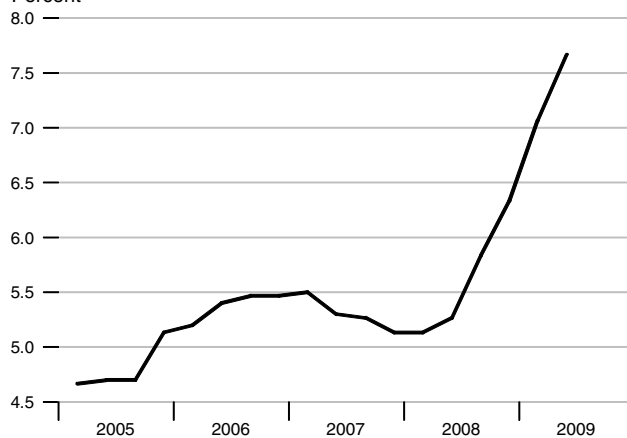
### Consumer Price Index

Percent change from year ago



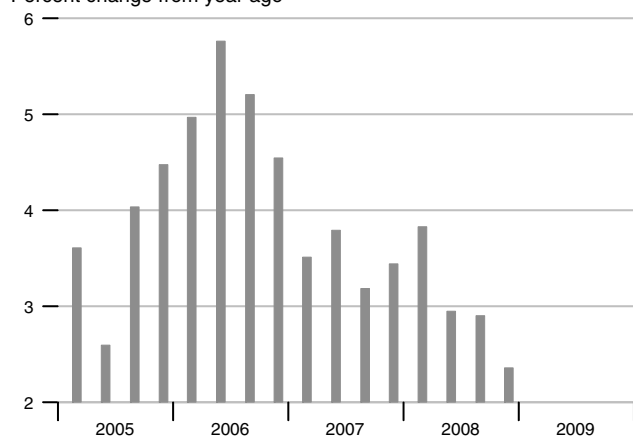
### Unemployment Rate

Percent



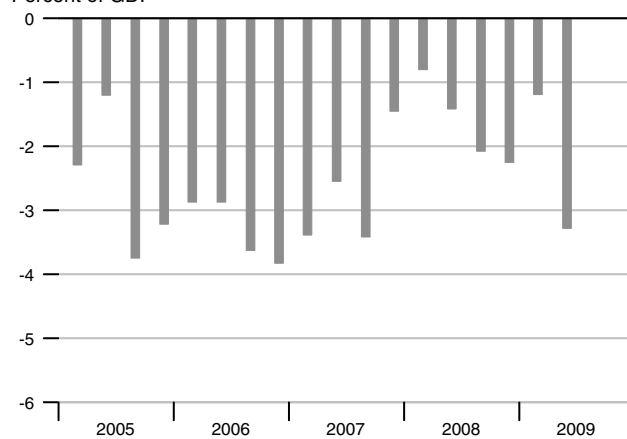
### Real Weekly Earnings

Percent change from year ago



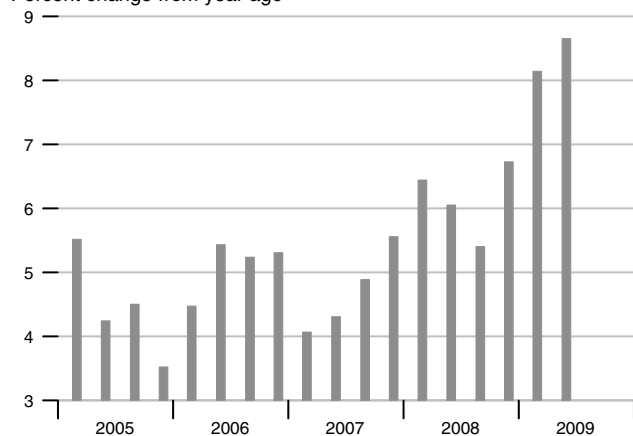
### Current Account Balance

Percent of GDP



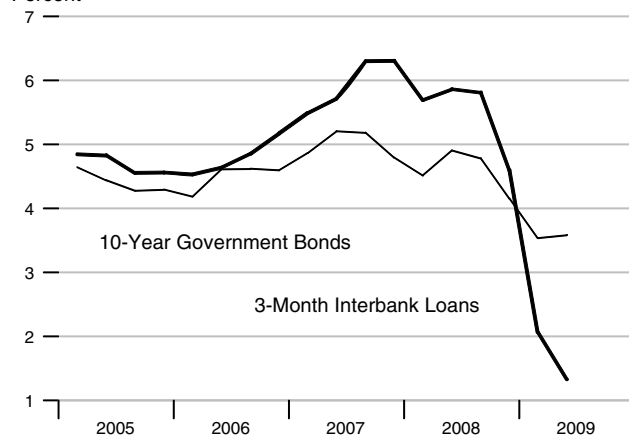
## Notes and Coins in Circulation

Percent change from year ago



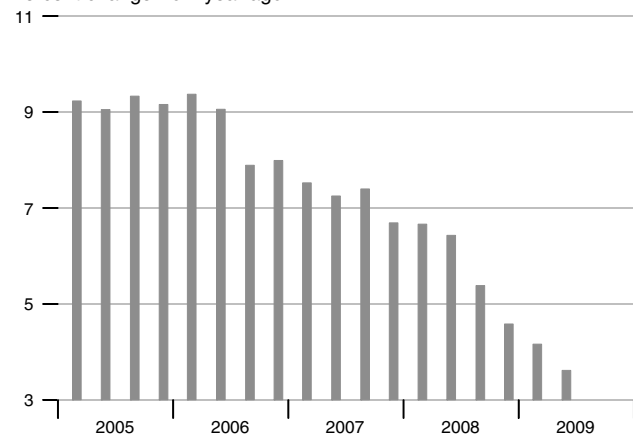
## Interest Rates

Percent



## M2

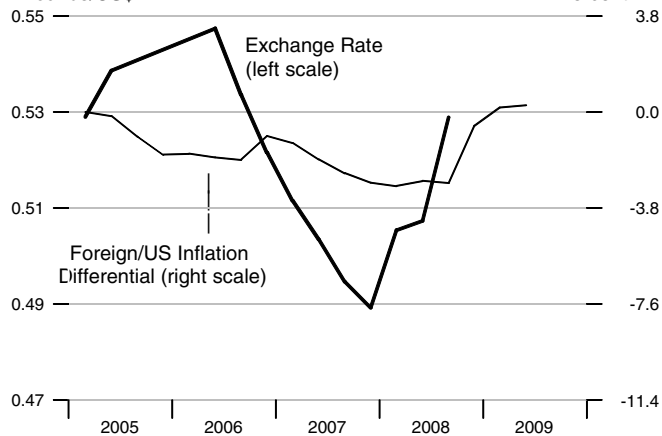
Percent change from year ago



## Exchange Rate and Inflation Differential

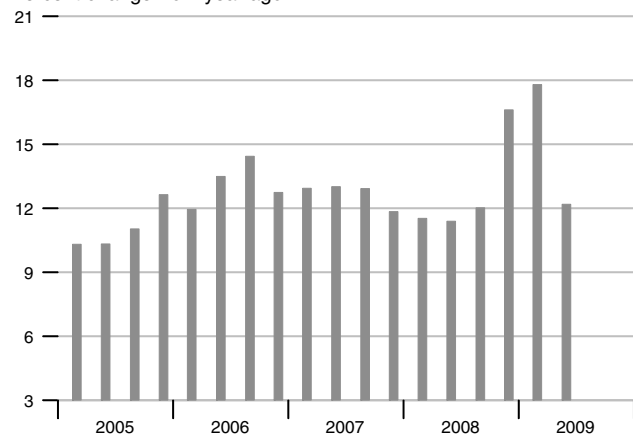
Pounds/US\$

Percent



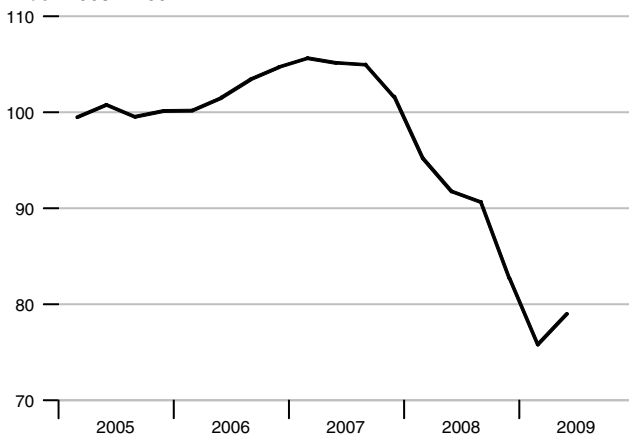
## M4

Percent change from year ago



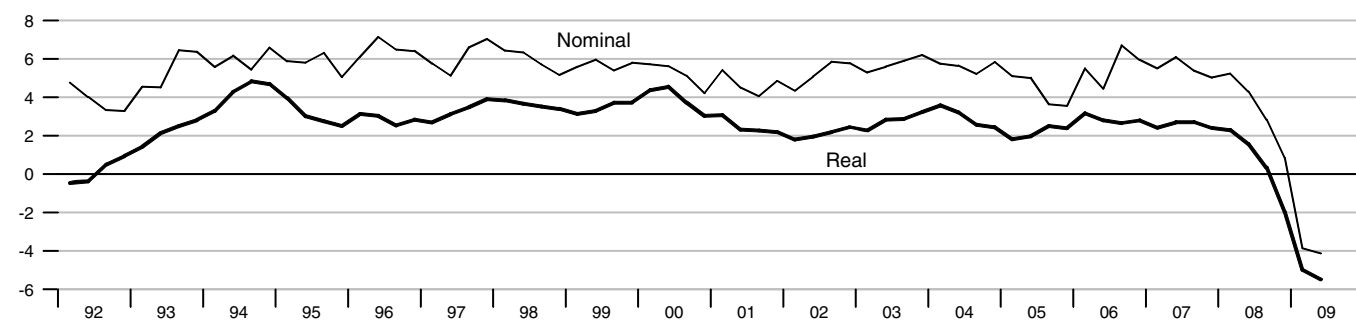
## Real Effective Exchange Rate

Index 2005 = 100

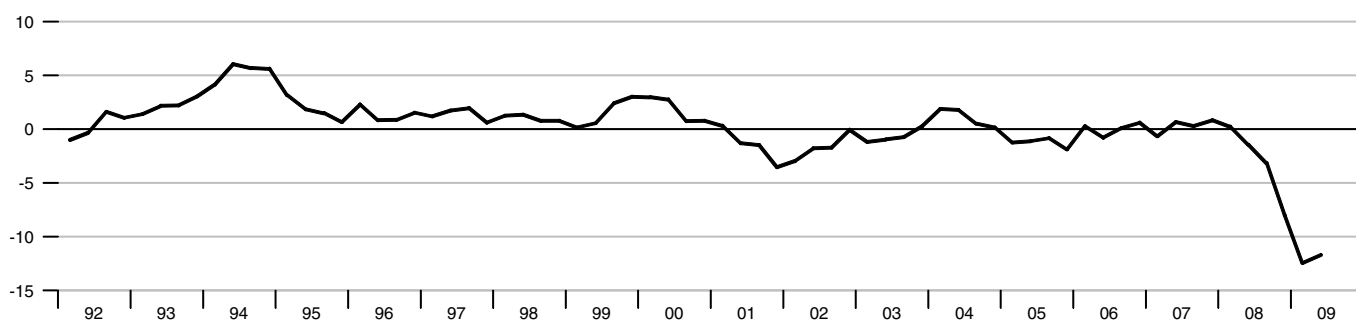


**GDP**

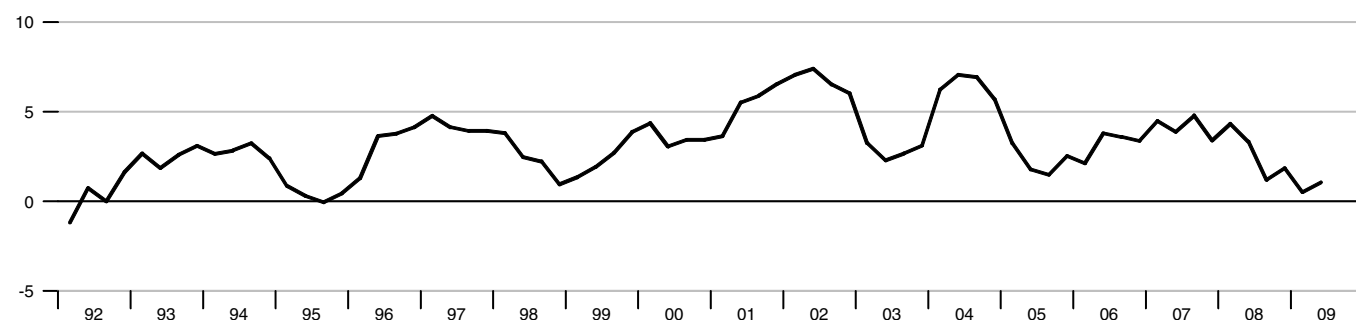
Percent change from year ago

**Industrial Production**

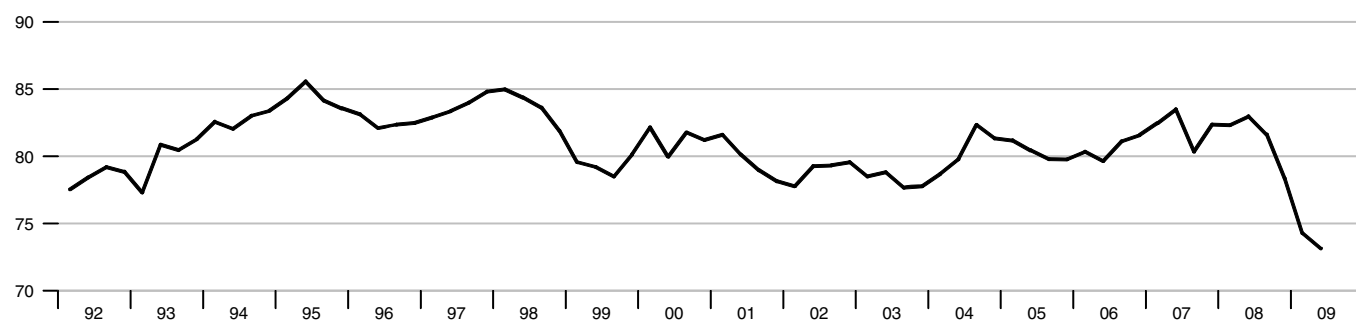
Percent change from year ago

**Retail Sales**

Percent change from year ago

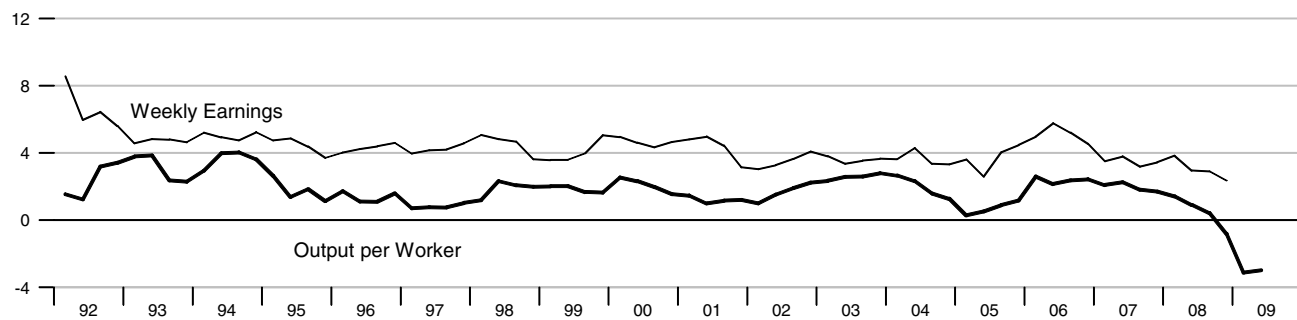
**Capacity Utilization**

Percent



## Real Weekly Earnings and Output per Worker

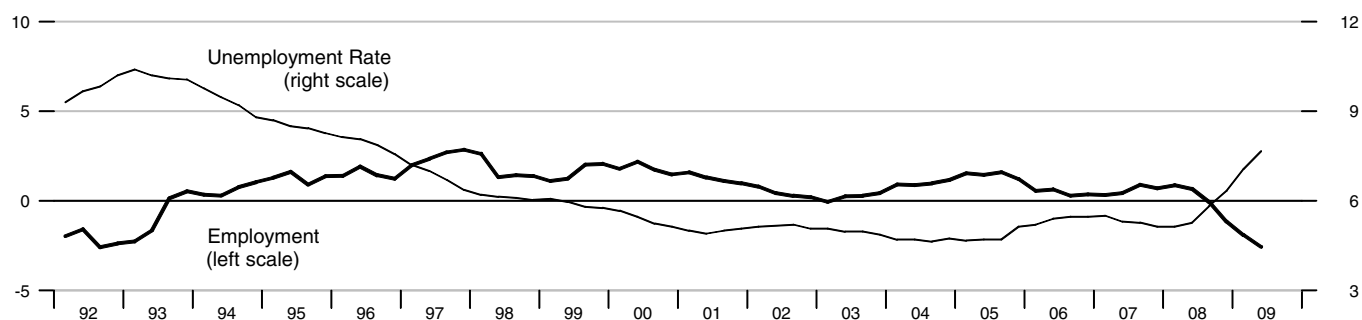
Percent change from year ago



## Labor Force Indicators

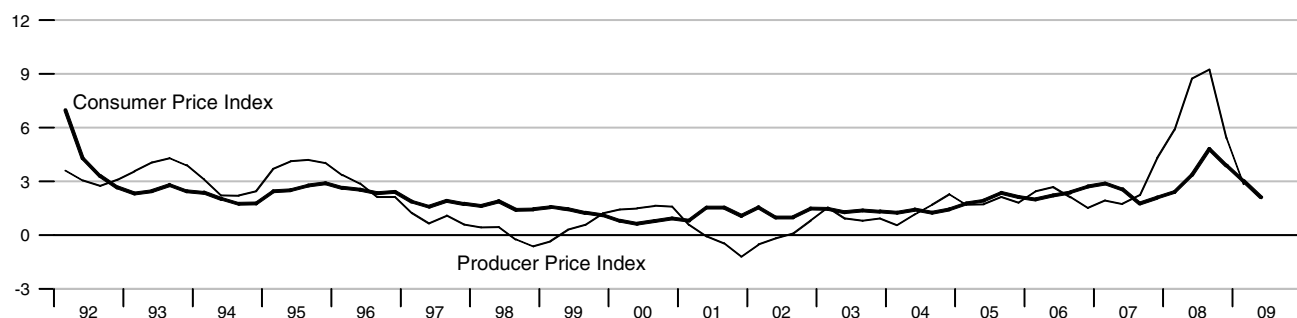
Percent change from year ago

Percent



## Inflation

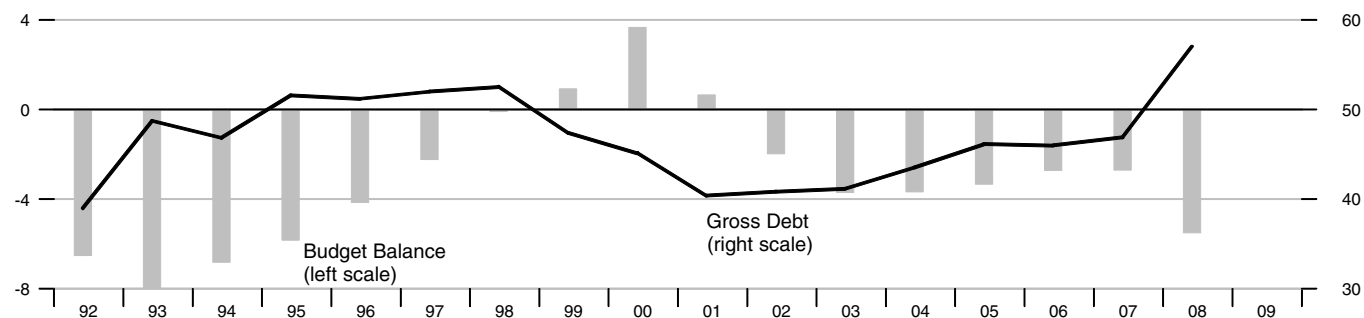
Percent change from year ago



## Gross Government Debt and Budget Balance

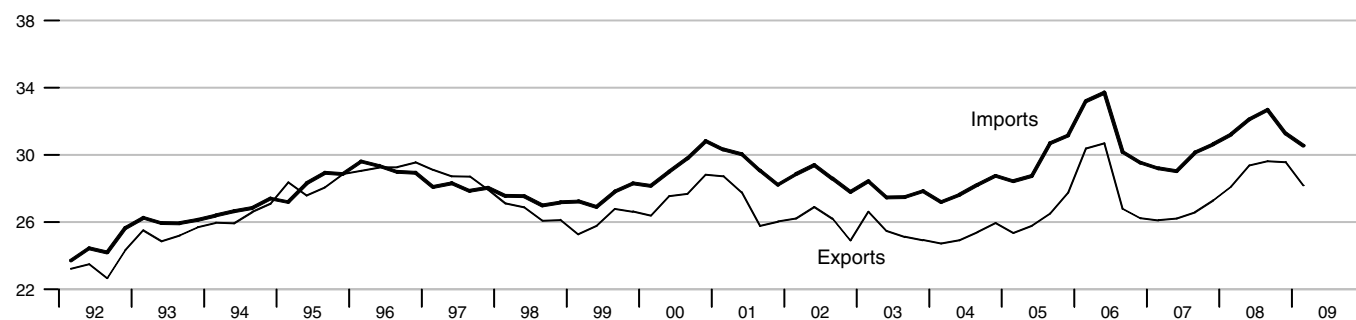
Percent of GDP, annual data

Percent of GDP, annual data

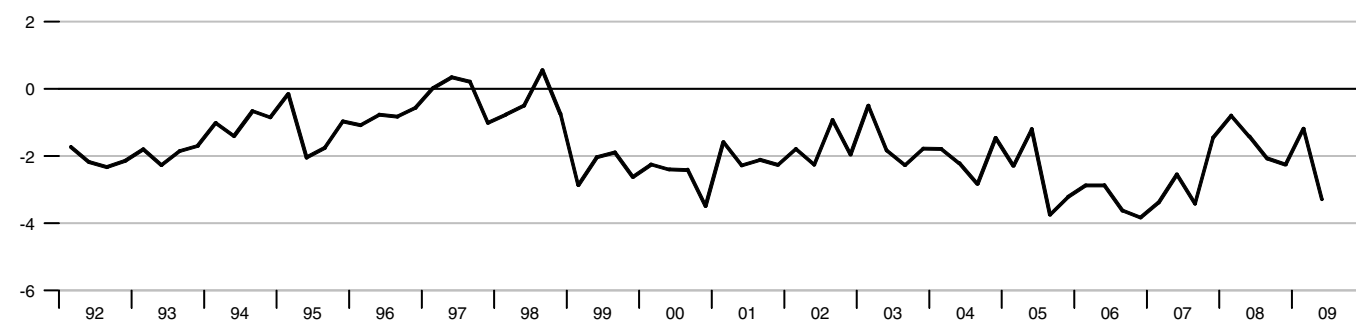


**International Trade - Goods and Services**

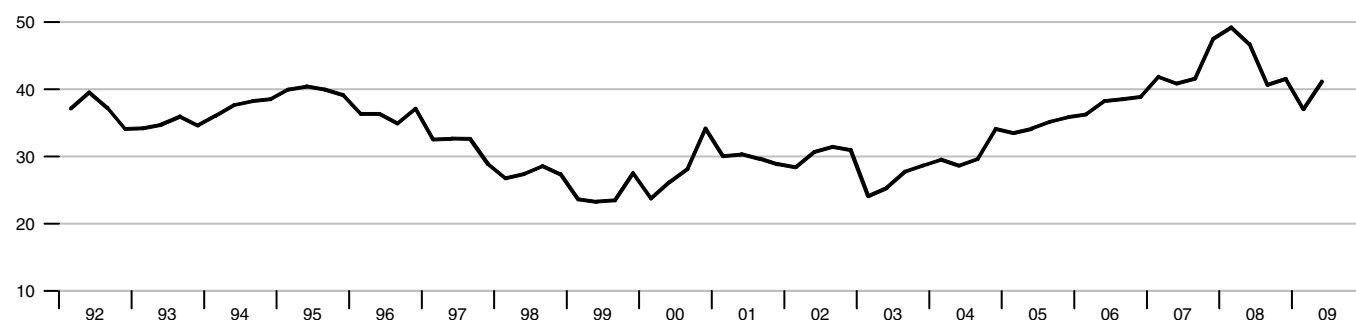
Percent of GDP

**Current Account Balance**

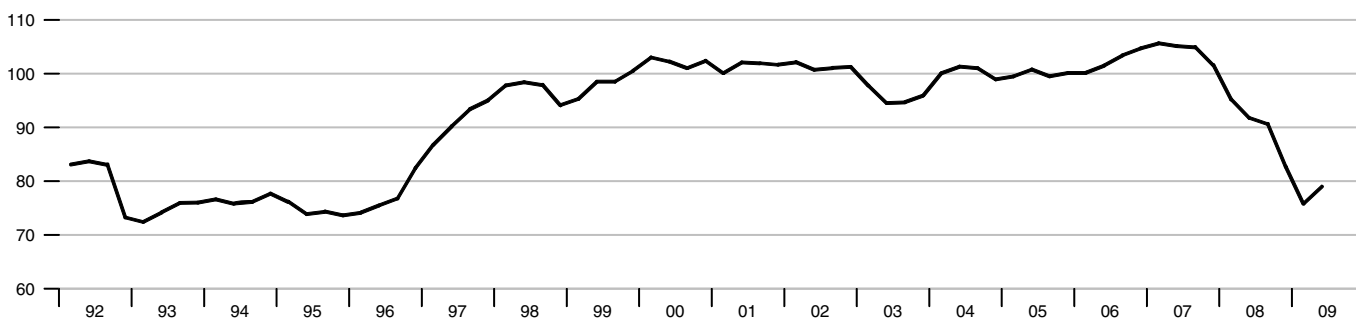
Percent of GDP

**Foreign Exchange Reserves**

Billions of US\$

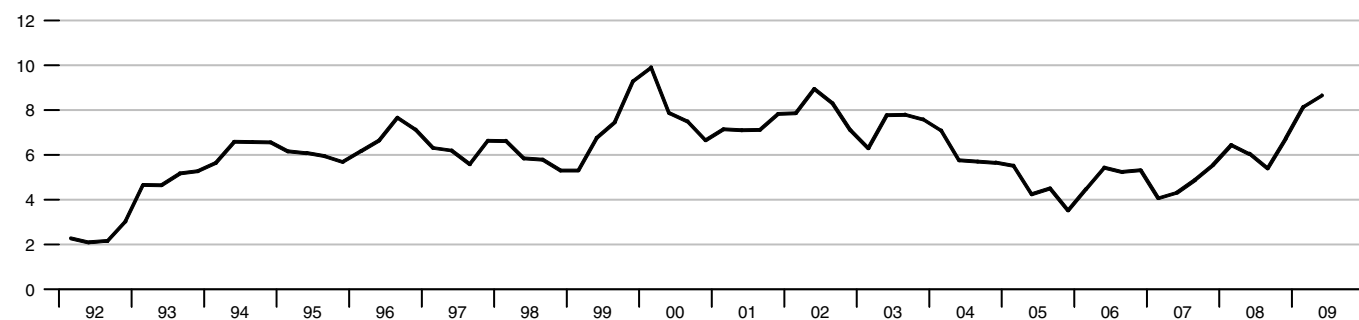
**Real Effective Exchange Rate**

Index 2005 = 100



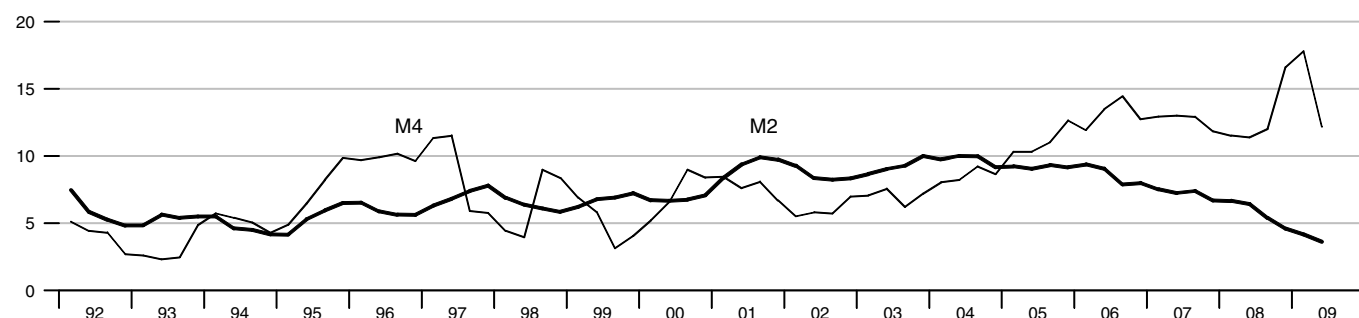
## Notes and Coins in Circulation

Percent change from year ago



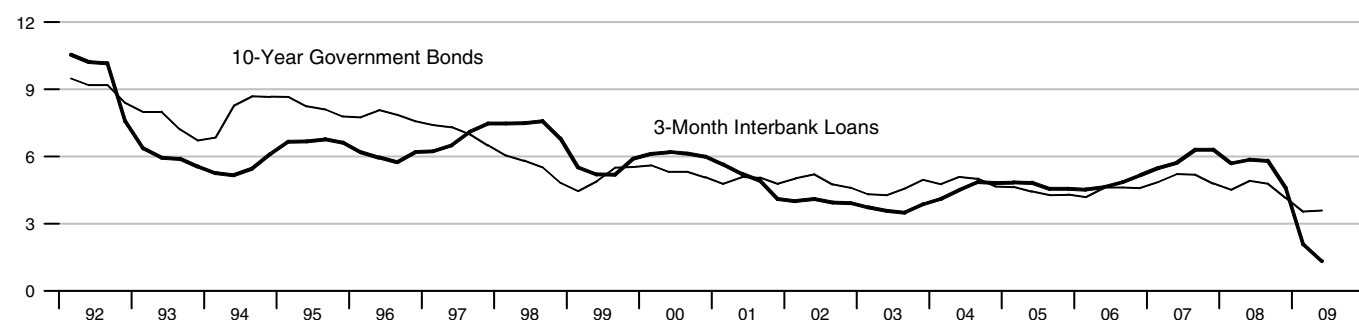
## Monetary Aggregates

Percent change from year ago



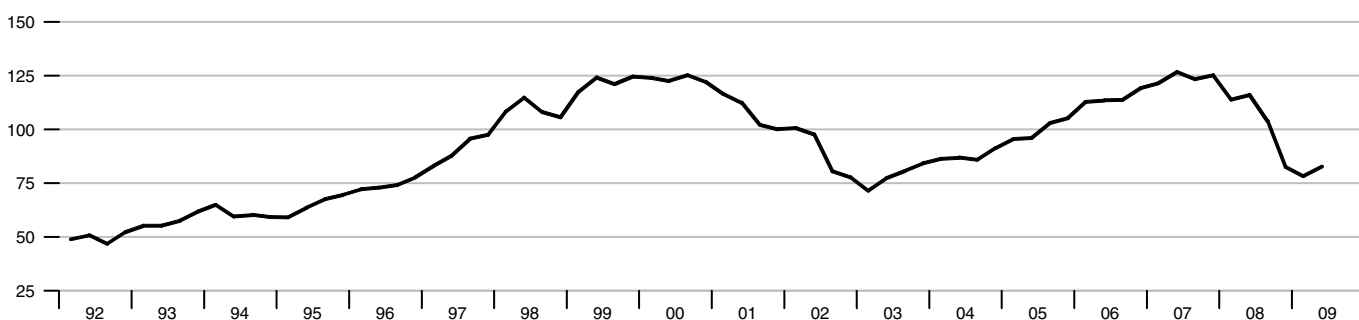
## Interest Rates

Percent



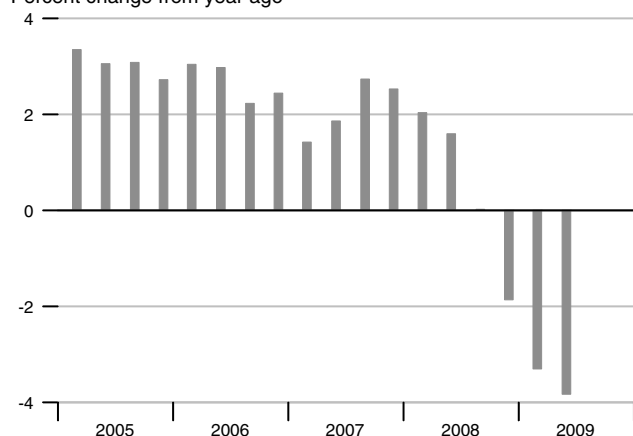
## Stock Exchange Index - Financial Times Stock Exchange

2005 = 100



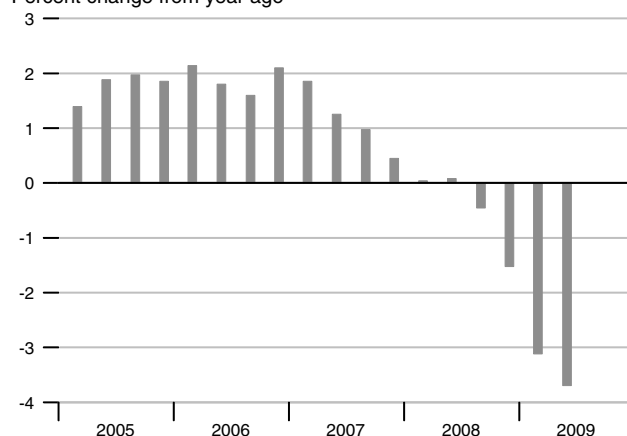
### Real GDP

Percent change from year ago



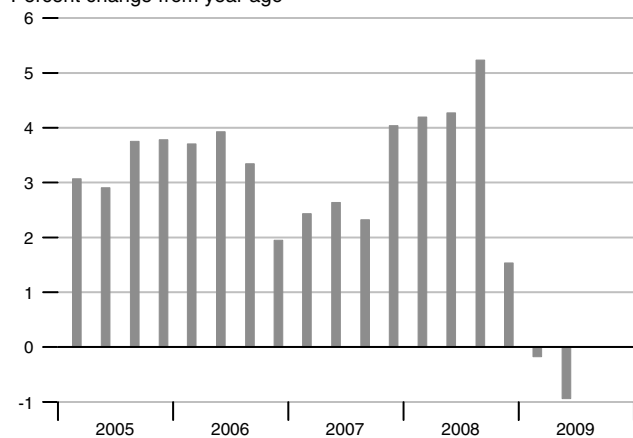
### Employment

Percent change from year ago



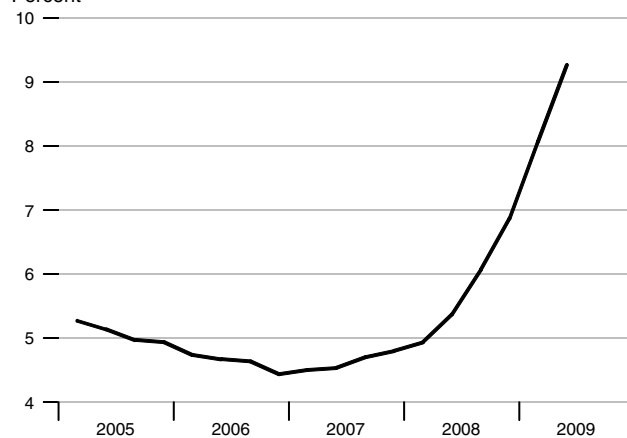
### Consumer Price Index

Percent change from year ago



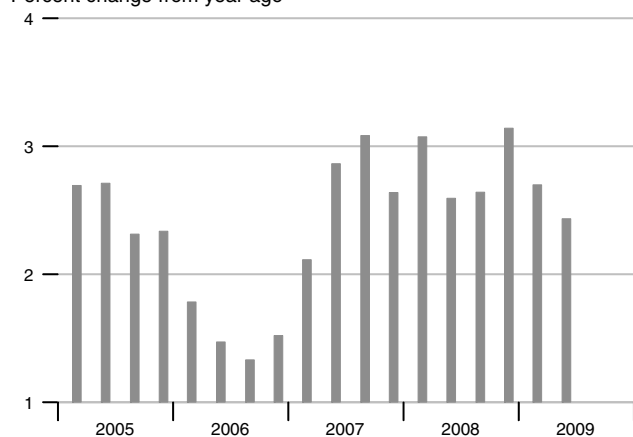
### Unemployment Rate

Percent



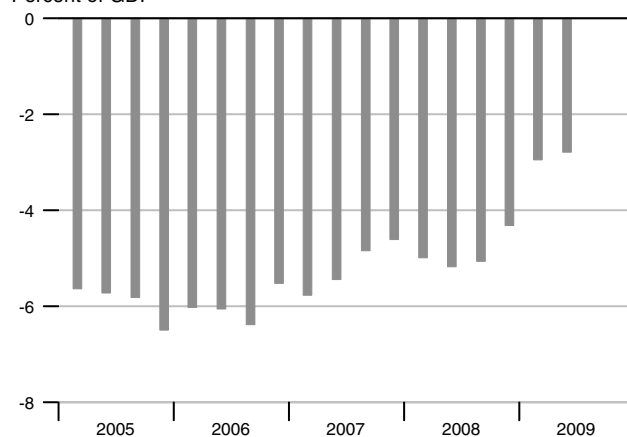
### Real Hourly Earnings

Percent change from year ago



### Current Account Balance

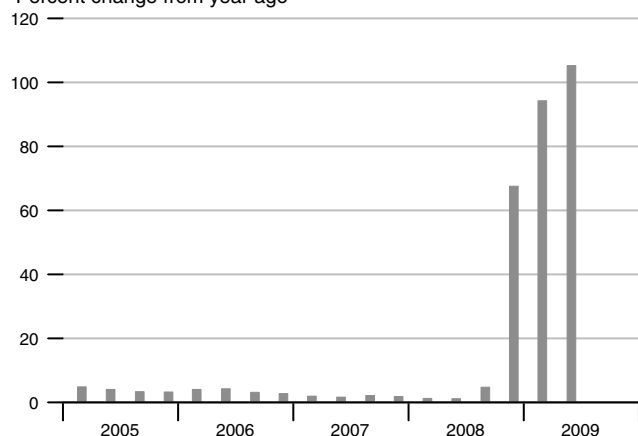
Percent of GDP



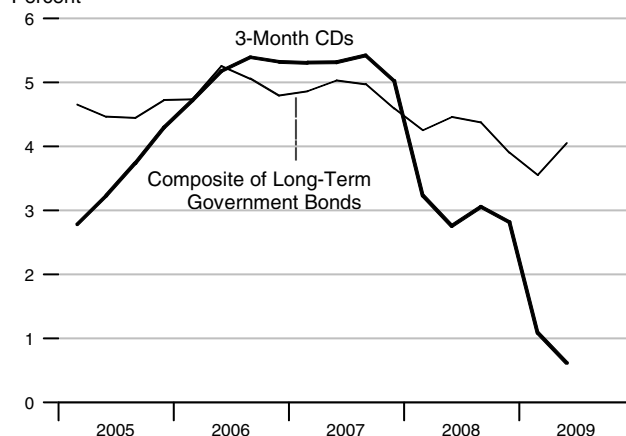


**Adjusted Monetary Base**

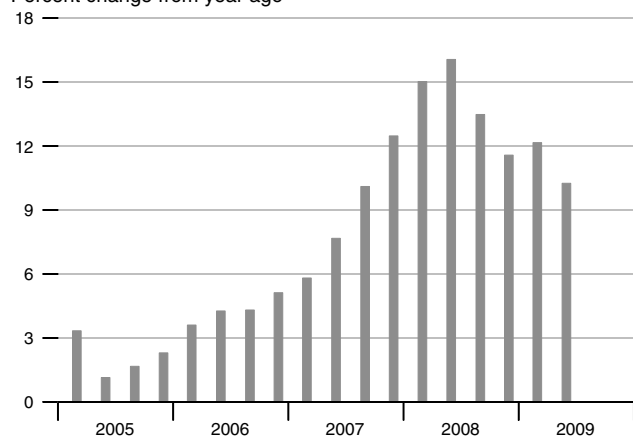
Percent change from year ago

**Interest Rates**

Percent

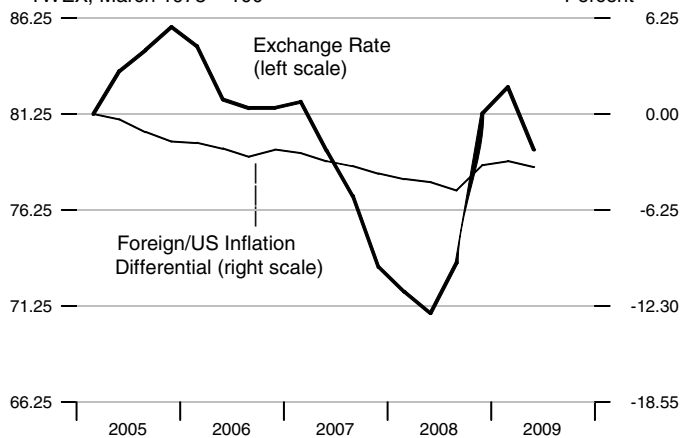
**MZM**

Percent change from year ago

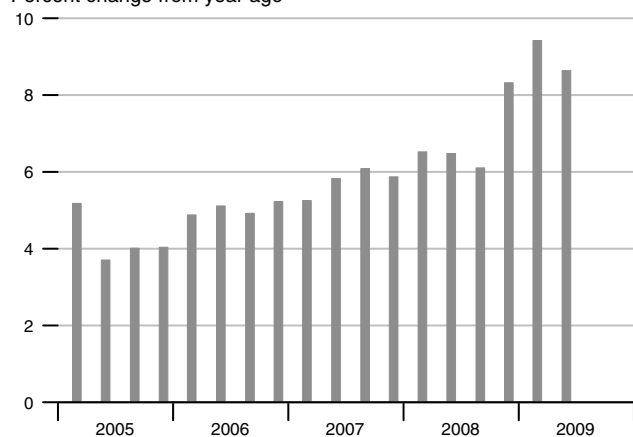
**Exchange Rate and Inflation Differential**

TWEX, March 1973 = 100

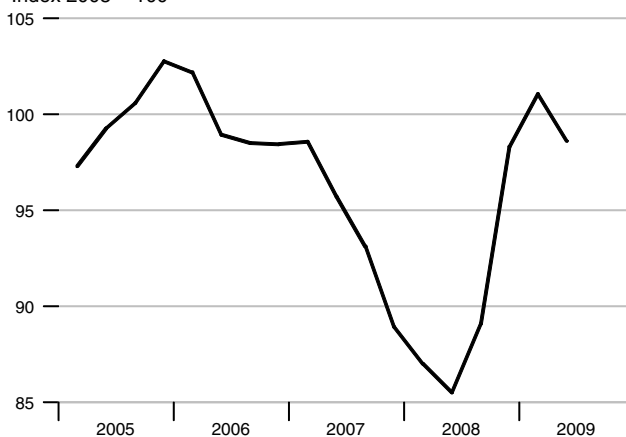
Percent

**M2**

Percent change from year ago

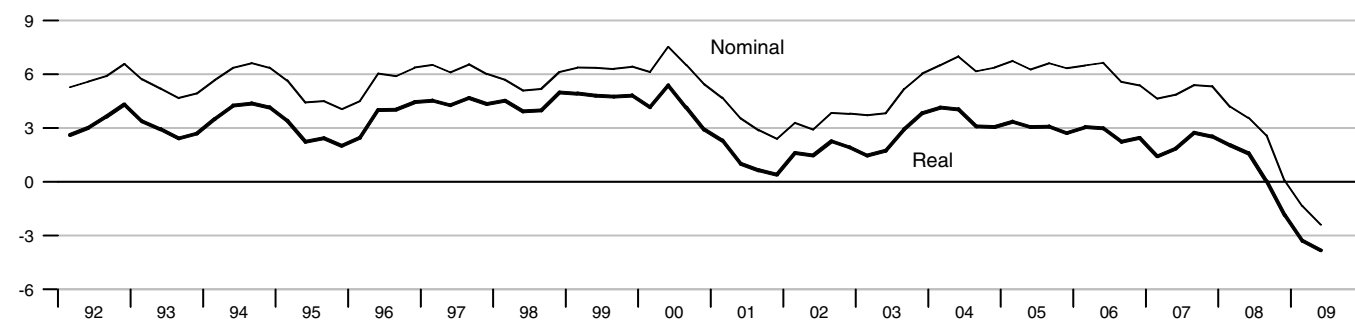
**Real Effective Exchange Rate**

Index 2005 = 100

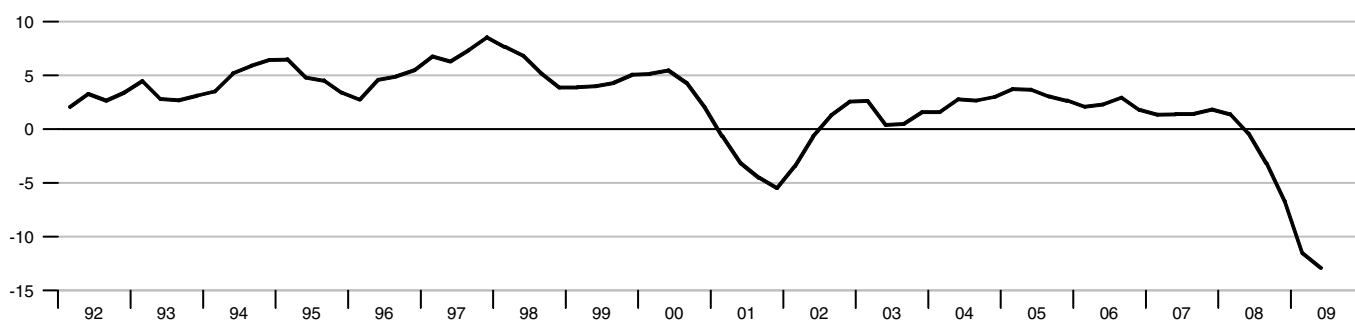


**GDP**

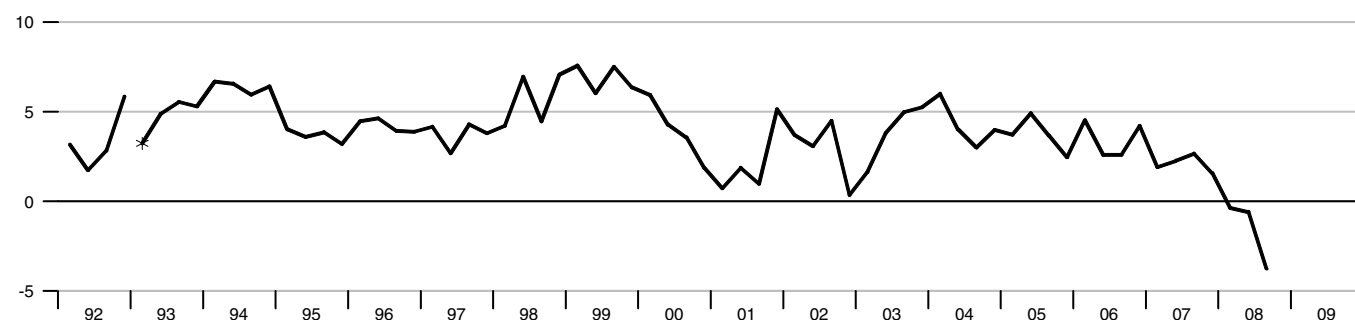
Percent change from year ago

**Industrial Production**

Percent change from year ago

**Retail Sales**

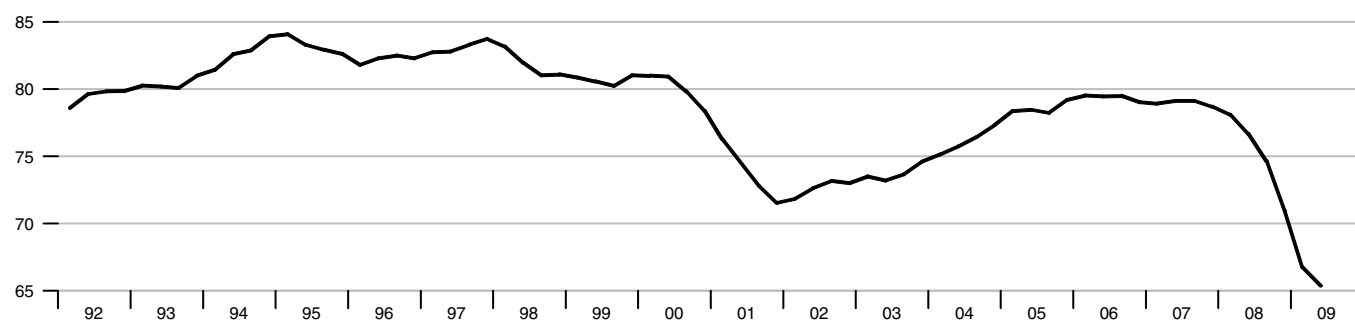
Percent change from year ago



\*Data prior to 1993 may not be strictly comparable with later figures (see Notes).

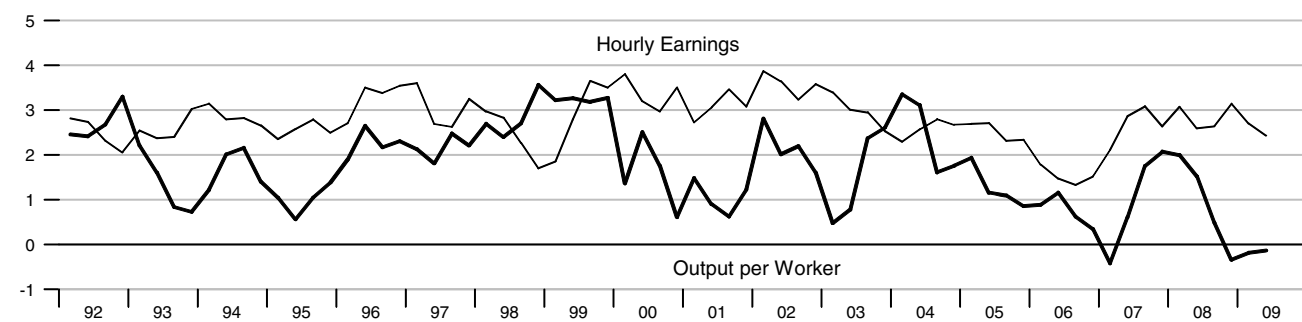
**Capacity Utilization**

Percent



## Real Hourly Earnings and Output per Worker

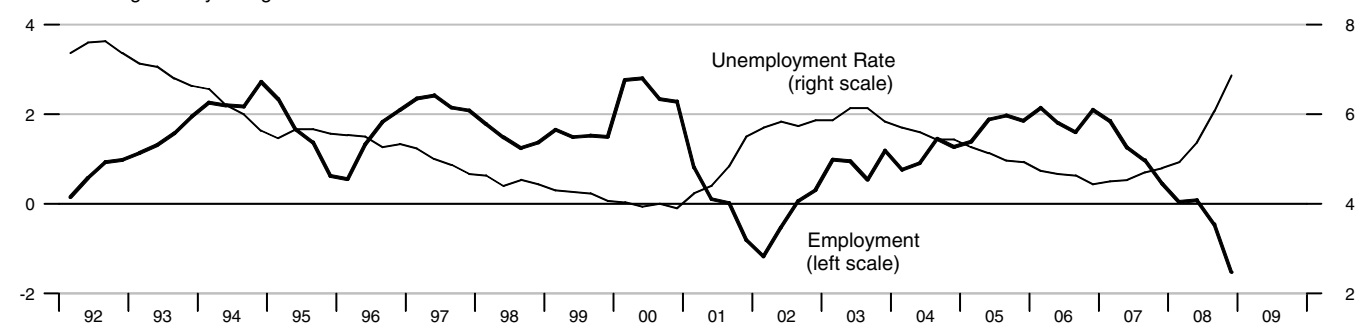
Percent change from year ago



## Labor Force Indicators

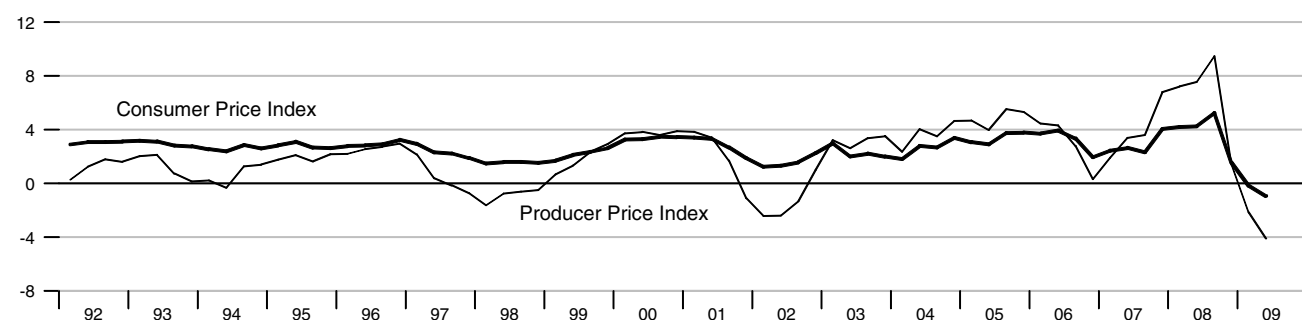
Percent change from year ago

Percent



## Inflation

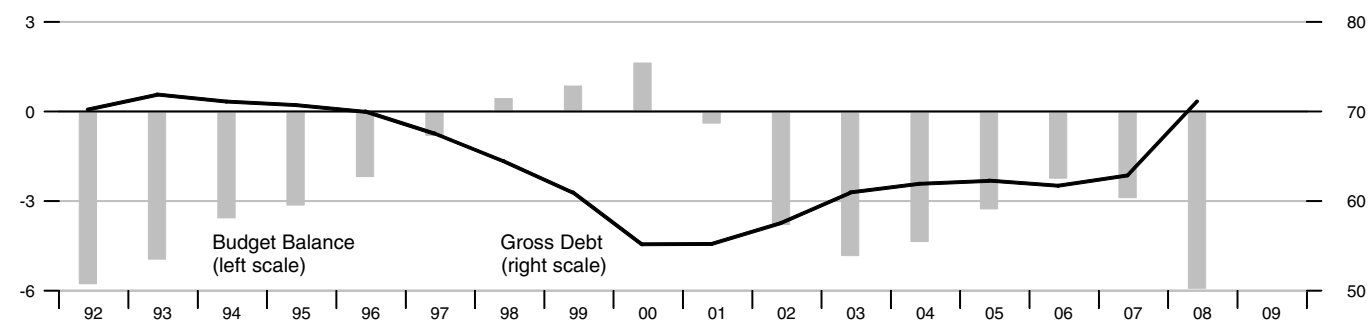
Percent change from year ago



## Gross Government Debt and Budget Balance

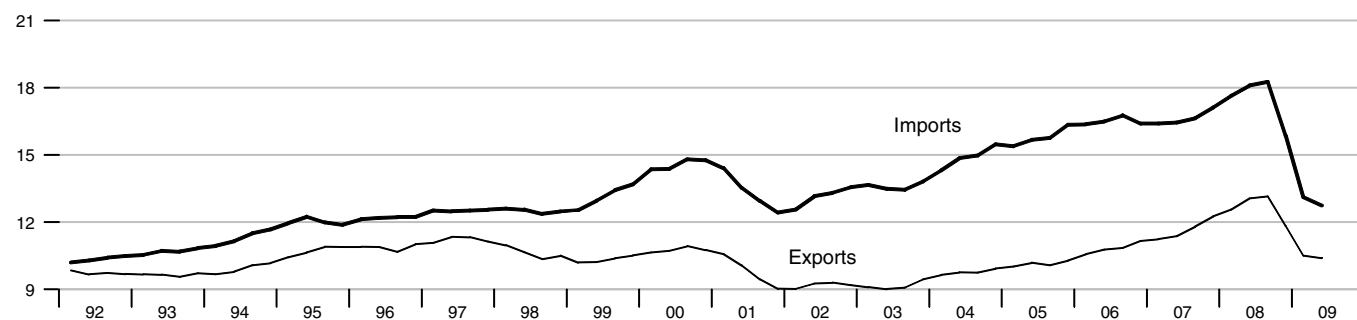
Percent of GDP, annual data

Percent of GDP, annual data



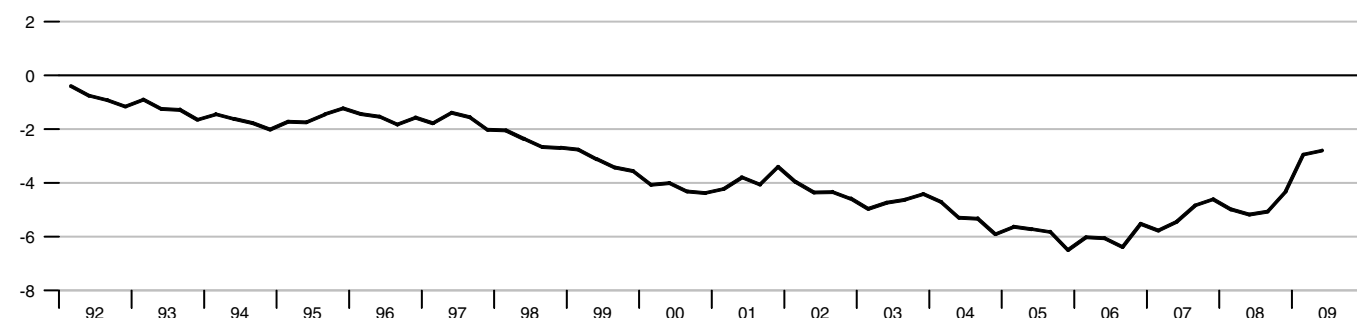
# International Trade - Goods and Services

Percent of GDP



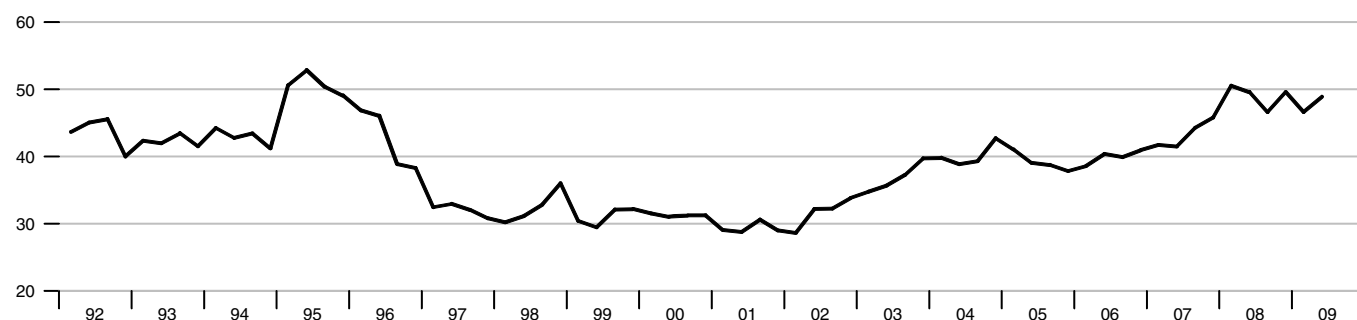
# Current Account Balance

Percent of GDP



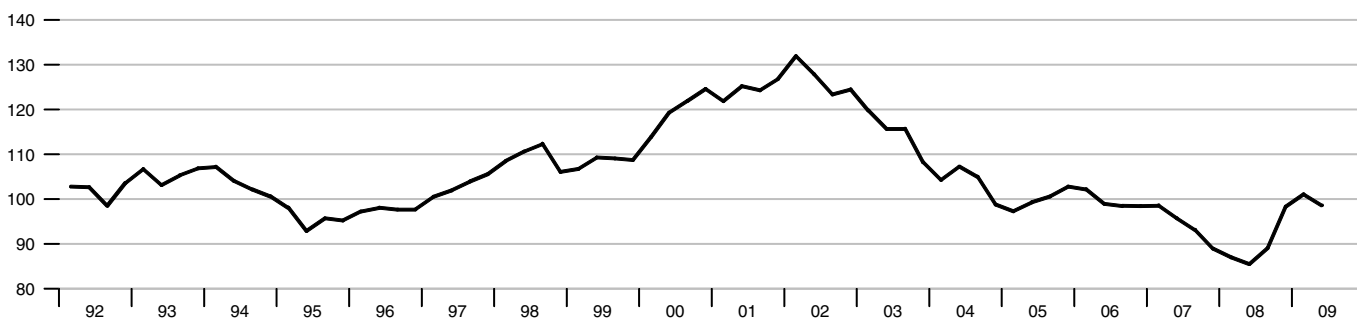
# Foreign Exchange Reserves

Billions of US\$



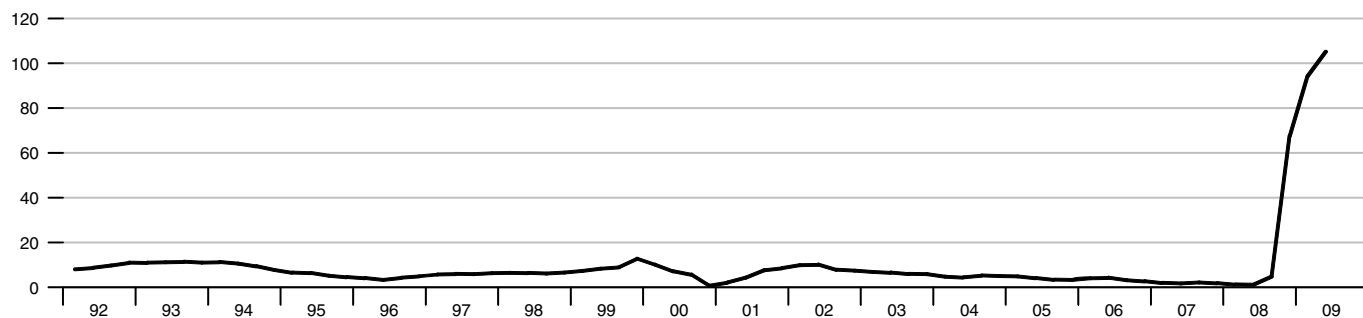
# Real Effective Exchange Rate

Index 2005 = 100

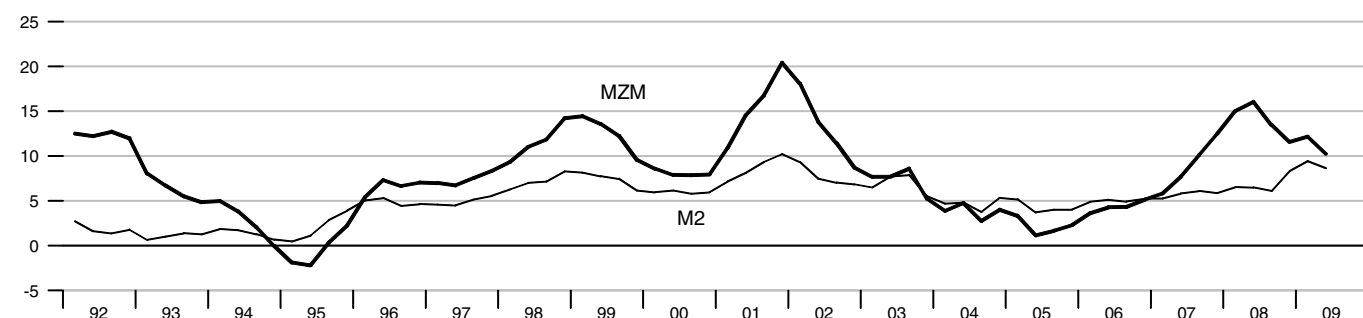


**Adjusted Monetary Base**

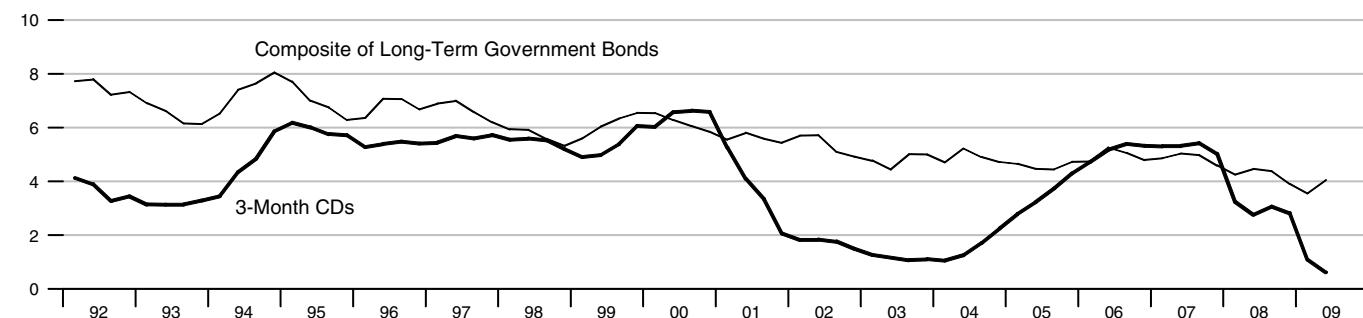
Percent change from year ago

**Monetary Aggregates**

Percent change from year ago

**Interest Rates**

Percent

**Stock Exchange Index - New York Stock Exchange**

2005 = 100



## Notes

**Euro-Area Data:** Euro-area countries are Austria, Belgium, Cyprus, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Malta, the Netherlands, Portugal, Slovenia, Slovakia, and Spain. Data series are break adjusted and include all euro area countries for the full sample, with these exceptions: Series for interest rates are not break adjusted. Historical euro area series for government debt and budget balance do not include Slovenia, Cyprus, Malta, and Slovakia.

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 1992: capacity utilization.

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.

**Real 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 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 2005. 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. **Gross 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.

**Cumulative Inflation Differential** is the cumulative change in the foreign consumer price index (CPI) over the change in the U.S. CPI, in percentage terms. The base period for the cumulative rate of change is taken to be the first period of the chart. For example, if the base period is 2002:Q1, then the cumulative inflation differential for Japan for 2006:Q3 is as follows:

$$\text{inflation differential} = 100 \cdot \left( \frac{P_{2006Q3}^J / P_{2006Q3}^{US}}{P_{2002Q1}^J / P_{2002Q1}^{US}} - 1 \right)$$

where  $P_{2006Q3}^J$  is the Japanese CPI in the third quarter of 2006. For the U.S. chart on page 41, foreign CPI is calculated as the weighted average of the CPIs of 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 price levels for the individual euro area countries (excluding Greece and Luxembourg) are used. The cumulative inflation differential is shown because the theory of purchasing power parity states that exchange rate changes should be systematically positively related to this variable.

**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; 10-year benchmark 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.

### Notes and Coins in Circulation

United Kingdom: After reforming the rules governing bank reserves, the Bank of England discontinued its M0 series in May 2006 because the data would not be comparable to previous data. *JET* now presents a related series, "Notes and Coins in Circulation," in place of M0. The Bank of England directs interested parties to "Publication of narrow money data: the implication of money market reform" in its Autumn 2005 *Quarterly Bulletin* (<http://www.bankofengland.co.uk/publications/quarterlybulletin/qb050304.pdf>).

### M1

Japan: cash, currency in circulation, and deposit money.

Euro area: currency in circulation and overnight deposits.

### M1B

Canada: currency outside banks, chartered bank checkable deposits, less inter-bank checkable 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.

**M2**

Canada: currency outside banks, chartered bank demand and notice deposits, chartered bank personal term deposits, adjustments to M2 (continuity adjustments and inter-bank demand and notice 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)  
Bureau of Labor Statistics, U.S. Department of Labor (BLS)  
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: M1B and M2.

BOG: exchange rate.

IMF: foreign exchange reserves, merchandise and service trade, real effective exchange rate, and reserve money.

OECD1: gross 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**

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.

Haver Analytics: synthetic euro exchange rate.

IMF: real effective exchange rate.

OECD1: gross government debt and budget balance.

OECD2: hourly earnings, industrial production, M1, M3, stock exchange index, and unemployment.

**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: gross government debt and budget balance.

OECD2: current account balance, GDP, hourly earnings, industrial production, retail sales, interest rates, stock exchange index, and unemployment.

**Germany**

BOG: exchange rate.

Bundesanstalt Fur Arbeit: employment.

Eurostat: capacity utilization, consumer price index, and producer price index.

IMF: foreign exchange reserves, merchandise and service trade, and real effective exchange rate.

OECD1: gross government debt and budget balance.

OECD2: current account balance, GDP, hourly earnings, industrial production, M1, M3, retail sales, interest rates, stock exchange index, and unemployment.

Statistical Office of Germany: new hourly earnings.

**Italy**

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.

Istituto Nazionale di Statistica: employment.

OECD1: gross 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.

IMF: foreign exchange reserves, merchandise and service trade, and real effective exchange rate.

OECD1: gross 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**

Bank of England: M2.

BOG: exchange rate.

IMF: foreign exchange reserves, merchandise and service trade, and real effective exchange rate.

OECD1: gross 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.

U.K. Office for National Statistics: employment and Notes and Coins in Circulation.

**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: gross government debt and budget balance.

OECD2: hourly earnings, stock exchange index, and unemployment.