

## Part VIII: The Most Recent Period: 1990 - 2003

### Objectives for Chapter 28: The American Economy Since 1990

At the end of Chapter 28, you will be able to answer the following:

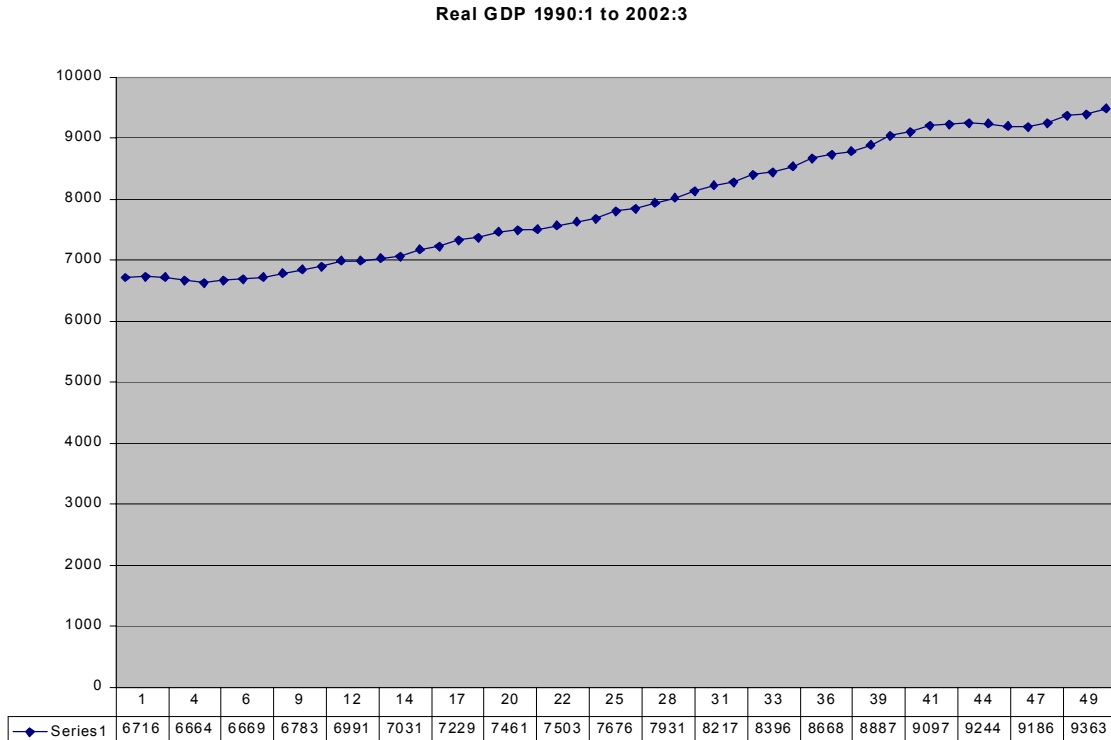
1. Briefly describe the economic performance of the American economy since 1990.
2. Describe and evaluate the **fiscal policies** of the Bush Administration (through 1992), the Clinton Administration (1993 to 2000), and the Bush Administration (since 2001).
3. Describe and evaluate the **monetary policies** of the Federal Reserve in this period.
4. What were the “*beneficial shocks*” that affected the economy in this period?
5. Describe and evaluate the **international economic policies** that were undertaken in this period, including trade policy and international financial policy.
6. Explain the “*strong dollar policy*”. Why was it undertaken? What effects did it have?
7. Explain to what extent the technological revolution has created a “**new macroeconomy**”.
8. Explain some of the economic consequences of terrorism and of war in the Middle East.

### Chapter 28: The American Economy Since 1990

#### The Performance of the American Economy Since 1990.

The decade of the 1990s began with a **recession** (July 1990 to March 1991). While there were several causes of that recession, an important one was the decline in defense spending that followed the end of the Cold War. Although that recession lasted only about 9 months, the recovery from it was quite slow. The slow recovery and the high unemployment of the early 1990s were major election issues in 1992, leading to the election of Bill Clinton as President. The Clinton presidency is associated with the **longest expansion in American history** (actually the expansion began in March of 1991, nearly two years before Bill Clinton took office). The period of extraordinary economic prosperity began in 1995 and lasted until early 2001. This was a period of rapid economic growth, more rapid growth in labor productivity than had been experienced since the early 1970s, unexpectedly low unemployment rates, unexpectedly low inflation rates, an unexpected elimination of the budget deficits of the federal government (shifting to large budget surpluses), an enormous increase in the value of stock prices and a corresponding rise in the wealth of a large number of people, and a significant reduction in poverty. It was also a period of rising trade deficits and rising inequality among the American population. The long expansion ended in March of 2001 and so lasted exactly ten years. Since that time, the United States entered a recession, followed by a very slow recovery. Unemployment has increased. Stock prices have fallen greatly. And the budget deficits have returned. Let us examine each of these points. (The experience of the world economy will be considered in the next chapter.)

First, let us examine **Real GDP**. This is our measure of overall production. The following chart shows the trend of Real GDP from 1990 to 2002. Note the recession at the beginning of the 1990s, as Real GDP declined slightly. Then, note the recovery and the rapid rise in Real GDP until March of 2001 (and the beginning of another recession).



Real GDP, as stated above, measures total production. And the amount of production determines the overall amount of income. Therefore, when Real GDP is rising, we would expect a rise in people’s incomes. And this is indeed what occurred. The following table shows the **Median Family Income Adjusted for Inflation (in 2001 dollars)**. (*The median is the middle.*) Notice the rapid increase that occurred between 1947 and 1973. Second, notice the slow increase that occurred between 1973 and 1995. Finally, notice the more significant increase that occurred between 1995 and 2000.

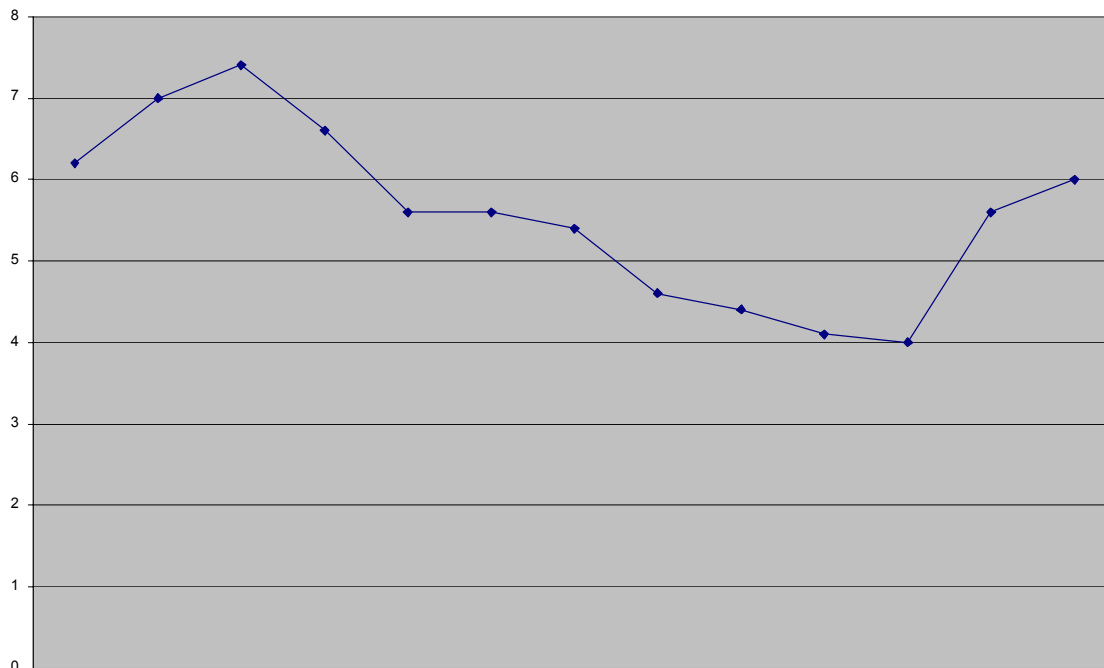
| Year | Median Family Income in 2001 Prices |
|------|-------------------------------------|
| 1947 | \$20,892                            |
| 1967 | 36,454                              |
| 1973 | 42,589                              |
| 1989 | 47,162                              |
| 1995 | 46,857                              |
| 2000 | 52,321                              |

This increase in income did not go just to the richer people but **seems to have been widely shared**. For example, while the Median Family Income rose at a rate of 2.2% per

year for whites between 1995 and 2000, it rose at 3.2% per year for blacks and at 4.9% per year for Hispanics, **narrowing the income gap between whites and minorities** (although a sizable gap remains). While the median family income rose for all age groups between 1995 and 2000, **it rose fastest for those under age 25**. And while median family income rose for all types of families between 1995 and 2000, **it rose fastest for female-headed families** (although female-headed families still had a median income only about half that of all families in 2000).

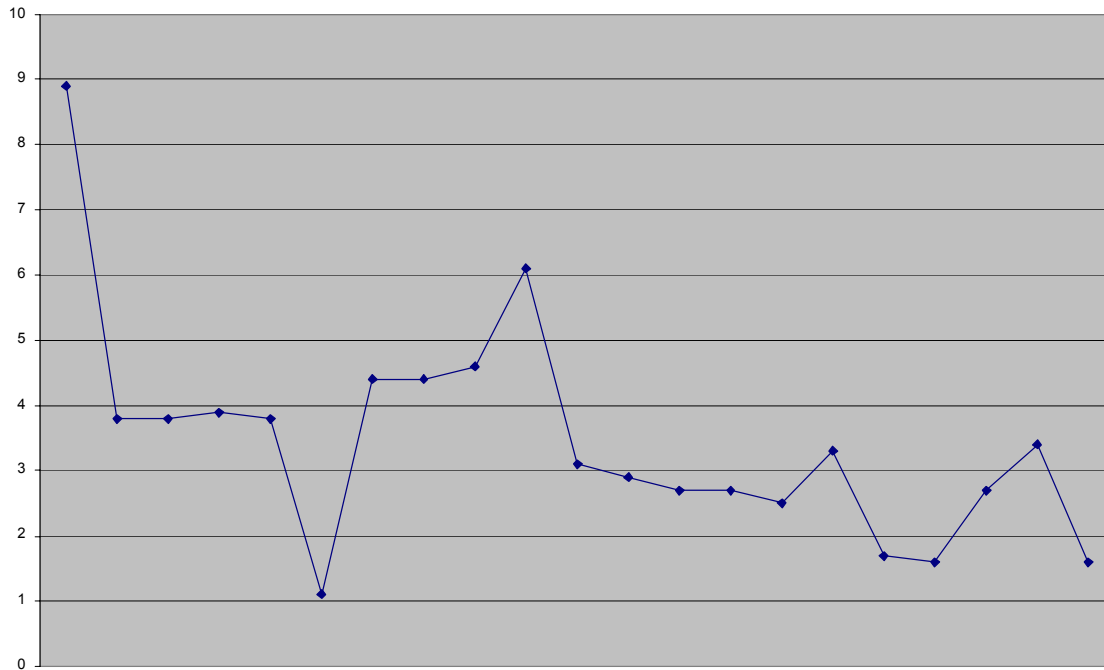
The growth in Real GDP corresponded with **a decline in unemployment rates**. In fact, the unemployment rate briefly declined below 4% in 1999. The rates of unemployment that were reached in the late 1990s were the lowest rates since the 1960s. Many people believed that we would never again see unemployment rates in the range of 4%. Yet this is indeed what occurred.

Unemployment Rates 1990 - 2002



What was especially surprising is that **the decline in unemployment was not accompanied by a rise in the inflation rate**. Many economists had estimated “full-employment” as being in the range of 6%. *Full-employment (or the natural rate of unemployment) is the lowest unemployment rate before inflation accelerates*. So they were convinced that the decline in the unemployment rate would cause a rise in the inflation rate. But this did not occur. Therefore, it seems that *the Phillips Curve was shifting to the left in this period (lower unemployment rates and lower inflation rates occurring simultaneously)*.

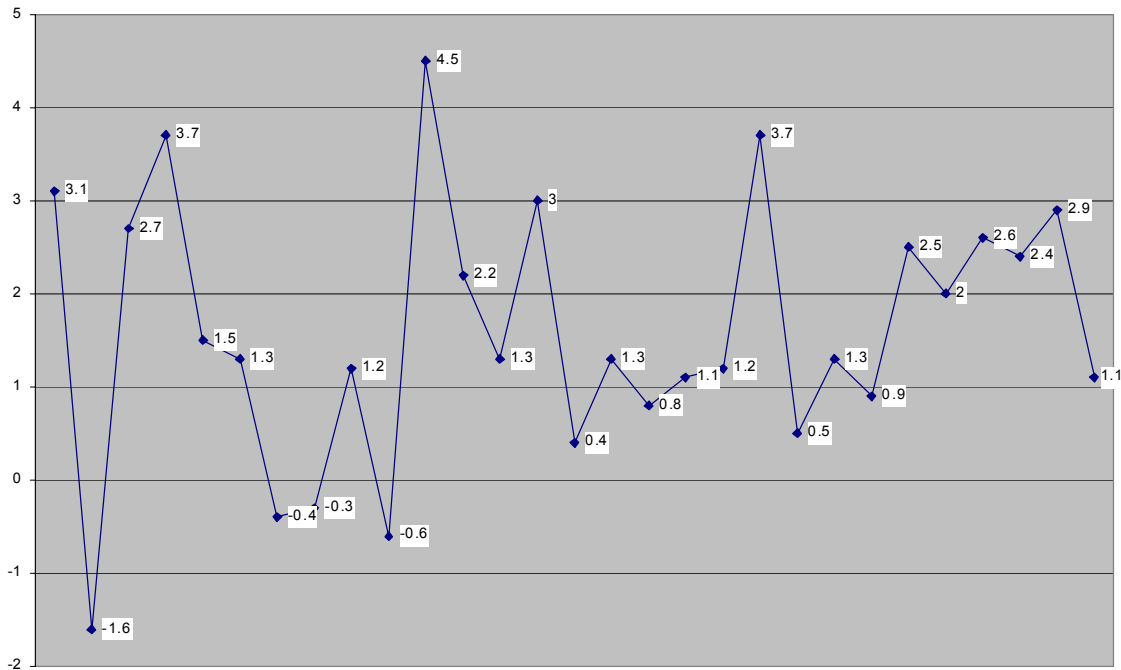
Percentage Change in the CPI 1980 to 2001



The reason unemployment could decrease so greatly without an increase in the inflation rate is that there was **a significant rise in the growth rate of productivity -- Real GDP per hour worked**. This rise in productivity allowed wages to rise without causing a large increase in the costs of production. Notice the chart below. In Chapter 2, the slowdown in productivity growth after 1973 was discussed. This is shown in the chart. While there are a few years of high productivity growth (usually as part of a recovery from a recession), in most years after 1973 productivity grew at a rate of 1.5% per year or less. But from 1995 to 2000, the productivity growth rate was consistently above 2% per year.

As was discussed in Chapter 2, one aspect of the productivity problem of the United States is that productivity grew slower than it did in many other countries. The table below the chart shows the productivity in other countries as a percent of that in the United States. You can see that these countries gained on the United States between 1973 and 1995. However, **the United States widened its lead in productivity growth (or caught up) very slightly between 1995 and 2001**.

Productivity Growth Rate 1973 - 2001



**Productivity (Percent of that of the United States)**

|                | 1973 | 1995 | 2001 |
|----------------|------|------|------|
| Japan          | 54   | 73   | 72   |
| West Germany   | 87   | 110  | 109  |
| France         | 82   | 113  | 106  |
| Italy          | 67   | 91   | 84   |
| United Kingdom | 66   | 83   | 82   |
| Canada         | 87   | 85   | 79   |
| Belgium        | 74   | 107  | 107  |
| Netherlands    | 103  | 108  | 101  |
| Norway         | 73   | 114  | 112  |
| Average OECD   | 70   | 87   | 84   |

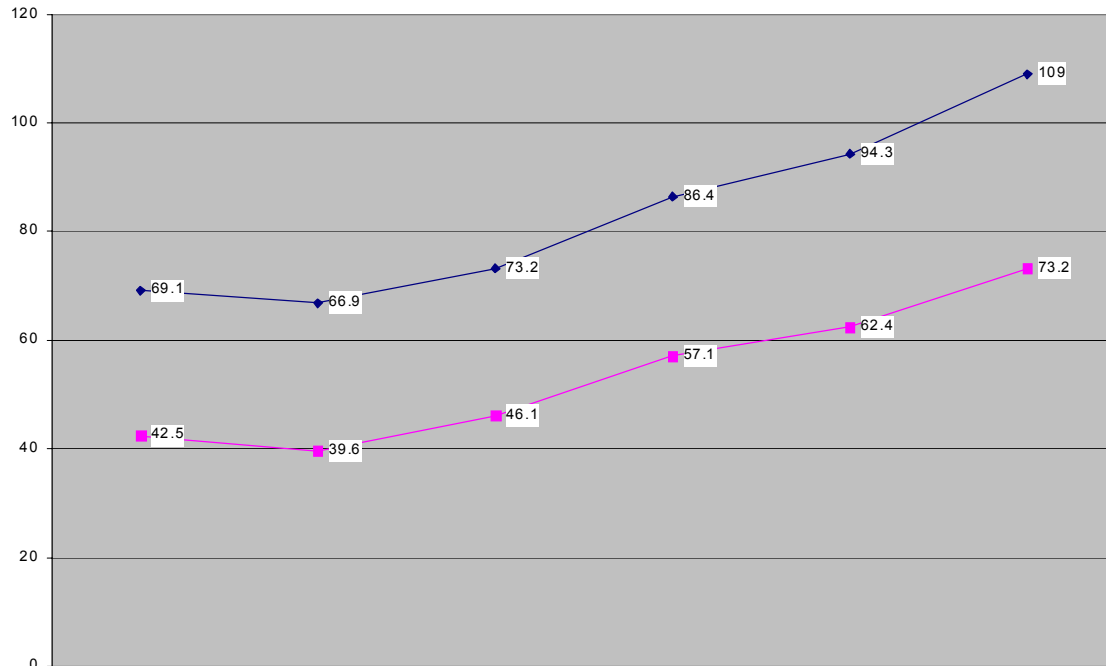
The period of the late 1990s saw **a great rise in overall wealth**. Much of this wealth increase resulted from **a huge increase in the value of stock market prices**. Between 1990 and May of 2001, the Dow Jones Index rose from 2,678.92 to 11,004.96. The broader Standard and Poor's Composite Index rose from 334.59 in 1990 to 1,485.46 in August of 2000. Therefore, **stock values more than quadrupled over this period**. If we measure wealth as *household net worth (household assets minus household debts)*, **then wealth rose at a rate of 5.9% per year from 1989 to 1999** (before falling substantially between 1999 and 2001). **But unlike the growth of income, this increase in wealth was not widely shared**. The top 1% of stockholders owned almost half of all

the stocks and the top 1% of wealth holders owned 38% of all of the wealth of any kind. (The top fifth of all wealth holders own 80% of all of the wealth.) Some 18% of all households had wealth that was equal to zero or less in 1998 (their debts exceeded their assets). The table below shows the average wealth by class (measured in thousands of 1998 dollars). **Notice how wealth declined during the recession from 1990 to 1992 and then grew significantly, especially for the very richest people.** The average wealth of the richest 1% of households increased by over \$1 million between 1989 and 1998 whereas the wealth of the middle 20% increased by only \$2,200 over the same period. For those in the middle, the main cause of the rise of their wealth in the 1990s involved ownership of homes. Home ownership rates rose significantly for all groups of Americans in the 1990s. And the value of homes rose significantly as well. (The numbers in the table are in thousands of dollars.)

|      | Top 1%   | Next 9% | Next 10% | Next 20% | Middle 20% | Bottom 40% | Average |
|------|----------|---------|----------|----------|------------|------------|---------|
| 1989 | \$9101.7 | \$897.9 | \$315.9  | \$150    | \$58.8     | \$4.1      | \$243.6 |
| 1992 | 8796.4   | 911.3   | 283.9    | 135.7    | 51.9       | 2.2        | 236.8   |
| 1998 | 10,203.7 | 1,012.7 | 344.9    | 161.3    | 61.0       | 1.1        | 270.3   |

One aspect of wealth in the 1990s that deserves attention is **the rise in household debt**. Between 1973 and 2001, mortgage debt as a percent of disposable income more than doubled while consumer debt as a percent of disposable income also rose. By 2001, the total debt of households exceeded disposable income for the first time. In the chart below, the red line represents mortgage debt and the blue line represents total debt. In this period, the percent of people filing for bankruptcy increased as did the percent of middle and low-income people having to devote 40% or more of their incomes to making debt payments.

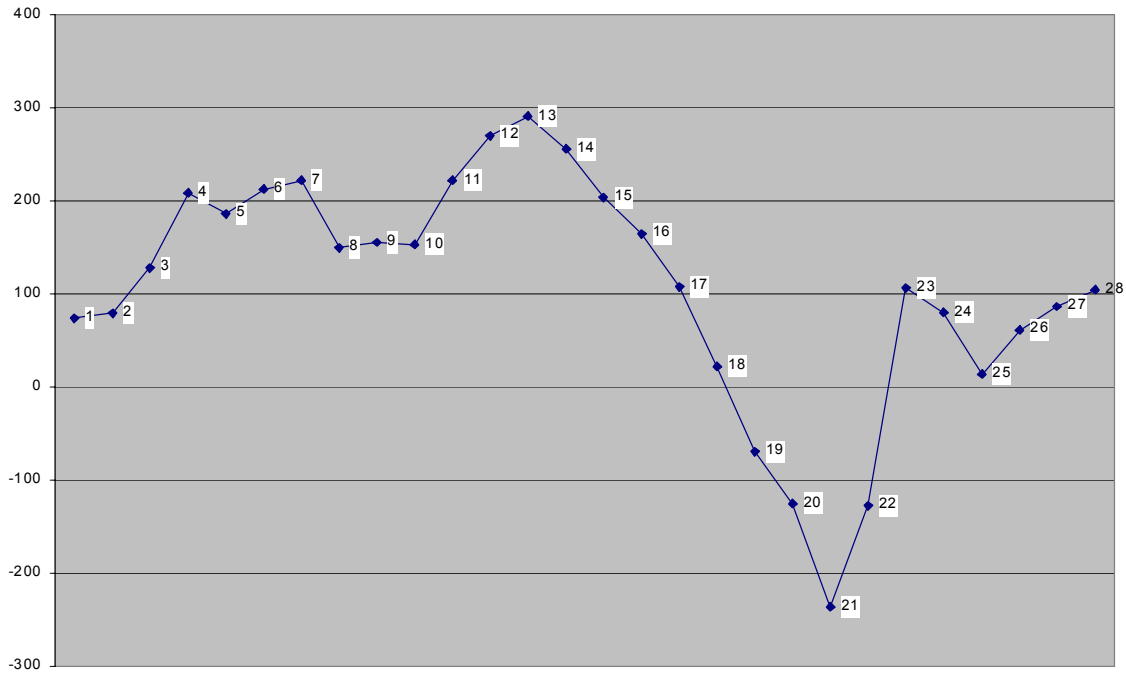
Debt as a Percent of Disposable Income 1973-2001



Consistent with the increase in Real GDP and incomes was **a decline in the extent of poverty**. The definition official poverty is discussed in Chapter 28 of Microeconomics on my web page. Between 1995 and 2000, the proportion of Americans who were officially poor dropped from 13.8% to 11.3%, after having risen from 12.8% in 1989. In terms of numbers of people, the number of people who were officially poor fell from 36,425,000 in 1995 to 31,054,000 in 2000, a decline of over 6 million people. The percent of blacks who were officially poor fell from 29.3% in 1995 to 22% in 2000, the percent of Hispanics who were officially poor fell from 30.3% to 21.2%, and the percent of children under age 18 who were officially poor fell from 20.8% to 16.1% over the same time period. This decline in the extent of poverty occurred totally because of improved job opportunities. Cash transfers to poor people actually declined in the 1990s.

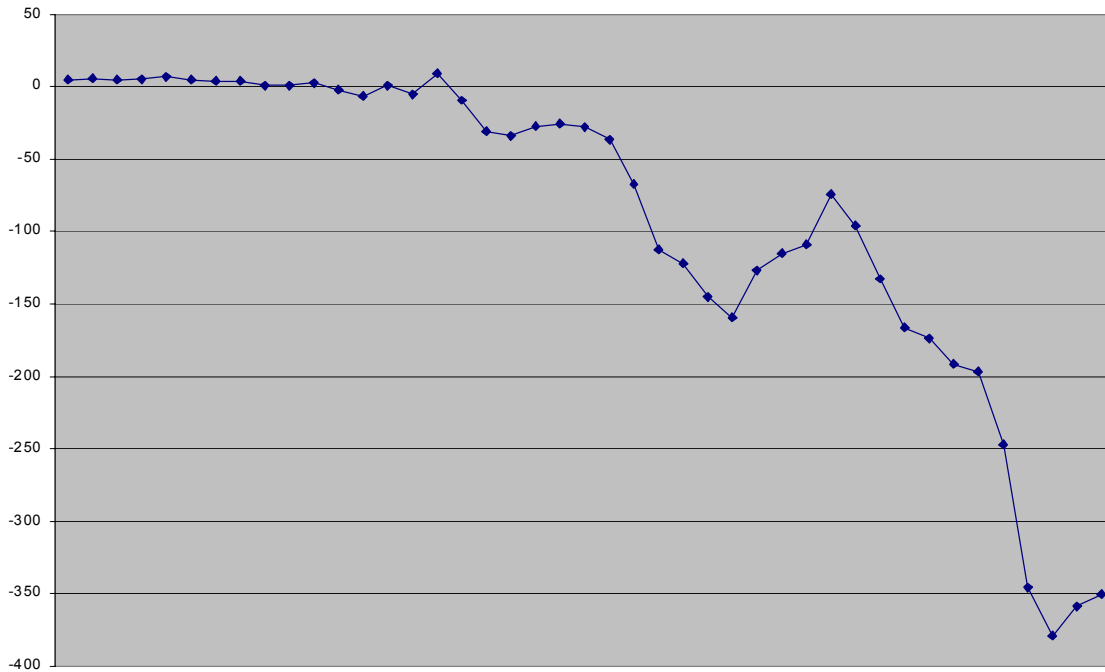
The most surprising development of the decade of the 1990s was **the elimination of the budget deficits of the federal government**. In fact, budget surpluses actually arose after 1998. These **budget surpluses** were a major topic of debate in the 2000 Presidential election. However, budget deficits re-appeared in 2001 and have continued since. We will discuss fiscal policy in the next section of this chapter. (In the graph below, plus indicates a budget deficit and minus indicates a budget surplus. Year 1 is 1980. The last year, 27, is 2007. The years from 2003 to 2007 are estimates made by OMB. )

Budget Deficits and Surpluses 1980 - 2007



In the “roaring 90s”, when so many things went well for the American economy, there were two issues that did not go well. One of these involved the *trade deficits – the fact that imports exceeded exports by a wide margin throughout this period.* These were discussed in the previous chapter. We saw there why these trade deficits might have occurred and why they might present a problem. (In the graph below, minus indicates a trade deficit. The 2002 deficit only covers through October of 2002.)

Trade Deficits 1980 - 2002



The other issue of the 1990s was the **increase in inequality**. The increased inequality of wealth has already been discussed. **But incomes also became more unequally distributed in the 1990s**, despite the fact that the benefits of growth seem to have been widely shared. While wages became more unequally distributed, most of the widening inequality of income came from other forms of income (interest, dividends, and so forth). The increase in inequality is discussed in Chapter 27 of Microeconomics on my site.

**Share of Family Income Going to Various Income Groups**

|                        | <b>1989</b> | <b>2000</b> |
|------------------------|-------------|-------------|
| Lowest 5 <sup>th</sup> | 4.6%        | 4.3%        |
| Second 5 <sup>th</sup> | 10.6        | 9.8         |
| Middle 5 <sup>th</sup> | 16.5        | 15.5        |
| Fourth 5 <sup>th</sup> | 23.7        | 22.8        |
| Top 5 <sup>th</sup>    | 44.6        | 47.4        |
| Top 5%                 | 17.9        | 20.8        |

As noted earlier, the ten-year period from March 1991 to March 2001 represents the longest expansion in American history. **Beginning in March of 2001, the American economy entered into a brief and mild recession.** By the end of 2001, the economy had begun to recover. **As of this writing (January, 2003), the American economy is still in recovery. However, the recovery has been slow.** While Real GDP has been rising slowly since the end of 2001, the unemployment rate is still increasing and is

presently 6%, a rise of two full percentage points since 2000. The driving force in the economic boom of 1995 to 2000 and again in the recession of 2001 has been **Nonresidential Private Domestic Investment Spending**. Especially important has been the change in investment in high-technology equipment and software. The following table shows the growth rate of Consumer Spending, Nonresidential Private Domestic Investment Spending, and Federal Government Spending. You can see that while Consumer Spending and Federal Government Spending grew at a reasonably steady rate, *Nonresidential Private Domestic Investment Spending (especially in Equipment and Software) was very volatile. Its rapid growth after 1995 sparked the great economic boom. Its decline in 2001 is the reason for the recession. And its slow recovery in 2002 is the reason that the economic recovery was so weak.* (The numbers in parentheses involve the growth rate of only the part of Nonresidential Private Domestic Investment Spending that went for high-technology equipment and software. The quarterly numbers for 2002 are on an annual basis.)

**Growth Rate of Each Category of Gross Domestic Product, 1995 – 2002**

|        | Consumer Spending | Nonresidential Private Domestic Investment | Government Spending |
|--------|-------------------|--|---------------------|
| 1995   | 3.0%              | 9.8% (11.5%)                               | 0.5%                |
| 1996   | 3.2               | 10.0 (11.0)                                | 1.1                 |
| 1997   | 3.6               | 12.2 (13.3)                                | 2.4                 |
| 1998   | 4.8               | 12.5 (14.6)                                | 1.9                 |
| 1999   | 4.9               | 8.1 (11.5)                                 | 3.9                 |
| 2000   | 4.4               | 7.8 ( 8.2)                                 | 2.7                 |
| 2001   | 2.5               | -5.2 (-6.4)                                | 3.7                 |
| 2002:1 | 3.1               | -5.8 (-2.7)                                | 5.6                 |
| 2002:2 | 1.8               | -2.4 ( 3.3)                                | 1.4                 |
| 2002:3 | 4.2               | -0.8 ( 6.7)                                | 2.9                 |

*In summary, the 1990s were a rather incredible decade economically. They began with a recession followed by a slow recovery. The economic boom got under way in 1995. From 1995 to 2000, there was an economic boom the likes of which had not been seen since the 1960s. Economic growth was rapid, spurred by a large growth in business investment spending (especially in the area of high-technology). Unemployment fell to rates not seen since the late 1960s. Yet the decade experienced no significant inflation. The lack of inflation was partly the result of a growth in productivity, reversing the trend of slow productivity growth that had gone on for 22 years. People incomes and wealth rose significantly, with much of the rise in wealth caused by a huge increase in the prices of stocks. But the prosperity was widely shared throughout the population. The disadvantaged benefited along with the rest of the population. Poverty declined. There were only a few downsides. One was the high and rising trade deficits. Another was the increase in inequality of both incomes and wealth. And a third was the fact that much of the growth of consumer spending was financed by people going deeper and deeper into debt (especially for homes).*

*The years 2001 and 2002 saw a mild and brief recession followed by a very slow recovery. The recession and slow recovery were mainly the result of a decline in nonresidential business investment spending, especially for high-technology equipment and software. As of the time of this writing (January 2003), there is still weakness in the American economy caused in part by the high consumer debt and in part by considerable uncertainty surrounding a possible war in the Middle East. With this background, let us examine the policies of the 1990s to ascertain how much of the good economic performance was the result of good economic policy making and how much was the result of other factors.*

### **Test Your Understanding**

This section was written in January of 2003. Go to the Internet. You will find links to many of the sites you need on my web page. Write a short essay explain what has happened to each of the variables considered in this section since January of 2003.

## **Fiscal Policy Since 1990**

*Fiscal policy involves government spending and tax policies.* The fiscal policy story of the 1990s focused on the budget deficits of the federal government, the excess of government spending over tax revenues. This subject has already been discussed in earlier chapters. The federal budget deficit reached an all-time record high in 1992 at \$290 billion. At that time, the Congressional Budget Office (CBO) predicted that the budget deficits would continue throughout the decade, reaching over \$400 billion by 2002. Yet, as we saw above and in Chapter 18, **the budget deficits declined dramatically and surprisingly. In the late 1990s, the federal government experienced budget surpluses.** In 2000, these surpluses were projected by CBO to continue for at least another ten years. Since the budget surpluses would be used in part to pay off the national debt, it was projected that the national debt would be eliminated by 2009. But we know that this did not happen. The budget deficits returned by 2001.

Reducing the federal government budget deficit was the central element of the economic strategy of the Clinton Administration (and also a major part of the economic strategy of the first Bush Administration). **This idea that reducing budget deficits would increase economic growth and lower unemployment rates would have to be called anti-Keynesian (the opposite of what Keynes had said about the budget deficits).** It is ironic that such an anti-Keynesian idea would be the centerpiece of the economic strategy of a Democratic president. *The idea was that a reduction in the federal government budget deficits would allow interest rates to fall. In addition, a lower federal government budget deficit would allow the Federal Reserve to increase the money supply without a worry about inflation. The increase in the money supply would also act to lower interest rates. Lower interest rates would increase business investment spending. Greater business investment spending would increase aggregate demand via the multiplier process. But greater business investment spending would also act to increase labor productivity (because the workers would have more and better capital goods to work with). This would increase aggregate supply and spur economic growth.*

*Part of the decline in the budget deficits resulted from the improving economy* (that is, to the lower unemployment rates via the automatic stabilizers). But as you calculated in Chapter 18, only part of the reduced budget deficits can be attributed to the improved economy. *A second cause of the decline in the federal government budget deficits was the rise in tax revenues.* In 1992, tax revenues of the federal government were equal to 17.5% of GDP. By 2000, they were equal to 20.6% of GDP. Some of this rise in tax revenues can be attributed to the increase in taxes, both under President Bush in 1990 and under President Clinton in 1993. These tax changes were discussed in Chapter 18. But the tax revenues as a percent of GDP rose even after 1995, a time during which there were no major changes in the tax law. **This rise in tax revenues was caused by an increase in the share of income earned by the highest income people, especially due to the large increase in capital gains as the stock market boomed.** *The third cause of the decline in the federal budget deficit was a reduction of the growth of the spending of the federal government.* Notice that the spending of the federal government did not decline. However, federal spending was lower than the amount that had been originally expected. The rate of growth of federal spending was reduced. **As a percent of GDP, federal government spending (other than interest payments) fell from 19% in 1991 to 15.9% in 2000.**

Many economists believe that this policy strategy contributed greatly to the prosperity of the 1990s. **The decline in the federal government budget deficits meant that the pool of savings was about 7% greater than it would have been if the budget deficits had stayed at the level of 1992 (because the government was borrowing that much less).** As one would expect, with more savings available, interest rates declined. And as we saw earlier, the prosperity from 1995 to 2000 was led overwhelmingly by the surge in business investment spending. And perhaps just as important, once people believed that President Clinton was serious about reducing the federal government budget deficit, their confidence in the American economy improved greatly. Insiders in that administration have said that **the increase in people's confidence may have been as important as any policy action in generating economic prosperity.**

As we have said, in 2001, the budget deficits of the federal government reappeared. There are three reasons for this. *First, the economy went into a recession causing tax revenues to fall (via the automatic stabilizers).* And the stock market declined greatly, reducing the capital gains on which people pay taxes. *Secondly, there was an increase in government spending following the events of September 11<sup>th</sup>.* We will discuss this below. It turns out that government spending also rose because of a large increase in health care costs. *And third, there was the tax cut initiated by President Bush.* This was discussed in Chapter 18. The current projections of OMB are that budget deficits will continue indefinitely, reaching \$300 billion to \$400 billion per year. The year 2002 (and perhaps 2003) was one of recessionary gap. A budget deficit in such a year might be a good thing because it can stimulate spending (and cause unemployment to be lower than it otherwise would be). But if the recessionary gap is eliminated in 2003 or 2004, budget deficits could be harmful. Through the **crowding-out** effect, they would act to reduce business investment spending and therefore to reduce economic growth. As of

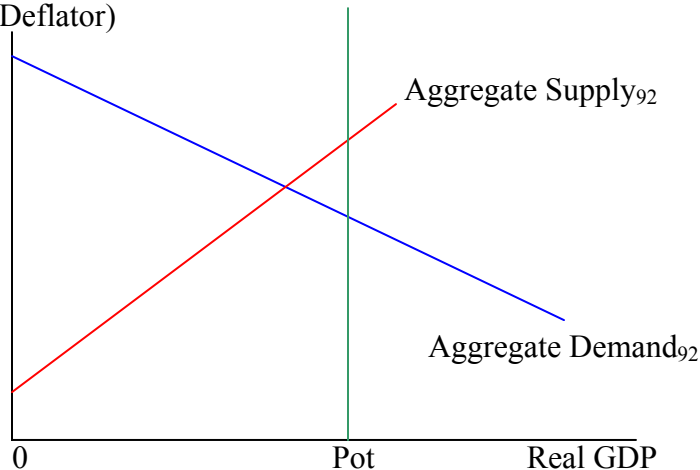
the time of this writing (January 2003), President Bush has proposed a further significant reduction in taxes (along with a more modest increase in government spending). The positive argument is that this could provide some stimulation to an economy that is experiencing a recessionary gap. The negative argument is that, once the recessionary gap is eliminated, the budget deficits of the federal government could slow the rate of economic growth of the country significantly, as they did before.

### Test Your Understanding

The aggregate demand curve, aggregate supply curve, and Potential Real GDP are shown in the graph below for 1992. Notice there is a recessionary gap. Now, show on the graph the results of the fiscal policy decisions described in the previous section. Consider the effects of the change in government spending, taxes, and business investment spending. What would be the expected results of the fiscal policy decisions made by the Clinton administration?

Then, show the changes from the fiscal policy decisions of President Bush in 2001 and then proposed in 2003. Consider the same effects. Again, what would be the expected results?

Aggregate Price Level  
(GDP Deflator)



### Monetary Policy Since 1990

*In February of 1993, Alan Greenspan announced that the Federal Reserve would begin to conduct its monetary policy by setting a target for the federal funds rate.* (Previously it had focused on the money supply—M2). Remember that *the federal funds rate is the interest rate charged by one commercial bank to another commercial bank.* Generally, the Federal Reserve would adjust its target interest rate according to what was happening in the economy. It would lower its target rate to stimulate the economy and raise it to contract the economy. It would change the money supply by whatever amount would be necessary to achieve the target interest rate. One important factor the Federal Reserve would consider was the inflation rate. **On average over the 1990s, when the inflation rate rose (fell) by one percentage point, the federal funds rate would be raised (lowered) by 1.39 percentage points.** Therefore, the real interest rate would rise (fall), causing aggregate demand to fall (rise).

**In February of 1994, the Federal Reserve also began the policy of announcing the decisions resulting from the meetings of the FOMC.** Prior to that time, people had to guess what the Federal Reserve had decided to do. This greater information for the public has probably increased the effectiveness of monetary policy decisions.

Between July of 1990 and July of 1992, the Federal Reserve lowered the federal funds rate so that the **real federal funds rate (the federal funds rate minus the inflation rate)** fell from approximately 3% to zero. The real federal funds rate was then held at zero for two years. This is clearly **an expansionary monetary policy**. Such a policy surely contributed to the economic recovery of that period.

By early 1994, the Federal Reserve came to believe that the recessionary gap had been eliminated. It then began to worry about inflation. As a result, the Federal Reserve began raising the federal funds rate. The goal has been called a **“soft landing”** --- eliminating any pressures for inflation without causing a recession. The Federal Reserve raised the federal funds rate seven times in 1994, so that the real federal funds rate rose from 0 to about 3%. As we know, the recession did not occur. Unemployment continued to fall. And inflation remained at about the same rate. Recent books have described the debate among the seven Governors of the Federal Reserve. It seems that several of the members were greatly concerned that inflation would be occurring. These members wanted a more contractionary policy. But Chair Alan Greenspan was more cautious and perhaps more concerned about possible increases in unemployment. His more cautious view prevailed.

From January of 1996 until June of 1999, the federal funds rate was unchanged. By its own admission, the Federal Reserve was surprised by the falling unemployment occurring with no rise in the rate of inflation. Economists at that time believed that once the unemployment rate fell below 6% (for some, this was 5.5%), inflation rates would rise. But inflation rates did not rise. In retrospect, several factors acted to hold down inflation. **One such factor was a decline in health insurance costs.** These costs actually declined between 1995 and 1998. Declining costs of production cause Aggregate Supply to increase. Increasing aggregate supply acts to lower prices. **Second, other costs were reduced as well in this period.** For example employer contributions to pension plans decreased because the rising stock market allowed the employers to be able to put less money into the pension funds while still keeping the value of the pension funds at the level needed to make all retirement payments. (The pension fund money is often invested in stocks.) The decline in fringe benefits was not offset by a rise in wages. Workers seemed to be most concerned with job security and were willing to forego sizable wage increases for enhanced job security. **Third, the American dollar appreciated from 1995 to 1998.** This will be discussed below. The appreciated dollar lowered the prices of imported products, products that are used to produce goods in the United States. As costs of production fell, aggregate supply increased. The appreciation of the dollar also increased imports and reduced exports, thereby reducing aggregate demand (total spending). Therefore, the Federal Reserve did not have to decrease the money supply to accomplish the same reduction in aggregate demand. **Fourth, oil prices fell to almost**

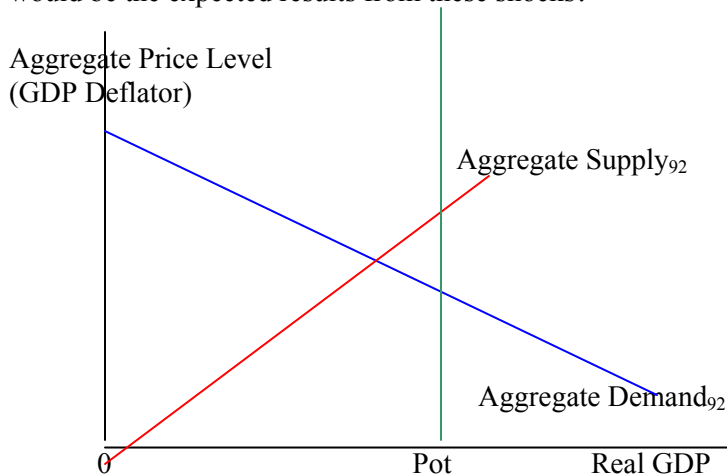
*half of their previous level in this period.* Falling oil prices act to lower costs of production and therefore to increase aggregate supply. *Fifth, as noted earlier, productivity began to grow at a more rapid rate beginning in 1995.* Largely this was the result of the large rise in investment spending, especially in computers and related products. Again, this acted to lower costs of production and therefore to increase aggregate supply. Do you remember how the supply shocks reduced aggregate supply and caused the stagflation of the 1970s? If so, then the period from 1996 to 1999 was one of **“beneficial supply shocks”** --- *factors that lowered costs of production and increased aggregate supply, thereby increasing Real GDP (production), lowering unemployment, and lowering prices.* It has been estimated that, had these beneficial shocks not occurred, inflation rates would have been 5% or more by the end of the 1990s.

By 1999, the Fed’s concern with inflation became strong enough that it decided to raise the federal funds rate as a way of reducing aggregate demand (total spending). By May 2000, the federal funds rate had been raised a bit less than 2 percentage points. The Fed became especially concerned as they saw **energy prices and health care costs rise significantly in 1999.** As we know from our discussion of monetary policy, changes in policy have a time lag of 6 to 12 months. So the delayed effect of raising the federal funds rate did not have much of an effect until 2000. This delayed effect probably contributed to the economic recession that began in March of 2001. Since that time, the Federal Reserve has moved into a very expansionary mode. The federal funds rate was consistently lowered throughout 2001 and 2002. Overall interest rates were lower in this period than at any time since the 1960s. As of this writing (January 2003), the federal funds rate is 1.3% --- meaning that the real federal funds rate is negative. And the discount rate is 0.75%. Because of the time lags, these declines in interest rates probably helped spur the recovery that began in 2002 and should contribute to a recovery in 2003 (unless they are offset by other negative factors).

**Test Your Understanding**

The aggregate demand curve, aggregate supply curve, and Potential Real GDP are shown in the graph below for 1992. Notice there is a recessionary gap. Now, show on the graph the results of the monetary policy decisions described in the previous section. What would be the expected results of the monetary policy decisions made by the Federal Reserve?

Then, show the changes from the beneficial shocks described in the section. Again, what would be the expected results from these shocks?



## International Economic Policy Since 1990

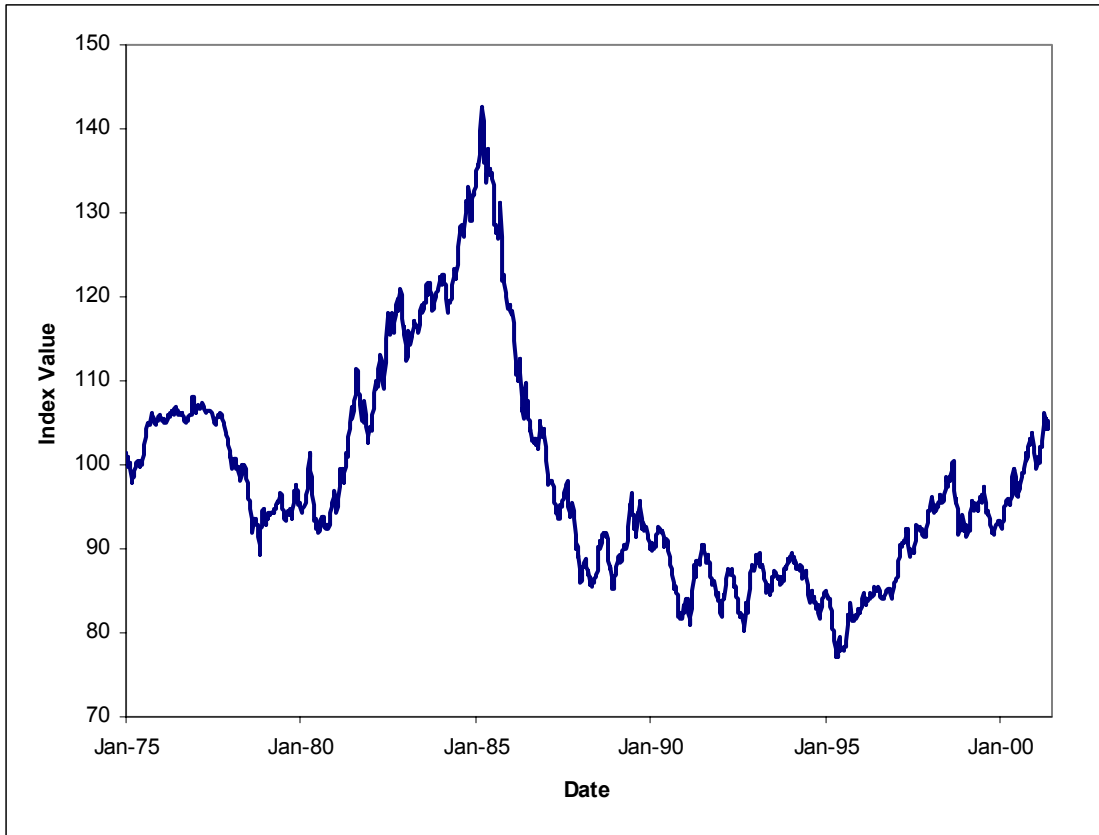
President Clinton and the two Presidents Bush have had considerable agreement on international trade policy. **All three Presidents favored open trade and argued against restrictions on trade.** The globalization of the American economy was discussed in the previous chapter and will be further discussed in the next chapter. President Bush negotiated and President Clinton signed the **North American Free Trade Agreement (NAFTA)**. President Clinton even defied a majority of his own Democratic Party by using his influence to get this agreement passed through Congress. This agreement lowered tariffs considerably between the three North American countries, with these tariffs to be eventually eliminated altogether. Since the United States and Canada had already concluded a free trade agreement, the purpose of NAFTA was to open the Mexican market to sales of American and Canadian goods and to greater American and Canadian foreign direct investment. NAFTA is discussed more completely in the Economy of Mexico Chapter 7 (Mexican Trade) on my web page. **Since the passage of NAFTA in 1993, trade between the United States and Mexico has grown tremendously.** President George W. Bush is currently negotiating a **Free Trade Area of the Americas (FTAA)**. Should this come to pass, it would eliminate tariffs between all countries of North America, Central America, and South America. The negotiation is the result of a pledge made in 1994 by the leaders of 34 American countries to create a FTAA by 2005. Several other such agreements are in the process of being worked out. In 1994, the 18 nations of the *Asia-Pacific Economic Cooperation Group (APEC)* pledged to achieve a free trade and free investment region by the year 2020 (2010 for the industrialized countries within the group). Since 1995, there has been a *New Transatlantic Agenda* to expand trade between the United States and the European Union. In 1997, President Clinton began his *Economic Growth and Opportunity in Africa* initiative. This was designed to increase American trade with Africa and American investment into Africa. In 2000, the United States completed negotiations for a free trade area with *Jordan* and initiated negotiations for one with *Singapore* and another with *Chile*. Finally, in 1999, an agreement was reached to reduce tariffs and non-tariff barriers in order to create what is called a “*permanent normal trade relationship*” with *China*. The United States then supported China’s entrance into the World Trade Organization. There have been occasional protectionist policies. For example, in 2001, the Bush administration bowed to political pressure and agreed to impose tariffs on foreign steel. **But with these few exceptions, the trade policy of the United States has had a single purpose --- to open trade between all countries of the world.** As we saw in the previous chapter, in the 1990s, world trade expanded greatly. And this expansion of world trade contributed to the prosperity that was experienced by the United States.

The 1990s was a decade filled with several major international financial crises. These will be discussed in the next chapter. In this chapter, we will mention just one aspect of American international economic policy --- *the strong dollar policy*. The strong dollar was seen as one means of allowing the Federal Reserve to maintain the low interest rates

necessary to spur business investment spending. **This means that, if the dollar had been weak, the Federal Reserve might have seen a need to raise interest rates as a way to appreciate it.** It might have done so because a weak dollar would increase exports and reduce imports, thereby increasing aggregate demand (total spending) in the United States and enhancing inflationary pressures. *Keeping the dollar strong would reduce exports by making them more expensive. It would increase imports by making them cheaper. Some imported products are used in production; cheaper imports would reduce costs of production. The combination of reduced export demand and lower costs of production would act to keep inflation low. Low inflation would reduce any need for the Federal Reserve to raise interest rates.*

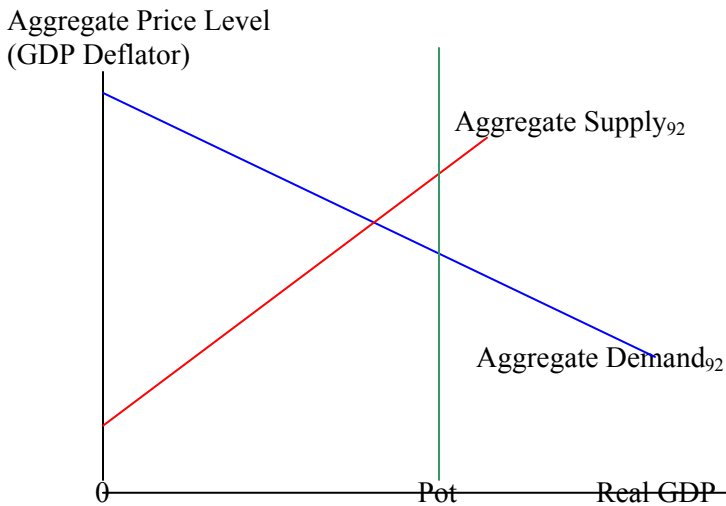
The low interest rates in the United States, by themselves, should have caused the American dollar to depreciate. But there were forces in the other direction that acted to make the dollar strong. **First, because of the strength of the American economy and the low rate of American inflation, foreigners found the United States a very good place in which to invest their money (both portfolio and direct investment).** To invest in the United States, they needed American dollars. Their demand for American dollar acted to appreciate the dollar. **Second, the Clinton administration spoke frequently about a stronger dollar. This created an expectation that the dollar would indeed become stronger.** As foreign people believed the dollar would become stronger, they chose to buy it. Their buying of the American dollar did indeed make it stronger. Finally, remember that since the 1970s, the world has been on a *“managed float”*. This means that foreign exchange rates are determined basically by demand and supply. However, central banks intervene in foreign exchange markets at various times in order to create the exchange rates that they desire. **So, the Federal Reserve intervened in the foreign exchange markets in order to strengthen (appreciate) the dollar.** To do so, the Federal Reserve bought dollars (sold foreign exchange) in the foreign exchange markets. (By agreement, the central banks of Germany, Japan, and the other G-7 countries did the same thing in their own markets.)

The chart below shows the value of the American dollar against other currencies from 1975 to 2000. Notice that the dollar basically depreciated against the other currencies between 1985 and 1995. But from 1995 to 2000, the dollar appreciated. This was the result of a purposeful policy of the Clinton administration.



**Test Your Understanding**

The aggregate demand curve, aggregate supply curve, and Potential Real GDP are shown in the graph below for 1992. Notice there is a recessionary gap. Now, show on the graph the results of the strong dollar policy described in the previous section. What would be the expected results of the strong dollar policy?



## Is There a New Macroeconomy?

As mentioned above, the source of the great expansion of the period 1995 to 2000 was the increase in business investment spending in computers and computer-related technology. It is amazing to remember that as late as the middle of the 1990s, very few people used the Internet or had a cell phone. Today, more than 60 million computers are connected to the Internet. Today's computers have at least 66,000 times the processing power of those that existed in 1975. This enormous change has led some people to argue that the ***“computer revolution”*** will change the way by which the macroeconomy will operate in the future. They compare the “computer revolution” of the 1990s to the Industrial Revolution of the 19<sup>th</sup> century. In the late 1990s, some people even went so far as to predict that the new technologies would end the business cycle as we have known it. They saw a period of sustained prosperity lasting indefinitely. We know that this prediction did not come true because the American economy entered a recession in 2001.

There are several ways by which the “computer revolution” might change the way the macroeconomy operates. ***One is that the “computer revolution” has helped increase the rate of increase of labor productivity.*** As we saw earlier, after more than two decades of stagnation, **labor productivity accelerated from 1995 to 2000.** Whether the acceleration of productivity growth was a transitory phenomenon of the end of the 1990s or a permanent change remains to be seen at this point. But there is good reason to believe that it could be permanent. ***A second important change resulting in part from the “computer revolution” has been a decline in the natural rate of unemployment (or full employment).*** Once thought to be in the range of 6% or more, the natural rate of unemployment fell to 4% or 4 1/2% by the end of the 1990s. The argument here is that the natural rate of unemployment (“full employment”) fell because of the increase in the productivity of workers, caused in part by the “computer revolution”. If unemployment is low, workers may ask for greater wages increases. If productivity is not rising, those wage increases will increase costs of production and force employers to raise prices (inflation). **But if productivity is rising rapidly, those wages can rise without raising costs of production and therefore without causing inflation.** Remember that *the natural rate of unemployment is the lowest rate of unemployment before inflation accelerates.* **With rapid productivity growth, unemployment can be much lower without the rise in wages causing inflation to accelerate.** ***A third important change involves better inventory control as a result of the computer technology.*** Remember that a decrease in aggregate demand (total spending) causes inventories to rise. With rising inventories, order from manufacturers fall. With reduced orders, manufacturers reduce production and lay off workers (a recession). **Because of computer technology, companies are able to hold fewer inventories than they formerly needed.** For example, compared to the 1970s, durable goods manufacturers hold 2/3 as much in inventories as they used to hold. **With less held in inventories, there is less need to reduce orders and therefore to reduce production.** Recessions could be shorter and milder. ***A fourth important change is that the new computer technologies allow***

*companies to produce all over the world and to ship products all over the world (globalization).* They also allow buyers to buy from companies anywhere in the world. This has greatly enhanced competition among sellers. **The enhanced competition makes it much harder for companies to raise their prices.** In the 1990s, the Federal Reserve could expand the money supply to lower interest rates without generating inflation in part because of this enhanced competition between sellers. *In summary, the “computer revolution” could change the way the macroeconomy operates by (1) increasing labor productivity, lowering the natural rate of unemployment (“full employment), reducing inventories, and thereby reducing the severity of business cycles, and by increasing competition between sellers (and thereby keeping prices from rising).*

While some economists see the “computer revolution” as having enormous macroeconomic effects, others are more pessimistic. For example, economist Robert Gordon argues that the growth in productivity in the 1990s affected only the 12% of the economy that produces computers, telecommunications equipment, and other durable goods. He argues that the other 88% of the economy was largely unaffected. This is surprising in that the “unaffected” part of the economy uses more than  $\frac{3}{4}$  of all of the computers. If his argument is correct, their use of computers has not increased their productivity at all.

### **Test Your Understanding**

While this section has provided some arguments that the “computer revolution” will cause macroeconomic life to be different, there are many economists who believe that few of the important aspects of our macroeconomic life will be affected. See if you can name some of their arguments. That is, name three aspects of macroeconomic behavior that have been discussed in this course that will not be affected by the computer revolution. Then, explain why these might not be affected by it.

## **The Economic Consequences of Terrorism**

The events of September 11, 2001 profoundly affected the United States. As of the time of this writing (January 2003), the United States appears poised to go to war with Iraq. Here, we can discuss the effects on the American economy of the terrorist acts and the possible effects of a war. Let us mention several possible such effects.

The most immediate economic effect of the events of September 11 involved the **destruction**. In dollars, this amounted to more than \$16 billion in property damage. Rescue and cleanup costs amounted to another \$11 billion. Close to 200,000 jobs were destroyed, at least temporarily.

A second effect following the events of September 11 was **the decline in confidence and the increase in uncertainty**. As we have seen in previous chapters, a decline in confidence reduces consumer spending. An increase in uncertainty reduces business investment spending. The decline in confidence also caused stock prices to fall. But this decline proved transitory, as confidence seems to have improved within a few months of September 11, 2001. Real GDP fell in the 3<sup>rd</sup> quarter of 2001 but then rallied in the 4<sup>th</sup>

quarter. The Federal Reserve injected large amounts of money into the system and otherwise acted to protect the financial system that had been damaged in New York City. Within a short time, the financial system was fully functioning.

A few industries were particularly hard hit by the decline in confidence and by the destruction. One was the **airline industry** --- both airlines and aircraft manufacturers. Another was the **insurance industry**. And a third involved **tourism-related industries** -- including hotels, restaurants, travel agencies, and so forth.

A third effect of the events of September 11, 2001 has been **a large increase in government spending**. On September 14<sup>th</sup>, Congress approved a \$40 billion emergency spending package. A few days later, Congress authorized \$5 billion in grants and another \$10 billion in loan guarantees to the airline industry. Later, President Bush asked Congress for an additional \$48 billion of spending for defense and an additional \$38 billion for homeland security. A new bureaucracy was created --- the Department of Homeland Security. The result of this increase in government spending, as we have noted earlier, has been **an increase in budget deficits** and a projection of future budget deficits for the next several years. These budget deficits could act to raise interest rates and therefore reduce business investment spending. The lower business investment spending could reduce economic growth rates. (Because it takes resources away from other goods, private spending on security, about \$40 billion per year in the United States, could have the same *crowding-out* effect.)

A fourth effect has involved **great losses for the insurance industry**. These losses were estimated at between \$30 billion and \$58 billion in 2001, the highest amount of insured losses ever recorded for one year. The insurance companies responded by raising their premiums and by denying coverage. One estimate is that rates have been raised by about 30% on average. The highest rate increases have gone to companies in transportation, construction, tourism, and energy production. *These higher insurance premiums are costs of production. As with any increase in a cost of production, these act to reduce production and to raise prices.* Reduced insurance coverage, especially in these industries, increases the uncertainty of investment decisions. As we know, increased uncertainty acts to reduce business investment spending and therefore to lower economic growth rates.

A fifth effect of the events of September 11<sup>th</sup> has involved increased security provisions at America's borders, especially the border with Canada. *The new security provisions may affect the cost of transporting goods between countries*, especially through longer delivery times. As we noted in the previous chapter, transnational companies often produce in many different countries. They rely on parts produced in one country being available for use in another country at the proper time. And, as noted in the last section of this chapter, such production has allowed companies to reduce the amount of inventories they need. Reduced inventories lower their production costs and also possibly reduce the extent of any recessions that occur. **The new security provisions threaten to reduce trade between nations by raising the costs of shipping goods between countries.** Even if the costs imposed by the new security provisions are small, it has been estimated that they could cause international trade to decline by perhaps 2% to 3%.

The war with Iraq has not begun as of the time of this writing. So we can only speculate about the possible economic effects. President Bush's economic adviser estimated **the cost of a war** with Iraq at \$100 billion to \$200 billion --- 1% to 2% of one year's GDP. Other estimates have a smaller cost --- about \$50 billion. The estimates, of course, make different assumptions about the nature of the war. Besides the war, there will be **costs of occupation**. Estimates of these costs range from \$10 billion per year to as high as \$50 billion per year --- spread over several years into the future (estimated to be at least five years and possibly twenty years). In addition, the **cost of rebuilding Iraq** could come to \$20 billion (in total) with another \$1 billion to as much as \$10 billion for humanitarian assistance. So the war could be somewhat costly in just the narrow economic sense. If these costs cause the budget deficits to increase, they will, as we have seen, cause interest rates to be higher. Americans will pay these costs in the form of slower economic growth rates (due to reduced business investment spending) or in the form of reduced buying of homes and other items that people typically borrow to pay for.

The other big effect of a war with Iraq is **the risk to the oil market**. If there is a major destruction of oil facilities, or if OPEC sides with Iraq and cuts off oil production, the result could be a large rise in oil prices. As we have seen from the events of the 1970s, the rise in oil prices could cause both inflation and recession (stagflation). One estimate states the following. A reduction in oil supplies of one million barrels per day would cause American gasoline prices to be \$1.76. (A barrel is 42 gallons.) A reduction in oil supplies of four and one-half million barrels per day would cause gasoline prices to be \$2.78. And a reduction in oil supplies of seven and a half million barrels per day would cause gasoline prices to be \$4.84.

There is another side to the oil issue. After the war, it has been estimated that Iraqi oil production could be increased from the 3 million barrels per day now being produced to 6 million barrels per day in ten years. This would require \$30 billion to \$50 billion of investment --- most of it paid for by American and European oil producers. This increase in oil supplies would act to lower oil prices by about \$1 per barrel.

Finally, the war will have effects of peoples' **expectations**. If the war is short, these effects will not last long. But if the war spreads throughout the Middle East, the pessimistic expectations are likely to precipitate a major recession. Economist Edward Gramlich estimates that if the war is short and the outcome is favorable, the economic cost would be about \$120 billion in total spread over the next ten years. This cost is not high. But if the war is long and does not go as planned, the costs could be as high as \$1.6 trillion. Most of this high cost would result from the higher oil prices and from the recession that could result. So there are economic risks of such a war.

## Summary and Conclusions

The period we have been discussing begins and ends with recessionary gaps. The recession of 1990 and the recession of 2001 had some different causes. But one cause that was similar to both recessions was the threat of war in the Middle East. The

recession of 1990 and the recession of 2001 were both short. But the recovery from both recessions was very slow. At the time of this writing (January 2003), the United States was still experiencing a recessionary gap with an unemployment rate of 6% and virtually no inflation at all.

In between these two periods of recessionary gap was a period of prolonged prosperity. For ten years (March 1991 to March 2001), the country experienced the longest expansion in its history. Productivity grew at rates not seen since before 1973 --- a reflection of the technology boom and the “computer revolution”. Incomes grew substantially. The benefits of this income growth were widely shared among the American population. Unemployment rates and interest rates fell to levels not seen since the end of the 1960s. Inflation was very low. The budget deficits that had existed for so many years disappeared by 1998 (only to reappear in 2001). Only the rising trade deficits, the growth in consumer debt, and the increase in inequality mar an otherwise stunning economic performance. And as we saw in Chapter 26, these trade deficits can be interpreted as the result of American strength, not as a result of American lack of competitiveness.

In this chapter, we tried to assess the reasons for the success of the second half of the 1990s. How much credit do the policy makers deserve? The President and the Congress deserve credit for policies that held down the growth of government spending and for other policies that helped eliminate the budget deficit. They also deserve credit for policies that expanded international trade and for the “strong dollar policy” that helped hold down inflation. And perhaps they deserve credit for government policies that helped foster the information technology boom. The Federal Reserve deserves credit for its expansionary monetary policies that kept interest rates very low and for its ability to engineer a “soft landing”. The rest of the explanation for the economic prosperity has nothing to do with government policies. In this period, there were a whole series of “beneficial shocks” that contributed greatly to the outstanding economic performance: the booming stock market (that aided greatly in eliminating the budget deficits by raising tax revenues and that enhanced consumer spending), low oil prices, low growth of health care costs, the great advances in computer technology, and so forth. Some of these “beneficial shocks” are unlikely to be repeated any time soon.

As noted above, at the present time, the American economy is in a recessionary gap. Recovery has been slow. And there is a threat of war. This chapter tried to make some assessments of the economic harm done to the United States (and indeed to the world economy) by terrorism and to make some “guesses” about the effects of a possible war in the Middle East. Whether the American economy can rebound to experience a great economic performance anytime soon is impossible to determine. But there is still much to learn from the decisions that were made in the 1990s by the President, the Congress, and the Federal Reserve.

This chapter has focused exclusively on the experience of the United States since 1990. But there were extremely important events occurring in the world economy as well. We will turn to these events in Chapter 28. There we will discuss the enormous increase in **economic integration** that occurred. We will also analyze the series of

**international financial crises** that occurred --- in Europe, in Mexico, in East Asia, and in Russia. Finally, in Chapter 28, we will revisit the globalization debate one more time.

**Practice Quiz for Chapter 28**

1. Which of the following describes the period from 1990 to 1991?  
a. recession   b. expansion   c. inflation   d. budget surpluses
2. Which of the following does **NOT** describe the period from 1992 to 2000?  
a. expansion   b. falling unemployment rates   c. rising inflation rates   d. falling budget deficits
3. Which of the following describes the period from 1995 to 2000?  
a. falling budget deficits   b. falling trade deficits   c. reduced inequality   d. all of the above
4. Which of the following describes the **fiscal policies** of the 1990s?  
a. a slowing of the growth of government spending   c. a decrease in marginal tax rates  
b. increases government spending on defense   d. an increase in budget deficits
5. Which of the following describes the **monetary policies** of the 1990s?  
a. a focus on the federal funds rate instead of the money supply  
b. expansionary monetary policy during times of recessionary gap  
c. a soft landing  
d. all of the above
6. From 1995 to 2000, **labor productivity** rose  
a. about as fast as previously   c. slower than it had done since 1973  
b. faster than it had done since 1973   d. slower than it rose in other countries
7. Which of the following was a **beneficial supply shock** in the 1990s?  
a. rising labor productivity   b. falling costs of health care   c. falling oil prices   d. all of the above
8. From 1995 to 2000, the **American dollar** was  
a. appreciated   b. depreciated   c. held constant
9. Those who argue that the “**computer revolution**” has changed the macroeconomy make which of the following arguments?  
a. the “computer revolution” acts to increase labor costs by raising labor productivity  
b. the “computer revolution” lowers the natural rate of unemployment (full employment)  
c. the “computer revolution” increases inventories and therefore makes recessions longer  
d. all of the above
10. According to the chapter, the events of September 11, 2001  
a. caused large losses for the insurance industry and subsequently higher insurance premiums  
b. necessitated a large increase in government spending and possible budget deficits  
c. may act to reduce international trade by raising the costs of shipping goods  
d. all of the above