

# Chapter 3

## Economic and Fiscal Variables Influencing Public Sector Retirement Systems

This section of the report provides a backdrop on the economic and fiscal developments that pummeled both the national and state economies in the first few years of this decade. These developments had a direct impact on public sector retirement systems and led to a sharp decline in their financial health. The section reviews some of the broader national economic trends (sputtering gross domestic product growth; rising unemployment levels; sagging consumer confidence levels; escalating oil prices; drooping interest rates; and faltering equity markets) and explores how these economic developments had huge negative impacts on state finances (plunging revenue levels; increasing unemployment rates and rising budget shortfalls). Cumulatively, these negative features created significant financial problems for public sector retirement systems.

After a decade of sustained growth, unsurpassed in the economic history of the country, March 1991 to March 2001, the U.S. economy began grinding to a halt in mid-2001. Then, the tragic events of September 11, 2001, pushed the already tottering economy into recession. While technically the economy emerged from this recession after two quarters, the pace at which the economy generated jobs during its recovery phase, even three years after the “official” end of the recession, continues to be extremely sluggish.

During the aforementioned decade of expansion, the U.S. economy was characterized by an unparalleled level of prosperity that facilitated soaring personal incomes and corporate profits; dwindling unemployment, low inflation and rapid economic growth; rising revenue flows leading to budget surpluses at the federal, state and local levels; and a booming stock market that elevated the investment portfolios of a number of American households to remarkable levels. The national and individual state economies grew considerably faster than most forecasters predicted, resulting in a bountiful fiscal environment at every level of government. At the state level, revenue flew into state coffers from growing capital gain taxes, income and other taxes boosted by taxpayers’ healthy stock market gains, base salaries and overtime checks. Sales tax inflows grew steadily too, as consumers pared back on savings and consumed at ever increasing levels. Furthermore, state spending pressures were mild; for instance, Medicaid enrollments declined

while the federal decision to switch welfare funding from an entitlement to a block grant generated cash inflows for states. The \$246 billion state tobacco settlement was another factor in pushing state budgets toward healthy surpluses. Consequently, states were able to cut taxes, hike spending in such areas as healthcare and education, and boost reserve or rainy day funds.

Unfortunately, the economic boom years of the 1990s ended with the 2001 recession and federal, state and local governments continue to wrestle with the lingering effects of this latest economic recession. Even though the economic outlook at both the federal and state levels currently remains more optimistic, the grim economic news that percolated throughout the country between mid-2001 and early 2004 seriously challenged policymakers at every level. The following sections contrast several pieces of key economic information to highlight the peaks and valleys demonstrated in the U.S. economy during the 1990s and the early part of this decade. These economic highs and lows etched an indelible mark on the finances of the nation’s public retirement systems.

### **GDP Growth**

Changes in the growth of our gross domestic product (GDP), the total output of goods and services produced in the country, remain a critical ingredient in assessing economic trends. On November 26, 2001, the Business Cycle Dating Committee of the National Bureau of Economic Research (NBER),

the arbiter of key economic events in the nation, announced that business activity in the U.S. economy peaked in March 2001. While a peak marks the end of an expansion and the beginning of a recession, the NBER defines a recession as a “significant decline in activity spread across the economy, lasting more than a few months, visible in industrial production, employment, real income, and wholesale-retail trade.”<sup>1</sup> As indicated earlier, the business peak reached by the economy in March 2001 signaled the end of the decade-long economic expansion, the longest in the nation’s history. Table 6 provides a glimpse into the nation’s GDP with a breakdown of the annual percent change between 1993 and 2003 alongside details on other related economic indicators (personal consumption expenditures; gross private domestic investment; net exports of goods and services; and government consumption expenditures and gross investment).

As indicated in Table 6, year-to-year GDP growth between 1993 and 2003 remained in positive territory, a strong testament to the resiliency of the U.S. economy during some very challenging times in this period. In four of the years, GDP growth was at least 4 percent, with the high of 4.5 percent achieved in both 1997 and 1999. In 2001, the year of the recession, growth slumped to a scant 0.5 percent and then bounced back to 2.2 percent and 3.1 percent, respectively, in 2002 and 2003. Personal consumption expenditures, after steadily rising in the 1990s, peaked at 5.1 percent in 1999 and then tailed off in the next four years. Gross private domestic investment remained vibrant in the 1990s, reaching a high of 12.4 percent in 1997, before declining to -8.4 percent in 2001, and then -1.2 percent in 2002. In terms of net exports and imports (goods and services), resounding double-digit growth levels were accomplished several times

<b>Percent Change From Preceding Period in Real GDP and Other Key Economic Indicators 1993 to 2003</b>											
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
<b>Gross Domestic Product (GDP)</b>	2.7	4.0	2.5	3.7	4.5	4.2	4.5	3.7	0.5	2.2	3.1
Personal Consumption Expenditures	3.3	3.7	2.7	3.4	3.8	5.0	5.1	4.7	2.5	3.4	3.1
Durable Goods	7.8	8.4	4.4	7.8	8.6	11.3	11.7	7.3	4.1	6.5	7.4
Nondurable Goods	2.7	3.5	2.2	2.6	2.7	4.0	4.6	3.8	1.9	3.0	3.8
Services	2.8	2.9	2.6	2.9	3.3	4.2	4.0	4.5	2.4	3.0	2.0
Gross Private Domestic Investment	8.9	13.6	3.1	8.9	12.4	9.8	7.8	5.7	-8.4	-1.2	4.2
Fixed Investment	8.6	9.3	6.5	9.0	9.2	10.2	8.3	6.5	-3.2	-3.7	4.4
Nonresidential	8.7	9.2	10.5	9.3	12.1	11.1	9.2	8.7	-4.5	-7.2	3.0
Structures	-0.7	1.8	6.4	5.6	7.3	5.1	-0.4	6.8	-2.5	-18.4	-4.6
Equipment and Software	12.5	11.9	12.0	10.6	13.8	13.3	12.7	9.4	-5.2	-2.8	5.5
Residential	8.2	9.6	-3.2	8.0	1.9	7.6	6.0	0.8	0.4	4.9	7.5
Net Exports of Goods and Services											
Exports	3.2	8.7	10.1	8.4	11.9	2.4	4.3	8.7	-5.2	-2.4	2.0
Goods	3.3	9.7	11.7	8.8	14.3	2.2	3.8	11.2	-6.1	-4.0	1.9
Services	3.2	6.3	6.3	7.2	5.9	2.9	5.6	2.9	-3.1	1.4	2.3
Imports	8.8	11.9	8.0	8.7	13.6	11.6	11.5	13.1	-2.6	3.3	4.0
Goods	10.1	13.3	9.0	9.3	14.4	11.7	12.4	13.5	-3.2	3.7	4.8
Services	2.9	5.7	3.3	5.5	9.4	11.4	6.9	11.1	0.4	1.4	-0.1
Government Consumption Expenditures and Gross Investment	-0.9	0	0.5	1.0	1.9	1.9	3.9	2.1	2.8	3.8	3.3
Federal	-4.2	-3.7	-2.7	-1.2	-1.0	-1.1	2.2	0.9	3.7	7.9	8.7
National defense	-5.6	-4.9	-3.8	-1.4	-2.8	-2.1	1.9	-0.5	3.9	8.9	10.6
Non-defense	-0.7	-1.2	-0.4	-0.7	2.6	0.7	2.8	3.5	3.5	6.2	5.3
State and local	1.4	2.6	2.6	2.3	3.6	3.6	4.7	2.7	2.2	1.8	0.5

Source: U.S. Department of Commerce, Bureau of Economic Analysis

in the 1990s before receding into negative territory in 2001. Finally, government consumption expenditures and gross investment grew in miniscule terms in the early years of the 1990s before climbing to 2.8 percent, 3.8 percent and 3.3 percent in the 2001 to 2003 periods.

### Unemployment Trends

The nation's unemployment rate is an important measure of its economic performance and another indicator that has far-reaching implications on federal, state and local government finances. Figure 2 provides a graphical demonstration of this measure between 1993 and 2003.

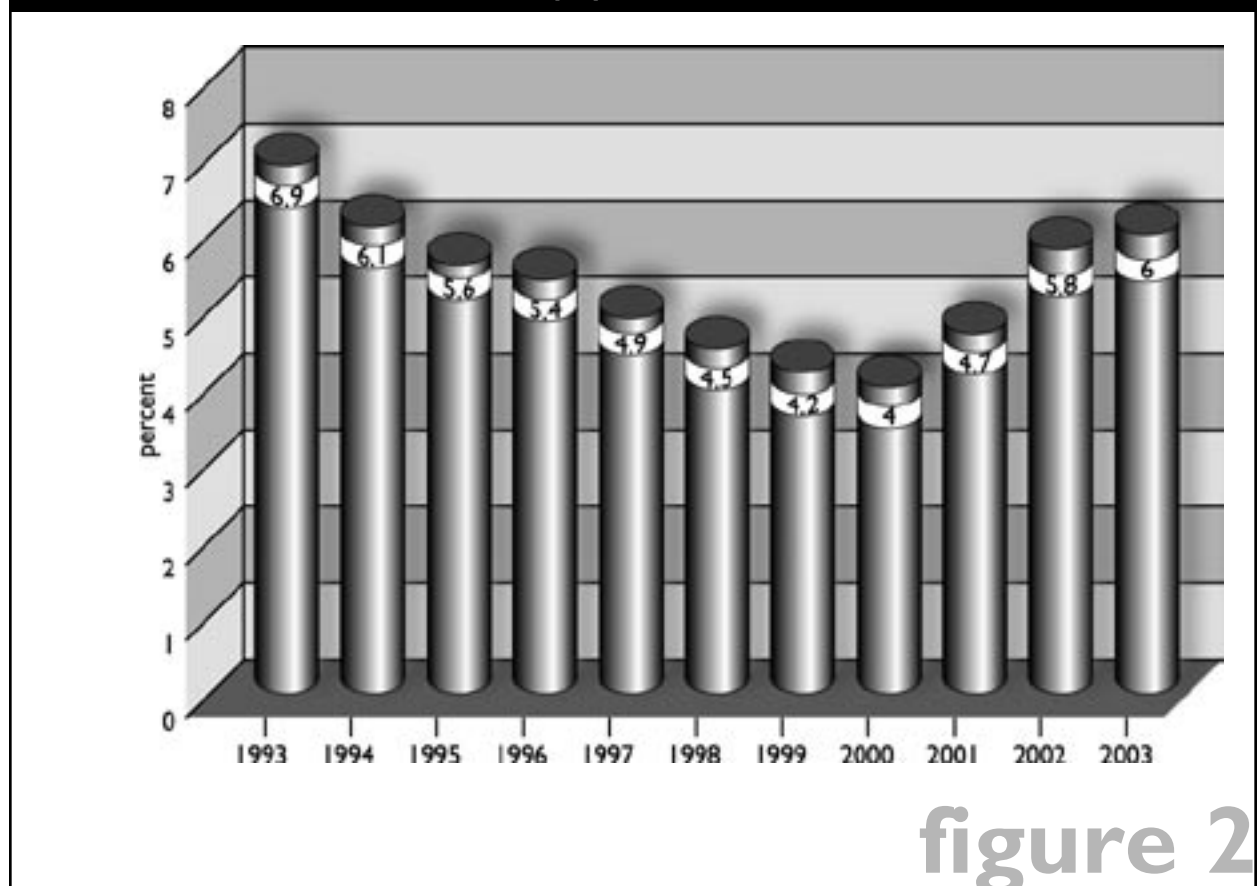
As documented in Figure 2, after cresting at 6.9 percent in 1993—in the aftermath of the 1991 recession—the nation's unemployment rate began a steady downward trek before reaching an extraordinary 4 percent in 2000. In fact, the job growth numbers achieved during most of the 1990s was truly impressive: there were 23 months where 300,000 or more new jobs were created and, in March 2000, the economy added 493,000. This remarkable achieve-

ment was all the more noteworthy in the context of the low inflation rates that prevailed during this period. Then, in 2001, with the onset of the recession, companies began mass layoffs and the national unemployment rate began climbing up. It reached 4.7 percent in 2001, followed by 5.8 percent in 2002, and then 6 percent in 2003. In October 2004, the national unemployment rate stood at 5.5 percent.

**National Unemployment Levels 1993 to 2003**

Year	Unemployment Level
1993	8,940,000
1994	7,996,000
1995	7,404,000
1996	7,236,000
1997	6,739,000
1998	6,210,000
1999	5,880,000
2000	5,692,000
2001	6,801,000
2002	8,378,000
2003	8,774,000

**National Unemployment Rate 1993 to 2003**



**figure 2**

Source: U.S. Department of Labor, Bureau of Labor Statistics

The actual number of unemployed Americans is another important statistic and Table 7 documents this information for the period 1993 to 2003. Once again, the two book-end years (1993 and 2003) involve the highest unemployment levels (8.9 million and 8.8 million, respectively) for the review period. The 5.7 million level reached in 2000 was the lowest for the same period.

Even though there were sizable output increases in both 2002 and 2003, the nation's unemployment rate remained stubbornly high as corporations looked to productivity gains to enhance their profit margins. It was only in the spring of 2004 that hiring levels began picking up, and in the first six months of 2004, the economy created 1.2 million new jobs.<sup>2</sup> However, a disturbing trend that has been discerned during this period involves the high number of Americans that have dropped out of the job hunt; in fact, reports indicate that during the first six months of 2004, approximately 265,000 people dropped out of the job hunt and joined some 19.1 million unemployed Americans. The latter figure, at a record level, is up 44 percent from 10 years ago.

### Federal Budget

The federal budget plays a monumental role in the state of the U.S. economy and by extension in the fiscal situations of all state and local governments.<sup>3</sup> The size of the federal budget surplus or deficit reflects temporary factors, such as the effects of the business cycle or of one-time shifts in the timing of federal spending and tax receipts, as well as the longer-lasting impact of factors such as tax and spending legislation and changes in the growth rate of the economy. While a fiscal deficit in the short-term boosts economic activity at home and abroad via a demand-side effect, the so-called short run "fiscal multiplier," in the medium term, such an imbalance either reduces private consumption (because higher private savings are needed to make up for public dissaving) or lowers private investment, or both, through a mechanism called "crowding out." The eventual cost of this development is lower productivity growth and income. Then, lower productivity growth and income impacts negatively on state economies and, by extension, on the pension funds maintained by state and local governments.

Table 8 demonstrates the total federal budget surplus or deficit between 1990 and 2005 (with estimates for the last two years) alongside this figure as a percentage of GDP.

Federal Budget Deficit/Surplus as a Percent of GDP 1990 to 2005		
Year	Surplus/Deficit (Billions of Dollars)	Percent of GDP
1990	\$-221	-3.9
1991	\$-269	-4.4
1992	\$-290	-4.5
1993	\$-255	-3.8
1994	\$-203	-2.9
1995	\$-164	-2.2
1996	\$-107	-1.4
1997	\$-22	-0.3
1998	\$69	0.8
1999	\$126	1.4
2000	\$236	2.5
2001	\$127	1.3
2002	\$-158	-1.5
2003	\$-375	-3.4
2004	\$-422	-3.6
2005	\$-353	-2.8

Source: Congressional Budget Office, May and September 2004

As documented in Table 8, after reaching a high of \$290 billion in 1992, the highest level in 40 years, the federal budget deficit began declining steadily thereafter. The surplus began in 1998, peaked at \$236 billion in FY 2000 and slipped to \$127 billion in FY 2001. Then, after running budget surpluses for four years in a row (1998 through 2001), the most dramatic drop in tax revenue since 1946, along with several other contributory factors, propelled the federal government into a deficit in 2002. While this deficit scenario continued in 2003 (\$375 billion), it is expected to continue for at least the next decade. As the CBO noted in March 2004, after analyzing the president's budget submission for fiscal year 2005,

"... the deficit under the president's budgetary proposals would be \$478 billion in fiscal year 2004 and \$358 billion in 2005. As a share of the economy, the deficit would total 4.2 percent of gross domestic product (GDP) this year, then fall to 3.0 percent next year. Under the president's policies, the deficit would decline further--to 2.1 percent of GDP--in 2006 and then remain between 1.6 percent and 1.8 percent of GDP through 2014. Those figures do not include possible future costs for ongoing operations in Iraq and Afghanistan, which the administration did not include in its budget for 2005 and subsequent years."<sup>4</sup>

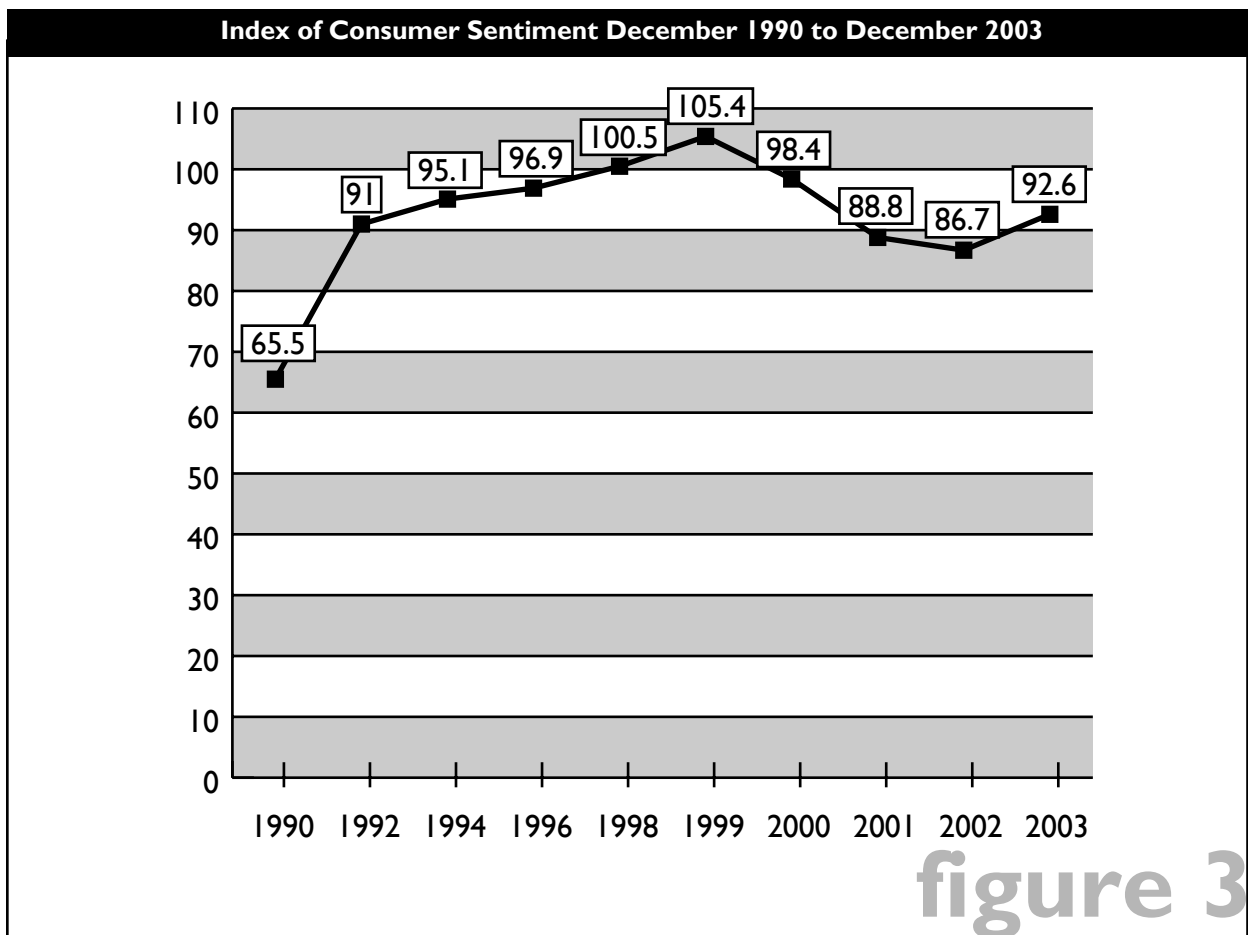
Over the next decade, the CBO estimates that deficit totals could reach at least \$-1.4 trillion between 2005 and 2009 and an even more overwhelming \$-2.7 trillion between 2005 and 2014. In contrast to the \$5.6 trillion surplus forecast between fiscal years 2002 and 2011 by the CBO in 2001, the deficit forecasted for the coming decade further complicates the task of policymakers embarking on a range of projects. The CBO revised its deficit estimates for 2004 and 2005 in September 2004 (from those made in May 2004) to \$-422 billion (down from \$477 billion) and \$-353 billion (down from \$363 billion).

In terms of the deficit as a percentage of GDP, in the 15 years represented, the highest level reached was -4.9 percent in 1992; this number dwindled to -0.3 percent in 1997 before turning positive for the next four years. Then, the percentage began its ascent in 2002 and is forecasted to be -3.6 percent in 2004.

### Consumer Confidence

Given that consumer spending constitutes such an integral portion of the U.S. economy, reputed to account for two-thirds of all economic activity, economists and policymakers closely track the monthly consumer confidence reports. This index, which reflects consumers' assessment of current business conditions, has implications for the performance of the stock markets as well as the economy in general. Once again, depressed consumer sentiment impacts state economic activity and eventually affects, negatively, the performance of state and local government retirement funds. Figure 3 demonstrates the movement of this consumer confidence index as presented by the University of Michigan's Index of Consumer Sentiment during the past 13 years or so.<sup>5</sup>

During the throes of the 1990/1991 recession, consumer sentiment across the country was very depressed (65.5). As the economy gradually



Source: University of Michigan, Survey of Consumers, Index of Consumer Sentiment

sprang forward, the index gradually began climbing and attained 105.4 in December 1999, reaching its apex in January 2000 (112.0), the index's highest level over a period of 50 years (November 1952 to December 2003). It should also be noted that the broad economic prosperity and relative calm in global affairs in the late 1990s resulted in the index exceeding 100 in 44 of the 48 months in the years 1997 through 2000.

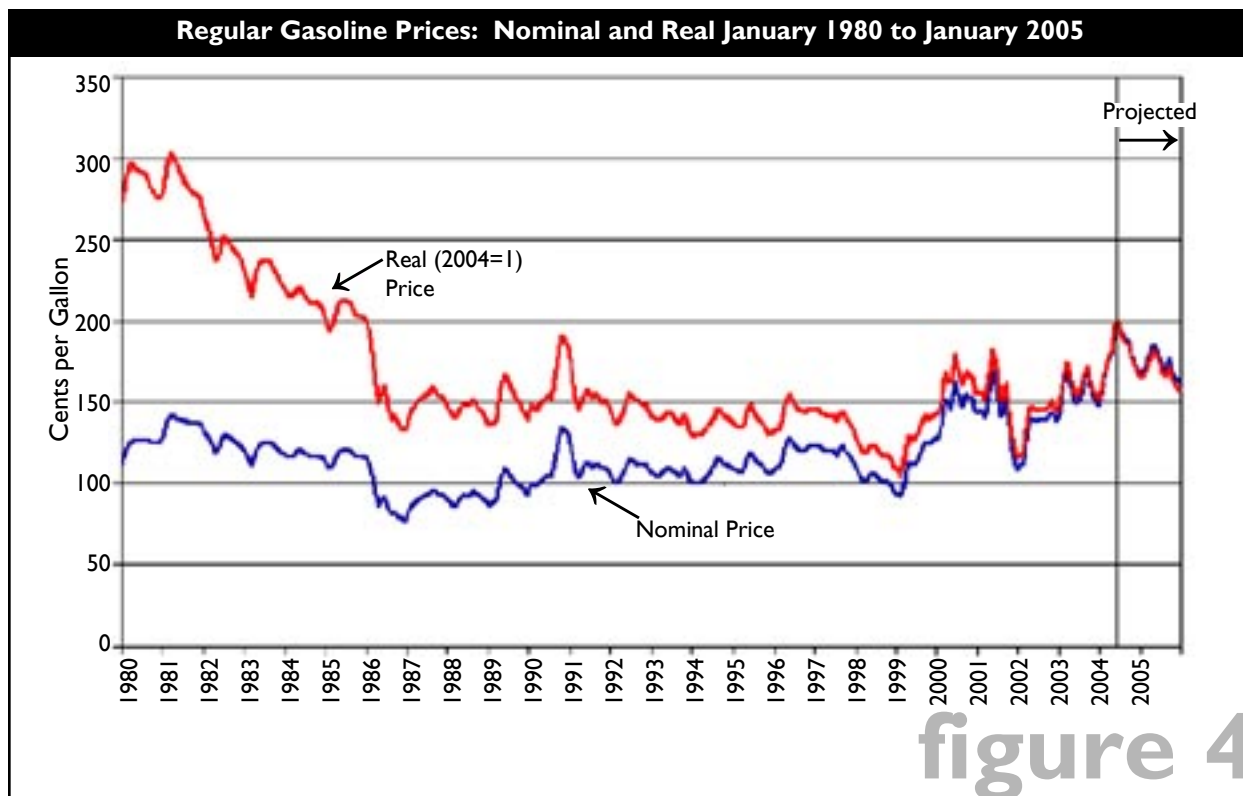
### Energy Prices

World energy supplies play a pivotal role in the state of the U.S. economy and every other country in the world. A sharp spike in world energy prices can wreck havoc in a nation's economic performance, either impeding or assisting economic growth trends. Uncertainty in the Middle East, where a bulk of the world's oil supplies originates, can result in oil prices shooting up and even bringing about a recession. The oil price hikes in the early and late 1970s certainly contributed to the U.S. economy spiraling into recession; similarly, low priced and abundant supplies of oil will stimulate growth, as it did in the late 1990s in the United States. As in the case of the other variables affecting the economy, energy prices play a direct role in state economies and, by extension, in the performance of public sector retirement funds.

Figure 4 presents both the nominal and real price of regular gasoline—as reported by the U.S. Department of Energy—between January 1980 and January 2004 along with a projection for January 2005. Combining the information reflected in Figure 4 and the GDP information in Table 9 indicates that the slump in gasoline prices coincided with a sharp uptick in economic growth during the late 1990s. For instance, in 1998 when the price of gasoline in real terms was about 103 cents per gallon, GDP growth stood at an impressive 4.2 percent; similarly, in 1999, when gasoline was about 113 cents per gallon, GDP growth was at 4.5 percent. While the price of gasoline certainly is not the only factor determining the health and pace of economic growth, it certainly is an important one.

### Interest Rates

Interest rates are among the multitude of factors that play a dominant role in national and state economies, as well as in the finances of public sector retirement systems. While an accommodative monetary policy stance by the Federal Reserve System is an important variable in the equation to spur economic growth, the reverse, a restrictive stance, acts as a brake on economic growth and potential inflationary pressures. However, an environment of rising interest rates has the benefit

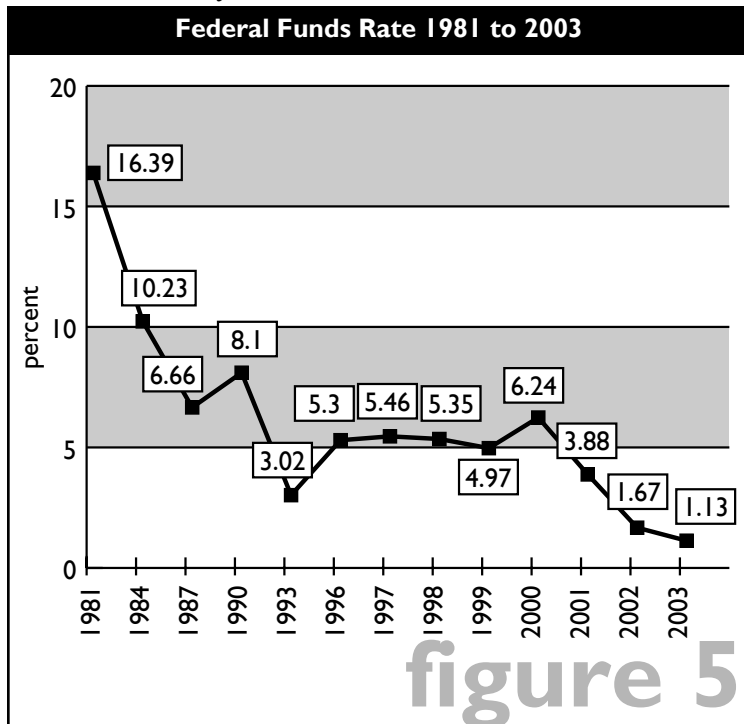


Source: U.S. Department of Energy

Note: Nominal price refers to actual price; real price refers to the price adjusted for inflation.

of generating higher returns for the portfolios of public sector retirement systems; similarly, declining interest rates have the opposite effect on these investments, particularly if they are primarily in cash and money market accounts.

Probably the most potent weapon deployed by the Federal Reserve System in its arsenal of monetary options involves regulating the federal funds rate, i.e., the cost of borrowing immediately available funds. Figure 5 provides a graphical representation of the federal funds rate during the past 20 or so years.



Source: Federal Reserve System, June 28, 2004

The 16.4 percent federal funds rate set by the Federal Reserve Bank in 1981 was the highest rate set since 1955 and involved only one of six years when this pivotal rate stood in double digits between 1955 and 2003. The rate gradually was lowered from this level in the next two decades, even though there were years when the rate was increased, to reach the astoundingly low 1 percent level in 2003. In fact, the federal funds rate in 2003, and for the first half of 2004, remained at the lowest level it had been in almost five decades (46 years to be precise). The 25 basis points increase enacted by the Federal Reserve Bank in late June 2004, the first such increase in four years, still meant that interest rates continued at nearly historic lows. In fact, the “real” federal funds rate, adjusted for inflation, has been below zero for much of the past two years. Analysts contend that this constitutes the Federal Reserve’s most aggressive easy-money policy since well before World War

II, and reflects the central bank’s determination to ward off the shocks caused by recession, terrorist attacks and anxieties surrounding the war in Iraq.

As previously indicated, the aggressive “easy-money” approach pursued by the Federal Reserve Bank in the last three years or so was an effort to ward off a slump in economic performance, coincided with the slump in the nation’s equity markets between 2000 and 2002. As expected, these twin features impacted negatively on the finances of the nation’s public retirement systems.

## Equity Markets

In the 1990s, U.S. equity markets experienced a tremendous upsurge, ranking among the highest in the history of the markets based on a number of criteria. From the Dow Jones Industrial Average to the S&P 500 Index to the Nasdaq Composite to the Russell 2000 Index, the performance of these indices was indeed unparalleled. As a result, individuals, corporations, institutional investors and state and local government retirement systems saw an unprecedented escalation in their portfolios. By March 2000, the stock markets’ red-hot performance was exemplified by the fact that the S&P 500 Index rose by 480 percent in the prior decade, its best 10-year return in four decades, and the technology-laden NASDAQ composite index zoomed forward by 1,035 percent in the same 10 years.<sup>6</sup> One of the major forces behind the tremendous gains shown by the markets during that time period was the zeal for Internet and other technology stocks displayed by so many individuals and institutional investors.

This equity market escalation during the 1990s also saw managers of these state and local government retirement systems shifting a greater proportion of their portfolios away from government securities to non-government securities (corporate stocks, corporate bonds, foreign holdings etc.) to take full advantage of the rise in the equity markets. Unfortunately, the impressive run-up in the nation’s equity markets came to a halt in March 2000, and for almost the next three years, through 2002, the markets’ plummeted and stagnated. When the nation’s stock market registers declined for the third consecutive year in 2002, it marked only the third time this had happened: 1929 through 1932 during the Great Depression; 1939 through 1941 during World War II; and then between 2000 and 2002, the first occurrence since the 1930s.<sup>7</sup>

Prior to the stagnant ‘bear’ market of 2000 to 2002, there were eight notable stock market declines since 1954. On each of these occasions, stocks rose in the six months after the economy bottomed out.

In the most recent decline, this did not happen and, in fact, the S&P 500 actually fell about 10 percent over the same period. The major differences here were the revelations concerning Enron and a number of other corporations engaged in accounting fraud and illegal activities that shattered investor confidence to the point of drastically depressing the stock market. Another reason was that the equity market run-up in the 1990s was based disproportionately on the telecommunications and technology industries. These industries had built up capacity levels in excess of what was needed and the 2000-2002 bear market resulted in the demise of a number of the companies in this field. Finally, the post-September 11, 2001, environment also served to depress investor confidence, both individual and corporate, a trend that impacted negatively on the growth potential of the markets.

While the length of the markets' decline remained severe, the 2000 to 2002 decline also ranks as one of the deepest in history. In terms of the S&P 500 Index, for instance, by late July 2002, it had declined 47.8 percent from its peak reached in March 2000; the only post-Depression decline comparable to this plunge was in 1973-74 when the S&P 500 fell 48.2 percent. Hence, the 2000 to 2002 decline was not only one of the longest, it also was one of the deepest on record.

Tables 9 and 10 provide a detailed breakdown of four major equity market registers and their performance in the last 10 to 20 years. A review of this performance illustrates the valleys and peaks reached by these registers while providing insights into the record of state and local government retirement systems in buttressing their assets.

### **Dow Jones Industrial Average**

In order to meet their short-term cash requirements, corporations generally borrow from banks. However, when corporations require long-term financing, they may sell ownership interests in the company (common stocks and preferred stocks) to the public, or borrow from the public by selling bonds. In particular, companies in need of long-term financing sell portions of the business as stocks (equity securities) in exchange for cash. While this is the major method of raising capital other than by issuing bonds, when the stocks of these corporations are owned by the public-at-large they are said to be publicly held. In turn, these publicly held shares can be traded (sold) to other investors in the stock market and are, in this case, known to be liquid, or readily converted to cash.

At the time Charles H. Dow unveiled his industrial stock average on May 26, 1896, the stock market was not highly regarded. Prudent investors bought bonds which paid predictable amounts of interest and were backed by real machinery, factory buildings and other hard assets.<sup>8</sup> Investors felt reassured by the predictability of the income offered by bonds as well as the specific dates of maturity when their principle would be returned. The stock market, in contrast, dealt in "shares of ownership" which had no specific claim on anything a company owned. Further complicating this scenario was the fact that investors on Wall Street had difficulties analyzing the daily jumble of whether stocks were "up a quarter" and "down an eighth" or whether they were rising, falling or staying even. Dow invented his stock average to make sense of this confusion beginning in 1884 with 11 stocks, a majority of them railroads. (Since railroads ranked high as the largest and strongest companies in America at that time, they dominated Dow's first average.) Furthermore, few stocks of industrial companies were publicly traded since they were considered highly speculative.

The 30 stocks now in the Dow Jones Industrial Average (DJIA) all are major factors in their industries, and their stocks are widely held by individuals and institutional investors. They range from aviation (Boeing) to computers (IBM and Intel) to pharmaceuticals (Pfizer, Merck and Johnson & Johnson) to banking and finance (J.P. Morgan, American Express, American International Group and Citigroup), an incredible expansion in the concept envisaged by Dow over a century ago. The Dow Jones Industrial Average accounted for more than 26 percent of the investable U.S. market, as measured by the Dow Jones U.S. Total Market Index (about \$11.6 trillion as of December 31, 2003). Table 9 documents the movements of the DJIA between 1983 and 2003.



### Dow Jones Industrial Average 1983 to 2003

Year	At Start of Year	Year's High Close	Year's Low Close	At Close of Year	Change Points	Change Percent	Dividends	Yields Percent
2003	8,607.52	10,453.90	7,524.06	1,0453.9	+2,112.29	+ 25.32	211.87	2.03
2002	10,073.40	10,635.25	7,286.27	8,341.63	-16,79.87	- 16.76	189.68	2.27
2001	10,646.15	11,337.92	8,235.81	10,021.50	- 765.35	- 7.10	181.07	1.81
2000	11,357.51	11,722.98	9,796.03	10,786.85	- 710.27	- 6.18	172.08	1.60
1999	9,184.27	11,497.12	9,120.67	11,497.12	+2,315.69	+ 25.22	168.52	1.47
1998	7,965.04	9,374.27	7,539.07	9,181.43	+1,273.18	+ 16.10	151.13	1.65
1997	6,442.49	8,259.31	6,391.69	7,908.25	+1,459.98	+ 22.64	136.10	1.72
1996	5,177.45	6,560.91	5,032.94	6,448.27	+1,331.15	+ 26.01	131.14	2.03
1995	3,838.48	5,216.47	3,832.08	5,117.12	+1,282.68	+ 33.45	116.56	2.27
1994	3,756.60	3,978.36	3,593.35	3,834.44	+ 80.35	+ 2.14	105.66	2.75
1993	3,309.22	3,794.33	3,241.95	3,754.09	+ 452.98	+ 13.72	99.66	2.65
1992	3,172.41	3,413.21	3,136.58	3,301.11	+ 132.28	+ 4.17	100.72	3.05
1991	2,610.64	3,168.83	2,470.30	3,168.83	+ 535.17	+ 20.32	95.18	3.00
1990	2,810.15	2,999.75	2,365.10	2,633.66	- 119.54	- 4.34	103.70	3.94
1989	2,144.64	2,791.41	2,144.64	2,753.20	+ 584.63	+ 26.96	103.00	3.74
1988	2,015.25	2,183.50	1,879.14	2,168.57	+ 229.74	+ 11.85	79.53	3.67
1987	1,927.31	2,722.42	1,738.74	1,938.83	+ 42.88	+ 2.26	71.20	3.67
1986	1,537.73	1,955.57	1,502.29	1,895.95	+ 349.28	+ 22.58	67.04	3.54
1985	1,198.87	1,553.10	1,184.96	1,546.67	+ 335.10	+ 27.66	62.03	4.01
1984	1,252.74	1,286.64	1,086.57	1,211.57	- 47.07	- 3.74	60.63	5.00
1983	1,027.04	1,287.20	1,027.04	1,258.64	+ 212.10	+ 20.27	56.33	4.47

Source: Dow Jones Indexes, [www.djindexes.com](http://www.djindexes.com)

As indicated, the 1990s were a period of exceptional growth in the index with the average zooming from 2,810 at the beginning of the decade to 11,358 at the end, an astounding increase of 304 percent. Growth was particularly impressive in the last five years of the decade when the DJIA expanded by an average of 25 percent in each of those years. Starting in 2000, the situation changed radically and the DJIA plummeted by an average of 10 percent in each of the years between 2000 and 2002. The average recovered to grow by 25 percent in 2003. This rise and fall in the average was amply reflected in the performance of public sector retirement systems which saw a similar ebb and flow in their cash and investment holdings.

#### NASDAQ

The NASDAQ is the largest U.S. electronic stock market and is home to industry leaders in such areas as technology, retail, communications, financial services, transportation, media and biotechnology.<sup>10</sup> With approximately 3,300 companies, it lists more companies and, on average, trades more shares per day than any other U.S. equities market. In the 1990s, the performance of the NASDAQ, particularly the rise in the share prices of technology and telecommunications companies, was meteoric.

Similarly, the sharp decline in the equities markets that began in March 2000 affected the NASDAQ severely, and the index is still far from reaching the heady levels achieved in the late 1990s. Table 10 provides a glimpse into the significant milestones reached by the NASDAQ index since 1971.

#### Significant Milestones: NASDAQ Composite Index Records 1971 to 2004

Milestone	Date Reached	Actual Closing Value
100	February 5, 1971	100
500	April 12, 1991	501.62
1,000	July 17, 1995	1,005.89
2,000	July 16, 1998	2,000.56
3,000	November 3, 1999	3,028.51
4,000	December 29, 1999	4,041.46
5,000	March 9, 2000	5,046.86
2,048	June 30, 2004	2,047.79

Source: [www.nasdaq.com](http://www.nasdaq.com)

As indicated in Table 10, the upward trajectory of the NASDAQ stock market was very impressive in the 1990s. For instance, while it took the index over 20 years to progress from 100 to 500, in the time period of less than a decade (April 1991 to March 2000), the index exploded from 502 to 5,047, an astounding acceleration rate. In the period since March 2000, the index dropped sharply to languish in triple digit territory for extended months and midway through 2004 (June 30, 2004) the index stood at 2,047.79. As with the other indexes, the nation's public retirement systems enjoyed the tremendous boom in their asset portfolios during the rise of the NASDAQ and also experienced setbacks when all these indexes declined between 2000 and 2002.

### S&P 500 Index

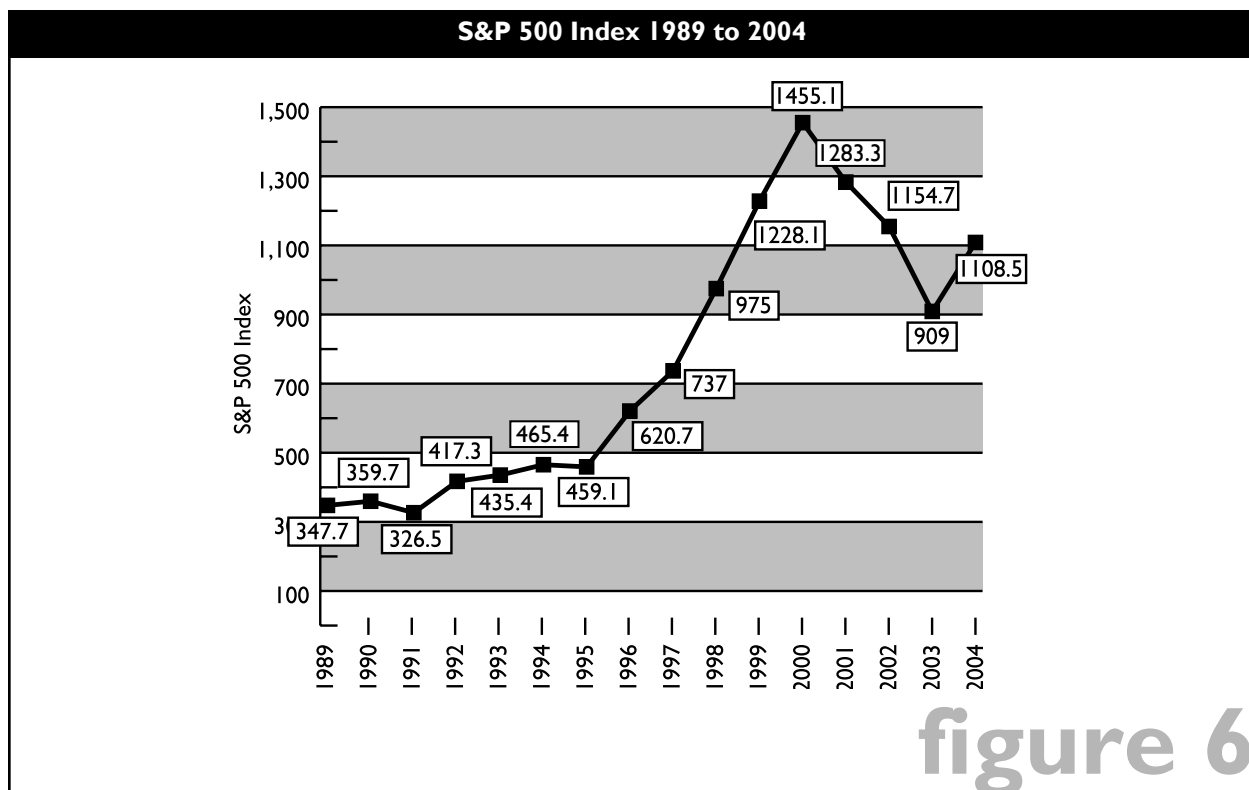
Widely regarded as the best single gauge of the U.S. equities market and with more than \$1 trillion in indexed assets, this index includes a representative sample of 500 major companies in leading industries of the U.S. economy.<sup>9</sup> The history of the S&P 500 dates back to 1923, when Standard and Poor's introduced an index covering 233 companies. The Index, as it is known today, was introduced in 1957 when it was expanded to include 500 companies. While the S&P 500 focuses on the large-cap segment of the market, with more than 80 percent coverage of

U.S. equities, it also is an ideal proxy for the total market. Figure 6 documents the movement of the S&P 500 Index between September 11, 1989 and the first day of trading at the beginning of each year between 1990 and 2004.

Once again, during the 1990s, the S&P Index grew at very impressive pace, an improvement of 304 percent between January 2, 1990 and January 3, 2000. The steady increase experienced during this decade tapered off and the Index fell for the next three years before climbing upwards again in 2003.

### Russell 2000 Index

Russell produces a family of 21 U.S. equity indexes; the indexes are market cap-weighted and include only common stocks incorporated in the United States and its territories.<sup>11</sup> These indexes all are subsets of the Russell 3000 Index, which represents about 98 percent of the investable U.S. equities market. The Russell 2000 Index, in particular, offers investors access to the small-cap segment of the U.S. equity universe, and the performance of these small-cap companies is considered another barometer of the overall equity market. Figure 7 plots the progress of the Russell 2000 Index at the end of each year between 1995 and 2003 and reflects trends similar to the previously discussed markets.



Source: [www.standardandpoors.com](http://www.standardandpoors.com)

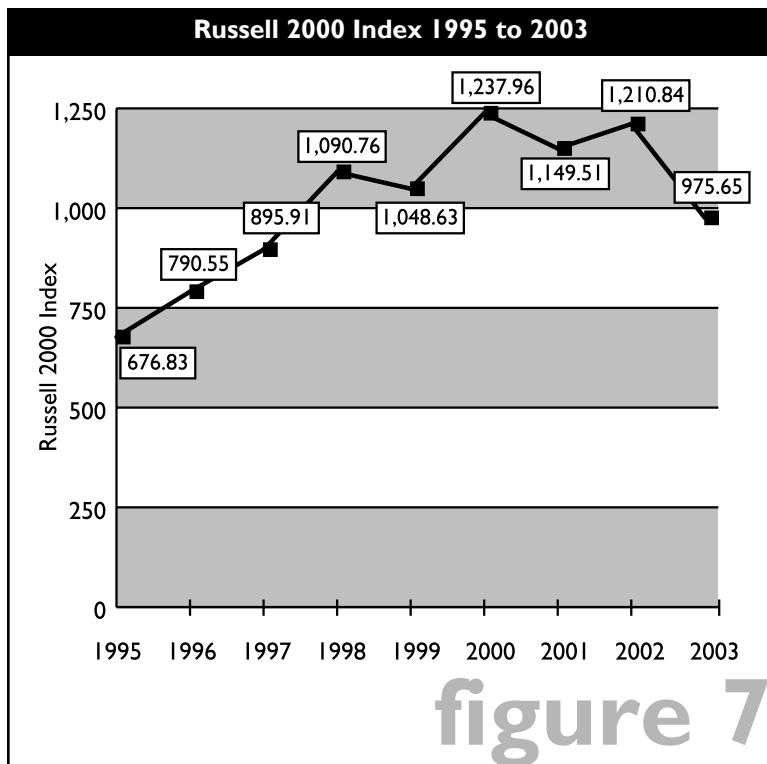


figure 7

Source: [www.russell.com](http://www.russell.com)

Note: 1995 refers to June 1, 1995; for the remaining years, it is January 2.

### State Finances

The final component influencing public sector retirement systems involves state finances. A comparison of state finances in the latter half of the 1990s with the first few years of this decade represents the starkest of possible contrasts: an extraordinary boom in state finances followed by a fiscal crisis that has been termed the worst confronting states since the Second World War. The 1990s opened with a recession that was relatively mild even though it affected certain states and parts of the country (California and the Northeast, for instance) more severely. By the mid-1990s, state tax revenues began coming in above expectations, repeatedly, and states embarked on a series of actions that previously would have been considered impossible under any circumstances: slashing tax rates year after year; boosting spending in such areas as education, healthcare, corrections and infrastructure significantly; and replenishing reserve funds, i.e., rainy day funds, to unparalleled levels. States were able to implement these seemingly disparate actions while ensuring their constitutionally mandated objective of a balanced budget.

Until about late 2000, state revenues roared in at record levels, gross state product (GSP) growth generally was above estimates and unemployment

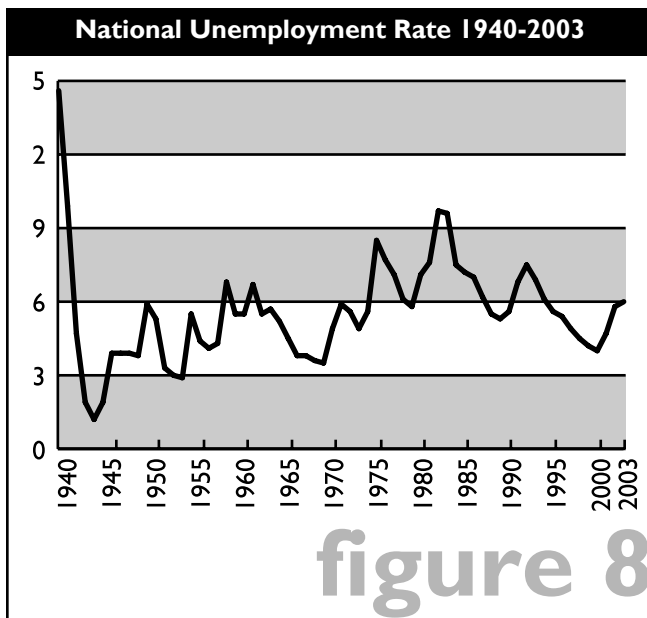
rates were at record low levels. By early 2001, however, manufacturing levels began to decline, the stock markets had slipped from their heady levels and the economy began sliding into recession, a trend only worsened by the September 11, 2001, terrorist attacks. While the recession that ensued was relatively shallow, the cumulative impact on state economies and finances has been extremely severe. In fact, the tremendous negative pressures created by the downturn in the economy were reflected in such trends as dwindling revenue flows, rising unemployment numbers and exploding Medicaid costs at the state level. Each of these negative trends pummeled state finances in a vicious, self-perpetuating cycle. While the steep drop in tax revenues, due to severely reduced individual and corporate income taxes—given the high unemployment rate, almost nonexistent capital gains revenue and lower corporate profits—affected the revenue side of the balance sheet, the increasing number of Americans seeking assistance from their state governments, whether in the form of unemployment insurance or Medicaid health coverage, pressured the expenditure side of the balance sheet. Consequently, these bleak financial times sweeping over state and local governments filtered down to negatively impact public sector retirement system finances too.

Highlighting the following aspects of state finances--unemployment rates, revenue inflows and budget shortfalls--helps compare and contrast these very different periods between 1998 and 2003 in the 50 states.

### Unemployment Rates

A comparison of state unemployment rates between the late 1990s and the early years of the current decade illustrates one of the most marked differences between the two eras. As indicated earlier, the final years of the last decade saw some of the lowest unemployment rates in the history of the country while, more recently, these rates have climbed up considerably. As expected, these higher unemployment rates have a distinct impact on state economies and the end result of depressing the finances of public sector retirement systems.

Figure 8 provides a graphical representation of the national unemployment rate between 1940 to 2003. The final five years are of greater significance in terms of this report and, as indicated, the rate had begun its downward drive in the mid-1990s sinking to 4 percent in 2000, before climbing up to 4.7 percent in 2001, 5.8 percent in 2002 and then 6 percent in 2003. The rate in October 2004 has been better, 5.5 percent.



Source: U.S. Department of Labor, Bureau of Labor Statistics

In terms of the state-by-state breakdown of unemployment rates, similar trends are apparent. Table 11 documents the unemployment rate in the 50 states (and the District of Columbia) for the five-year period, 1998 to 2003.

As evidenced in Table 11, during the late 1990s states experienced some of their lowest unemployment rates in decades as the economy continued its forward progression. Even though overall economic growth started sputtering toward the end of 2000, the unemployment rates in states in that year were remarkable. Alongside the national unemployment rate of 4 percent, states such as Connecticut and Virginia (both at 2.2 percent), South Dakota (2.3 percent) and Iowa and Massachusetts (both at 2.6 percent) secured record-low rates. During this year, except for Alaska, where the unemployment rate was 6.7 percent, every other state had an unemployment rate lower than 5.7 percent. In contrast in 2003, only three states had unemployment rates at or lower than 4 percent, South Dakota (3.6 percent), Nebraska and North Dakota (both at 4 percent). Furthermore, 23 states and the District of Columbia had unemployment rates higher than 5.7 percent with Oregon (8.2 percent), Alaska (8 percent) and Washington (7.5 percent) experiencing the most severe labor conditions. Inevitably, the dismal employment outlook in states in recent years, particularly between 2001 and 2003, had the unfortunate side effect of smothering the growth of these public sector retirement systems.

**Average Annual Unemployment Rate by State in Percent 1998 to 2003**

State	1998	1999	2000	2001	2002	2003
<b>National</b>	<b>4.5</b>	<b>4.2</b>	<b>4.0</b>	<b>4.7</b>	<b>5.8</b>	<b>6.0</b>
Alabama	4.2	4.8	4.5	5.3	5.9	5.8
Alaska	5.8	6.4	6.7	6.4	7.7	8.0
Arizona	4.1	4.4	4.0	4.7	6.2	5.6
Arkansas	5.5	4.5	4.4	5.0	5.4	6.2
California	5.9	5.2	4.9	5.4	6.7	6.7
Colorado	3.8	2.9	2.8	3.7	5.7	6.0
Connecticut	3.4	3.2	2.2	3.3	4.3	5.5
Delaware	3.8	3.5	3.9	3.4	4.2	4.4
D.C.	8.8	6.3	5.7	6.4	6.4	7.0
Florida	4.3	3.9	3.6	4.8	5.5	5.1
Georgia	4.2	4.0	3.7	4.0	5.1	4.7
Hawaii	6.2	5.6	4.3	4.6	4.2	4.3
Idaho	5.0	5.2	4.9	5.0	5.8	5.4
Illinois	4.5	4.3	4.3	5.4	6.5	6.7
Indiana	3.1	3.0	3.2	4.4	5.1	5.1
Iowa	2.8	2.5	2.6	3.3	4.0	4.5
Kansas	3.8	3.0	3.7	4.3	5.1	5.4
Kentucky	4.6	4.5	4.1	5.4	5.6	6.2
Louisiana	5.7	5.1	5.4	5.9	6.1	6.6
Maine	4.4	4.1	3.5	3.9	4.4	5.1
Maryland	4.6	3.5	3.8	4.0	4.4	4.5
Massachusetts	3.3	3.2	2.6	3.7	5.3	5.8
Michigan	3.9	3.8	3.5	5.3	6.2	7.3
Minnesota	2.5	2.8	3.3	3.7	4.4	5.0
Mississippi	5.4	5.1	5.6	5.5	6.8	6.3
Missouri	4.2	3.4	3.4	4.7	5.5	5.6
Montana	5.6	5.2	5.0	4.6	4.6	4.7
Nebraska	2.7	2.9	3.0	3.1	3.6	4.0
Nevada	4.3	4.4	4.0	5.3	5.5	5.2
New Hampshire	2.9	2.7	2.8	3.5	4.7	4.3
New Jersey	4.6	4.6	3.7	4.2	5.8	5.9
New Mexico	6.2	5.6	5.0	4.8	5.4	6.4
New York	5.6	5.2	4.6	4.9	6.1	6.3
North Carolina	3.5	3.2	3.6	5.5	6.7	6.5
North Dakota	3.2	3.4	3.0	2.9	4.0	4.0
Ohio	4.3	4.3	4.0	4.2	5.7	6.1
Oklahoma	4.5	3.4	3.1	3.8	4.5	5.7
Oregon	5.6	5.7	4.9	6.3	7.5	8.2
Pennsylvania	4.6	4.4	4.1	4.7	5.7	5.6
Rhode Island	4.9	4.1	4.1	4.7	5.1	5.3
South Carolina	3.8	4.5	3.8	5.3	6.0	6.8
South Dakota	2.9	2.9	2.3	3.4	3.1	3.6
Tennessee	4.2	4.0	3.9	4.4	5.1	5.8
Texas	4.8	4.6	4.2	4.8	6.3	6.8
Utah	3.8	3.7	3.3	4.4	6.1	5.6
Vermont	3.4	3.0	2.9	3.6	3.7	4.6
Virginia	2.9	2.8	2.2	3.4	4.1	4.1
Washington	4.8	4.7	5.2	6.4	7.3	7.5
West Virginia	6.7	6.6	5.5	4.8	6.1	6.1
Wisconsin	3.4	3.0	3.6	4.5	5.5	5.6
Wyoming	4.8	4.9	3.9	3.9	4.2	4.4

Source: U.S. Department of Labor, Bureau of Labor Statistics

## State Revenue Trends

State revenue patterns between the late 1990s and the early years of the current decade constitute the most marked divergences between the two eras. The collapse in state revenues resulted in budget shortfalls in states that continue to plague state finances. Cumulatively, in a four-year period, fiscal years 2001 through 2004, states were confronted with a deficit of about \$250 billion, a monumental amount by any standard. Table 12 documents the year-over-year change in quarterly revenues in both nominal and real terms. The information in real terms reflects adjustments for inflation and legislated tax changes.

Focusing on the changes in real terms in Table 12 indicates that state total revenue inflows were extremely strong throughout calendar years 1997, 1998, 1999 and through the third quarter of 2000. In fact, for the four-year period 1997 through 2000, the average revenue increase per quarter stood at 5 percent, a noteworthy achievement indeed. Total tax revenue grew 11.4 percent in nominal terms from April-June 1999 to April-June 2000, by far the fastest total growth for any quarter during the entire decade of 1990s.

The souring national economy soon came to be reflected in state revenue beginning in the final quarter of 2000, when revenues only grew by a scant 0.7 percent (real) compared to the same three-month period in 1999. A further indication of the revenue woes confronting states during this time period (first quarter of calendar year 2001 through the second quarter of calendar year 2004) is demonstrated by the fact that eight of the 14 quarters resulted in negative growth rates when compared to the same time period in the prior year. These eight consecutive quarters of negative revenue growth created gaping

holes in state budgets and one of the consequences here was that states were unable to, or forced to postpone, making their routine contributions to their retirement systems. Consequently, these retirement systems were negatively affected. The steep declines of -8.7 percent and -12.8 percent in the first two quarters of 2002 were the worst declines in state revenues in decades. While the situation has improved in 2004, demonstrated by the 5.5 percent and 6.7 percent real growth rates reached in the first and second quarters of 2004, “the existing, built-in financial demands of states’ current responsibilities are growing more rapidly than are revenues.”<sup>12</sup>

## State Budget Shortfalls

As documented in state unemployment and revenue trends, the 2001 recession severely damaged the financial foundation of every state government. The sharp drop in revenue was accompanied by a sharp increase in the demand for state services as thousands of individuals tried to grapple with the fallout of the recession and the sluggish recovery. While the far-reaching consequences of the economic downturn in the states have been discussed in many forums, there are several statistics that serve to hone in on the extent of these fiscal difficulties. For instance, at the start of fiscal year 2000 (July 1, 1999 to June 30, 2000), the cumulative beginning balance for states stood at an impressive \$26 billion; the cumulative ending balance was \$33.2 billion. In sharp contrast, at the start of fiscal year 2003 (July 1, 2002 to June 30, 2003), the cumulative beginning balance for states had dropped to \$10.7 billion; the ending balance for the same fiscal year was \$10.2 billion. Similarly, in fiscal year 2000, the contributions to state budget stabilization funds reached a staggering \$27.4 billion; in contrast, in fiscal year 2003, this particular fund had \$9.3 billion.

Clearly, the negative implications of broader national economic trends (waning gross domestic product growth; rising unemployment levels; mounting crises in consumer confidence; escalating oil prices; drooping interest rates; and, faltering equity markets) coalesced with such negative developments at the state level (plunging revenue levels; increasing unemployment rates; rising budget shortfalls) to seriously undermine the financial position of public sector retirement systems.

**Year-Over-Year Change in Quarterly State Tax Revenue 1997 to 2004**

	Quarter 1		Quarter 2		Quarter 3		Quarter 4	
	Nominal	Real	Nominal	Real	Nominal	Real	Nominal	Real
1997	6.0	5.0	6.2	5.4	5.5	3.5	6.8	5.1
1998	6.5	5.1	9.7	9.4	6.6	5.2	7.5	6.4
1999	4.8	4.5	5.0	5.2	6.1	3.4	7.4	4.5
2000	9.7	5.7	11.4	7.2	7.1	3.3	4.0	0.7
2001	5.1	2.2	2.5	0.8	-3.1	-4.6	-2.7	-3.4
2002	-7.8	-8.7	-10.6	-12.8	2.5	-0.6	1.9	-1.7
2003	1.4	-4.3	3.2	-1.8	4.5	0.4	7.3	1.8
2004	8.1	5.5	11.4	6.7	8.4	4.5		

Source: Rockefeller Institute

Note: Quarter 1=January to March; Quarter 2=April to June; Quarter 3=July to September; Quarter 4=October to December