Expert Report of James E. Hass

Regarding Interest Rates and Discount Rates for the Estimation of Asbestos Personal Injury Liabilities for Owens Corning and Fibreboard Corporation

October 15, 2004

HR&A

Hamilton, Rabinovitz & Alschuler, Inc.
Los Angeles • New York • Washington D.C.

PROFESSIONAL QUALIFICATIONS/PRIOR TESTIMONY/FEES

I am James E. Hass of Hamilton, Rabinovitz & Alschuler, Inc. ("HR&A"). I am an investment banker with more than 25 years of experience in the practice of financial and economic analysis. As part of my professional responsibilities in investment banking, which have focused on bond and other debt transactions, I regularly provide advice and analysis on interest rates and discount rates. I have also provided expert opinions on interest rates and discount rates in a recent litigation.

Exhibit I includes a description of my professional qualifications, a list of publications I have authored during the last ten years and a list of my prior testimony within the past four years. My current hourly rate is $500 per hour and time and a half for depositions and trial. The hourly rates for all other professionals employed by HR&A are set forth in the fee applications that are regularly filed with the bankruptcy courts.

SCOPE OF ENGAGEMENT

I have been asked to render an opinion regarding the appropriate inflation and discount rates to calculate the present value of Owens Corning's ("OC") and its affiliated debtor, the Fibreboard Corporation's ("FB") asbestos personal injury liabilities as of October 5, 2000. In connection with forming the opinions contained in this report, I reviewed the reports of Francine F. Rabinovitz, Ph.D. for OC and FB dated October 15, 2004 (the "Rabinovitz Reports").

OPINIONS AND UNDERLYING BASIS

Two of the key variables used in estimating the net present value of asbestos personal injury liabilities are the inflation rate and the discount rate. The inflation rate is used to adjust the level of claim awards as they are paid over the next 50 years. The discount rate is used to adjust to a current dollar value the annual claims payments estimated in the Rabinovitz Reports.

We use the Congressional Budget Office's long-term estimate of the percentage change in the consumer price index for the inflation rate and also their estimate of the interest rate on the US Ten-Year Treasury Note as our discount rate, which in 2000, the year OC and FB filed for bankruptcy, were 2.5% and 5.7%, respectively (see Exhibit II).

The Congressional Budget Office is an analysis and research office of the US Congress, which was established to provide independent economic analysis. Their economic forecasts are generally regarded as unbiased and authoritative, and well within the range of other major economic forecasting groups.

We have chosen the Consumer Price Index (CPI) instead of other alternatives such as health care costs because asbestos costs are not necessarily directly related to health care costs, and the CPI is generally accepted as the best indicator of changes in the over all level of prices. We use the Ten-Year Treasury Note as a benchmark because it most consistently reflects the level of interest rates for long-term debt, most closely matches the average claim maturity and is consistent with the interest rate of an annuity that might be used to fully fund the liability. The longer-term Thirty Year US Treasury Bond is not widely marketed and is subject to more extreme price fluctuations because of its limited supply. In addition, as set forth in the Rabinovitz Reports, the annual claims payment profile for asbestos liabilities is front-loaded with most of the claims dollars being paid in the first ten years. The Treasury Note rate is thought of as a "risk free" rate. We use this instead of a corporate bond rate index, because other elements of risk, such as rejection rates, claims averages and trends, are independently captured in the Rabinovitz Reports.

Pursuant to the "so ordered" October 12, 2004 stipulation and protective order regarding expert discovery, all documents relied upon or considered by Mr. Hass in forming his opinions are being produced forthwith.

/s/ James E. Hass
James E. Hass

Exhibit I

JAMES E. HASS

HR&A

PROFESSIONAL EXPERIENCE
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2002-Present **HAMILTON, RABINOVITZ & ALSCHULER, INC., *Partner***

- For Boies, Shiller & Flexner, in the SLP Bankruptcy represented Zurich Re in an appeal of a $421 million award concerning a guarantor to a highly leveraged SPV
- Advised the International Finance Corporation on corporate governance issues concerning the largest bank in Uruguay
- Advising a large national community based non-profit on corporate governance and financial structure issues
- In the W R. Grace/Sealed Air Fraudulent Conveyance action, advised one of the creditors committees on asbestos property damage liability and fraudulent conveyance
- In the Halliburton Prepackaged Bankruptcy, advised the company on the valuation of the stock contribution to the 524(g) Trust
- In the USG bankruptcy, advising the property damage committee on the value of the property damage claims
- Advised CSFB and Development Bank of Holland on securitization of sub-prime mortgage portfolio
- Advised Development Bank of Holland on securitization of diversified portfolio of bank loans
- Advisor to PEPCO on the Mirant Corp. bankruptcy for damages and recovery analysis
- In the Owens Corning asbestos bankruptcy, advising the Futures Claim Representative on claims liabilities, trust solvency and issues related to the plan of reorganization and the 524(g) trust
- In the Quigely Prepackaged asbestos bankruptcy, advising the Futures Claim Representative on claims liabilities, trust solvency and issues related to the plan of reorganization and the 524(g) trust
- For Lehman Bros., financing advisor/workout specialist on a $650 million international project financing
- For Haynes and Boone and Winston and Strawn, provided expert analysis in a $250 million real estate financing that has led to a bankruptcy proceeding

1998-2002 **CAPITAL ADVISORS Division, MBIA-AMBAC International, Managing Director**

- Managed the international consulting business and the Latin American business development team, developed asset backed and project finance transactions

1990-1997 **HAMILTON, RABINOVITZ & ALSCHULER, INC., *Vice President and Partner***

- Advisory services in the Celotex Asbestos Bankruptcy cash flow modeling, risk analysis and 524(g) opinion
- Assisted in the analysis of options in the Dow-Corning bankruptcy for Dow Chemical
- One of the primary advisors to the Pension Benefit Guaranty Corporation for a series of major corporate restructurings
- In the Lincoln Savings civil suit, represented the investment banker for the public debt and preferred stock
- In a series of securities fraud suits for sixteen municipal bond issues, represented the underwriters on disclosure and due diligence issues
- Developed financial risk assessment models for the PBGC, World Bank, and various corporations

1989-1990	**CAPITAL MARKETS CORPORATION,** ***Senior Vice President and Principal***
1983-1988	**SHEARSON LEHMAN HUTTON** (E F HUTTON AND COMPANY) **INVESTMENT BANKING GROUP,** ***Vice President, Municipal, Mortgage and Credit Derivatives.***
1977-1980	**U.S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE,** ***Special Assistant to the Secretary***
1975-1978	**SPEAKER OF THE CALIFORNIA STATE LEGISLATURE.** ***Legislative Staff Assistant***

EDUCATION

HARVARD GRADUATE SCHOOL OF BUSINESS ADMINISTRATION MBA, 1982

UNIVERSITY OF SOUTHERN CALIFORNIA, (MPA), 1977

CLAREMONT COLLEGES, PITZER COLLEGE BA, 1975 (current Trustee)

Expert Testimony in the Last Four Years

Senior Living Properties L.L.C. vs. ZC Specialty Insurance Co (deposition and trial testimony)

W.R. Grace & Co. vs Sealed Air Corporation (deposition)

Publications in the Last Ten Years

With Christopher Bender: "The Problem of Attracting Long-Term Debt for Privately Financed Infrastructure." -- paper published in The Journal of Project Finance, Spring, 1996

With Christopher Bender: "A Eurobond Flood Warning: How Latin Bond Defaults Could Impact Infrastructure Finance" – article in Infrastructure Finance Magazine, October/November 1995

With Arnold Nachmanoff: "Filling the Gap: Major Changes Will Be Required to Finance Projects in Latin America" – article published in LatinFinance Magazine's Project Finance Supplement, June, 1995.

Exhibit II

A
CBO
REPORT

THE BUDGET AND ECONOMIC OUTLOOK: AN UPDATE

The Congress of the United States
Congressional Budget Office

Chapter Two

The Economic Outlook

The surprising economic developments since the last quarter of 1999 have led the Congressional Budget Office to strengthen its forecast of economic activity in 2000 and 2001 (see Table 2-1). CBO now expects nominal and real (inflation-adjusted) gross domestic product to be moderately higher than it anticipated in January, as a result of unexpectedly rapid growth in economic activity during the fourth quarter of 1999 and the first quarter of 2000. In addition, CBO has raised its forecast for inflation and interest rates on the basis of unforeseen increases in those measures. Economic activity now appears to have slowed in the second quarter of 2000, but even with that slackening, the economy remains strong.

The current CBO forecast assumes that growth of the nation's real GDP will average 4.9 percent this year and 3.1 percent next year. Inflation, as measured by growth in the consumer price index for all urban consumers (CPI), is expected to increase this year by almost a full percentage point, rising to 3.1 percent before tapering off slightly next year. Interest rates on three-month Treasury bills and 10-year Treasury notes are expected to climb to about 6¾ percent by 2001.

The impressive growth of economic activity during the fourth quarter of 1999 and the first quarter of 2000 has also raised CBO's projections of real GDP for 2002 through 2010. Indeed, that spurt adds to the evidence that the nation some time ago entered a "new era" of higher productivity growth that has raised the economy's productive capacity. If productivity had continued along its lower trend of the past two decades, the soaring demand of the past few quarters would have led to shortages or to an upswing in inflation. But reports of shortages have not been widespread, nor has the lag between orders and deliveries increased. And inflation, though showing some signs of picking up, remains low.

Yet judging the extent and magnitude of the increase in the trend growth of productivity is immensely difficult. Productivity rose 3.7 percent between the first quarters of 1999 and 2000, well above the 1.6 percent it averaged from 1973 through 1994. (Some of the recent growth, however, is the temporary result of the strength in demand.) CBO's current estimate of the trend of productivity growth is 2.5 percent for the past five years and 2.4 percent for the next 10 (after adjusting for the temporary effects of cyclical variations in demand). Those estimates are slightly higher than the ones incorporated in CBO's January forecast for the two periods.

The State of the Economy

The economy remains in robust health, although there are signs that growth is slowing and price and wage inflation may be heating up. The slowing largely reflects a return to a more normal pace of activity. However, some portion of the deceleration is probably the result of actions over the past year by the Federal Reserve to raise interest rates and thus tighten conditions in the nation's money markets.

Table 2-1.
CBO's Economic Projections for Calendar Years 2000-2010

	Actual 1999	Forecast 2000	Forecast 2001	Projected Annual Average 2001-2005	Projected Annual Average 2006-2010
Nominal GDP (Billions of dollars)					
July 2000	9,256	9,907	10,433	12,508[a]	15,675[b]
January 2000	9,235	9,692	10,154	12,054[a]	15,024[b]
Nominal GDP (Percentage change)					
July 2000	5.7	7.0	5.3	4.8	4.6
January 2000	5.4	5.0	4.8	4.5	4.5
Real GDP[c] (Percentage change)					
July 2000	4.2	4.9	3.1	2.7	2.7
January 2000	3.9	3.3	3.1	2.7	2.8
GDP Price Index[d] (Percentage change)					
July 2000	1.4	2.1	2.1	2.0	1.8
January 2000	1.4	1.6	1.6	1.7	1.7
Consumer Price Index[e] (Percentage change)					
July 2000	2.2	3.1	2.7	2.7	2.5
January 2000	2.2	2.5	2.4	2.5	2.5
Unemployment Rate (Percent)					
July 2000	4.2	3.8	3.7	4.3	5.1
January 2000	4.2	4.1	4.2	4.6	5.2
Three-Month Treasury Bill Rate (Percent)					
July 2000	4.6	5.9	6.7	5.3	4.8
January 2000	4.6	5.4	5.6	5.1	4.8
Ten-Year Treasury Note Rate (Percent)					
July 2000	5.6	6.5	6.8	6.0	5.7
January 2000	5.6	6.3	6.4	5.9	5.7
Tax Bases (Percentage of GDP)					
Corporate profits[f]					
July 2000	9.2	9.2	8.4	7.6	7.0
January 2000	9.1	8.6	8.2	7.7	7.2
Wages and salaries					
July 2000	48.3	48.1	48.5	48.6	48.3
January 2000	48.5	48.8	48.8	48.9	48.8

SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis; Federal Reserve Board; Department of Labor, Bureau of Labor Statistics.

NOTES: Percentage changes are year over year.

Year-by-year economic projections for calendar years 2000 through 2010 appear in Appendix D.

a Level of GDP in 2005.

b Level of GDP in 2010.

c Based on chained 1996 dollars.

d The GDP price index is virtually the same as the implicit GDP deflator.

e The consumer price index for all urban consumers.

f Corporate profits are book profits.

The Growth of Demand

Domestic demand in the fourth quarter of 1999 and the first quarter of 2000 was much stronger than many forecasters had expected. Real final sales to domestic purchasers (that is, purchases by U.S. households, governments, and businesses excluding investment in inventories) grew at an average annual rate of 6.9 percent in that period, more than a percentage point faster than the average pace over the prior four quarters. Some of that rapid growth may have been due to unseasonably warm weather during the closing months of last year and the first months of this year, which encouraged spending on construction and retail sales. Much of the growth in retail sales, however, may reflect the large gains in the stock market—the so-called wealth effect—in late 1999. The growth of spending on producers' durable equipment and software was also very strong in the first quarter of this year, climbing at an annual rate of 24.7 percent. Some of that growth is probably temporary, however, reflecting a resumption of purchases after concerns about Year 2000 (Y2K) bugs proved to be unfounded.

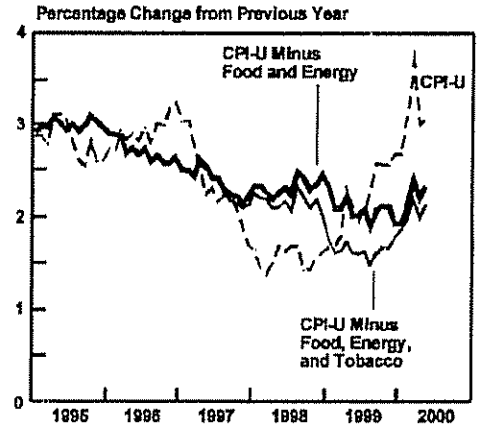
Recent data indicate a slackening in the growth of demand from its recent blistering pace, although demand remains at a high level. Retail sales, and particularly sales of durable goods, fell in both April and May of this year. Moreover, average sales of existing single-family homes (through May) were 3.6 percent below their average for the fourth quarter of 1999. And average starts of single-family homes in April and May were 3.9 percent below their average for the first quarter of 2000.

The weakness in the single-family housing market can be traced in part to the recent rise in interest rates on home mortgages. Over the past year, the interest rate on conventional 30-year mortgage loans has risen about 1.3 percentage points, reaching 8.5 percent in May.

Price and Wage Inflation

The near-term outlook for inflation in prices and wages has worsened slightly since CBO prepared its January forecast. Inflation in the price of energy, as well as in the CPI excluding prices for food, energy, and tobacco, has been higher in 2000 than forecasters anticipated (see Figure 2-1).[1] Labor compensation and the prices of imports have also risen faster than expected this year, bringing additional concern about pressure on the rate of inflation.

Figure 2-1.
Measures of Consumer Price Inflation, 1995-2000



SOURCES: Congressional Budget Office; Department of Labor, Bureau of Labor Statistics.

NOTE: The CPI-U is the consumer price index for all urban consumers.

That concern is reinforced by the recent widening of the gap between actual and potential GDP, a commonly cited measure of inflationary forces. Potential GDP is the estimated level of output that can be sustained for a substantial period without raising the inflation rate. When actual GDP is much greater than its potential level, the inflation rate tends to rise. (In other words, when demand is greater than supply, prices tend to be pushed up.) The reverse is true as well.

The rapid growth of demand in the fourth quarter of last year and the first quarter of this year has widened the GDP gap and heightened inflationary pressures. Although demand grew by nearly 7 percent

1. Extraordinary developments—legal settlements and increases in excise taxes—have sharply boosted the price of tobacco over the past two years.

during that period, estimates of the growth of potential GDP were considerably smaller, in the range of 3 percent to 4 percent. Consequently, CBO's estimate of the GDP gap rose from 1.7 percent of potential GDP in the third quarter of 1999 to 3.1 percent in the first quarter of this year. Even though the link between the GDP gap and inflation is far from perfect, the growing divide signals the danger that inflation may be heating up.

In fact, many prices now appear to be climbing more rapidly than they did last year. Categories such as medical care, housing rents, furniture, recreation, and education are all experiencing price hikes. In November of last year, for example, the rate of growth of the overall CPI and the CPI excluding food, energy, and tobacco was 2.6 percent and 1.7 percent, respectively, measured from November 1998. By May of this year, the overall CPI had risen by 3.1 percent since May 1999, and the CPI excluding food, energy, and tobacco had climbed by 2.1 percent. (The price index for personal consumption expenditures registered similar increases.) Inflation as measured by the overall CPI may fall from current rates as energy prices recede, but the underlying rate seems poised to escalate further. (The underlying rate traditionally excludes food and energy prices.)

Labor compensation has also been growing more rapidly of late, bringing concerns that rising production costs will show up in prices. Total compensation (wages and salaries, and benefits) for private-industry workers, as measured by the employment cost index, rose by 4.6 percent for the year ending in March 2000, up from annual growth of 3.0 percent for the year ending in March 1999. With productivity growing by 3.7 percent over the past year, the growth in unit labor costs remains modest but is likely to pick up sharply if productivity growth slows.

In comparison with past months, import prices are doing less to keep inflation down. Prices for imported goods (excluding petroleum and computers) have grown at an average rate of 1.0 percent since mid-1999, after falling by an average of 1.7 percent during 1997, 1998, and the first half of 1999. Although not a major factor thus far, the recent strength in foreign economies may exacerbate the pressures on U.S. import prices in the coming months.

Petroleum prices have continued to rise rapidly this year, but not as rapidly as in 1999. The price of crude oil climbed by 27 percent between December 1999 and May 2000, after soaring 131 percent last year from a very depressed level. Consumer gasoline prices have risen as well, up by 28 percent through May of this year on top of a 30 percent jump last year. Nevertheless, analysts expect crude oil prices to be lower at the end of this year than they were in May.

Financial Developments

The recent strength of the economy and actions by the Federal Reserve have tightened conditions in financial markets over the past year. To help slow what it viewed as an overheating economy, the Federal Reserve raised its target for the federal funds interest rate (the overnight rate that banks charge one another) from 5.25 percent in August 1999 to 6.50 percent in May 2000. In addition, the interest rate on three-month Treasury bills rose from 4.73 percent in September to 5.92 percent in May.

Interest rates on long-term debt have also moved up. The rate on 10-year Treasury notes rose from 5.92 percent in September 1999 to 6.44 percent in May. Over the same period, the interest rate on high-grade, Aaa-rated corporate bonds went from 7.39 percent to 7.99 percent; lower-grade, Baa-rated bonds rose a little more, from 8.20 percent to 8.90 percent. The interest rate on conventional 30-year home mortgages climbed from 7.82 percent in September to 8.52 percent in May.[2]

In tandem with the rise in interest rates, stock prices have slipped. Although movements in stock prices are difficult to explain fully, one important factor may be the market's expectation that actions by the Federal Reserve to contain inflation will slow future corporate earnings. Higher interest rates, moreover, lower the prices of assets (like stocks) whose values depend on future streams of income. After recording

2. The rate on 30-year Treasury bonds increased only 8 basis points between September 1999 and May 2000. (A basis point is a hundredth of a percentage point.) That small uptick may reflect, in part, the smaller supply of 30-year Treasury debt: Because of the federal surplus, the Treasury has both reduced its sales of 30-year debt and repurchased some of it.

strong gains in 1999, the major stock price indexes were lower by the end of May 2000 than at the end of last year; nevertheless, they were still generally higher than they were a year ago. In particular, the NASDAQ composite index, which comprises a large number of "new economy" stocks, was about 38 percent higher.

CBO's Economic Forecast for 2000 and 2001

Through the end of 2001, CBO expects the growth of real GDP to slow and inflation in consumer prices to rise (see Table 2-2). Continued high levels of demand this year, combined with signs of higher inflation, are likely to prompt the Federal Reserve to raise the federal funds rate further—in mid-June, financial markets were expecting the rate to climb to about 7 percent by early 2001. Other interest rates are likely to follow suit, which would help slow the economy next year and dampen the growth of inflation.

Higher interest rates could be a drag on the economy through several channels. CBO anticipates a slowdown in fixed investment, especially in residential construction. At the same time, with accelerating interest rates and faster growth in labor compensation holding down profits, stock prices are unlikely to continue increasing at the rate of the past several years. Consequently, the boost to consumer spending from higher stock prices should gradually diminish. Higher interest rates will also limit the demand for U.S. goods and services by helping keep the exchange value of the dollar strong.

Table 2-2.
The CBO Forecast for 2000 and 2001

	Actual 1999	Forecast 2000	Forecast 2001
	Fourth Quarter to Fourth Quarter (Percentage change)		
Nominal GDP	6.3	6.3	5.1
Real GDP[a]	4.6	4.0	2.9
GDP Price Index[b]	1.6	2.2	2.1
Consumer Price Index[c]			
Overall	2.6	2.9	2.9
Excluding food and energy	2.1	2.5	2.9
	Calendar Year Average (Percent)		
Real GDP[a]	4.2	4.9	3.1
Unemployment Rate	4.2	3.8	3.7
Three-Month Treasury Bill Rate	4.6	5.9	6.7
Ten-Year Treasury Note Rate	5.6	6.5	6.8

SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis; Federal Reserve Board; Department of Labor, Bureau of Labor Statistics.

a. Based on chained 1996 dollars.

b. The GDP price index is virtually the same as the implicit GDP deflator.

c. The consumer price index for all urban consumers.

As a result of those factors, CBO expects real GDP growth to slow to 3¼ percent during the second half of this year, down from its average of 4¾ percent during the 1997-1999 period and 6.4 percent in the last quarter of 1999 and the first quarter of 2000. During 2001, growth in real GDP is expected to fall further, to 2.9 percent.

Although GDP growth is expected to slow, CBO estimates that the GDP gap will remain large. Consequently, the underlying rate of inflation is likely to increase further during this year and next. Over the four quarters ending with the first quarter of 2000, the underlying rate of CPI inflation averaged 2.1 percent. By the end of 2001, CBO expects that rate to reach

Table 2-3.
CBO's Economic Projections for Fiscal Years 2000-2010

	Actual 1999	Forecast 2000	Forecast 2001	Projected Annual Average 2001-2005	Projected Annual Average 2006-2010
Nominal GDP (Billions of dollars)	9,116	9,758	10,303	12,370[a]	15,495[b]
Nominal GDP (Percentage change)	5.6	7.0	5.6	4.9	4.6
Real GDP[c] (Percentage change)	4.2	5.1	3.4	2.8	2.7
GDP Price Index[d] (Percentage change)	1.3	1.9	2.2	2.0	1.8
Consumer Price Index[e] (Percentage change)	1.9	3.0	2.7	2.7	2.5
Unemployment Rate (Percent)	4.3	3.9	3.7	4.3	5.1
Three-Month Treasury Bill Rate (Percent)	4.4	5.6	6.6	5.4	4.8
Ten-Year Treasury Note Rate (Percent)	5.3	6.4	6.8	6.1	5.7
Tax Bases (Percentage of GDP)					
Corporate profits[f]	9.0	9.3	8.7	7.7	7.0
Wages and salaries	48.3	48.1	48.4	48.6	48.4

SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis; Federal Reserve Board; Department of Labor, Bureau of Labor Statistics.

NOTES: Percentage changes are year over year.

Year-by-year economic projections for fiscal years 2000 through 2010 appear in Appendix D.

a. Level of GDP in 2005.

b. Level of GDP in 2010.

c. Based on chained 1996 dollars.

d. The GDP price index is virtually the same as the implicit GDP deflator.

e. The consumer price index for all urban consumers.

f. Corporate profits are book profits.

3.0 percent. The tight labor market has already pushed up the growth rate of labor compensation, and that pressure is expected to persist. At the same time, the growth of labor productivity is likely to fall as the economy slows, dropping from the 3½ percent rate of the past two years to about 2¼ percent. Although that rate is high compared with growth rates before the late 1990s, such a slowdown could still boost unit labor costs in the short run.

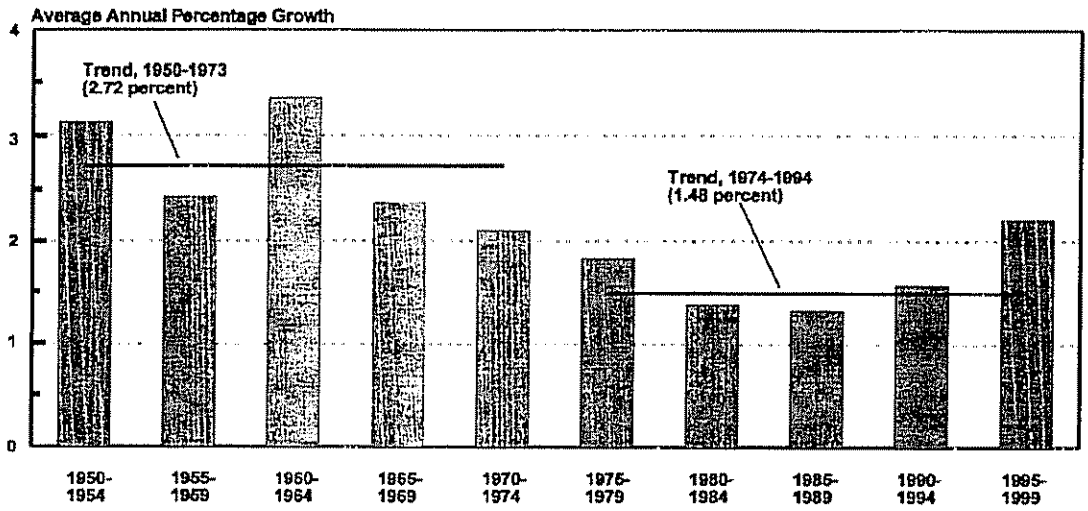
The Outlook Beyond 2001

CBO does not forecast the ups and downs of the economy more than two years ahead. Its projections of GDP beyond that period, for 2002 through 2010, simply extend historical patterns in the factors that underlie the growth of potential GDP—factors such as the growth of the labor force, the growth of productivity, and the rate of national saving.

In CBO's current projections, the major changes from January are moderately higher levels of real and nominal GDP (see Table 2-1 on page 24 and Table 2-3). The projected level of real GDP is higher because CBO now assumes that a larger share of GDP growth over the past five years has been permanent rather than cyclical; that assumption is reflected in CBO's new, higher estimate of the level of potential GDP. However, the average growth rate of potential GDP after 2001 is 3 percent, the same rate as in CBO's January projection.

The average growth rate of real GDP in CBO's new projection is slightly lower than in its January estimate. That is because the gap between actual and potential GDP is larger at the beginning of the projection period than it was in January, in spite of the upward revision CBO made to potential GDP. (Real GDP must grow more slowly than potential GDP after 2001 to bring GDP back to its potential level—which is then consistent with CBO's projection of a constant inflation rate.) Nominal GDP is also higher now than in CBO's January projection because the current estimate of inflation in the GDP price index is significantly higher from 2000 to 2003 and slightly higher thereafter.

Figure 2-2.
Labor Productivity in the Nonfarm Business Sector



SOURCES: Congressional Budget Office; Department of Labor, Bureau of Labor Statistics.

Change in CBO's Estimate of Potential GDP

The extraordinary performance of the U.S. economy in the second half of the 1990s—specifically, the strong growth of output combined with low inflation—has convinced many analysts that the economy has entered a new era of greater productivity (see Figure 2-2 on page 29). Belief in such a shift was reinforced by the economy's ability to absorb the unusually rapid growth of demand during the last quarter of 1999 and the first quarter of 2000 without substantial shortages and a significant increase in inflation. Those circumstances suggest that the productive capacity of the economy (potential GDP) was greater than previously thought. Further support comes from the unemployment rate, which dropped by less than would have been expected had potential GDP followed its prior trend. Faced with that evidence, both CBO and private-sector economists have now incorporated a higher level of potential GDP in their current forecasts.

The average growth rate of potential GDP after 2001, however, is unchanged from CBO's January estimate of 3 percent. The reason is that although CBO has assumed higher trend growth in productivity, the effect of that increase has been largely offset by lower projected growth in the labor force.

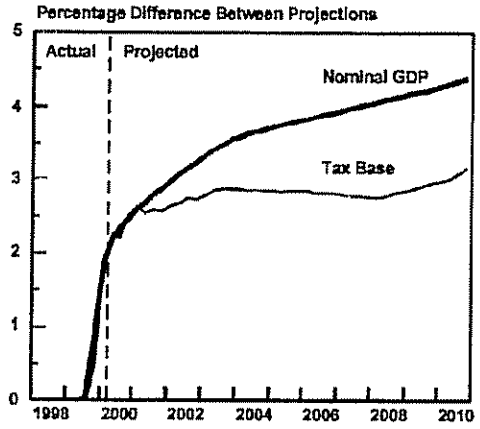
Revisions to Trend Growth in Productivity. A tremendous amount of uncertainty exists about whether the recent increase in the trend growth of productivity is permanent or temporary. CBO's January projections reflected the "new era" in two ways: they incorporated the very rapid growth of productivity in the production of computers that has driven down computer prices, and they took into account the recent high rates of business investment in computers and related equipment.[3] But those factors do not suffice to explain the economy's performance since 1995. CBO has therefore added about a quarter of a percentage point to its estimate of the trend growth rate of productivity (specifically, total factor productivity in the nonfarm business sector) in the second half of the 1990s. That addition boosts the estimated level of potential GDP by about 1 percent in 2000. Because of uncertainty about how long the higher productivity growth will last, CBO added only half as much to the productivity trend between 2000 and 2010.

Revision to Labor Force Growth. CBO has revised downward its projection of growth in the labor force after analyzing participation rates (as described in Appendix A). In particular, it appears that CBO's previous assumptions about the participation rates for some older age groups were too high. Reducing labor force growth between 2000 and 2010 subtracts about a tenth of a percentage point per year from the growth of potential GDP.

Change in CBO's Projections of Inflation

After climbing slightly this year and next, CBO's projection of CPI inflation settles down by 2004 to 2.5 percent, the same rate that CBO projected in January. Ultimately, the inflation rate is determined by monetary policy, and rates of inflation above 2½ percent are likely to trigger action by the Federal Reserve to reduce inflationary forces.

Figure 2-3.
Percentage Difference Between CBO's July and January 2000 Economic Projections



SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis

3. See Appendix A in Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2001-2010* (January 2000).

CBO has raised its projection of growth in the GDP price index slightly above its January projection because it now expects a smaller decline over the next 10 years in prices for computers. The change was made in the wake of recent reports suggesting that semiconductor prices will remain firm for several years until new production capacity is put in place.

Change in CBO's Tax-Base Projections

CBO's projections of taxes are closely connected to projections of economic activity and national income, as measured by the national income and product accounts, or NIPAs. Wage and salary disbursements and corporate profits are particularly important because they generate the most revenue. CBO has revised upward its projection of the NIPA measure for that "high tax" tax base (see Figure 2-3). However, the change is less than that in nominal GDP because in addition, CBO has substantially raised its projection of business fixed investment and that change increases deductions for corporate depreciation.

Comparison of Forecasts

The strong performance of the economy late last year and early this year has caused other forecasters besides CBO to raise their projections of GDP for 2000 and 2001 (see Table 2-4). In January, for example, the *Blue Chip* consensus of economic forecasts for the last quarter of 1999 and the first quarter of this year expected real GDP to grow at an average annual rate of 3.8 percent. (Many forecasters thought that GDP growth was stimulated slightly during 1999 by Y2K preparations and that it would slow in 2000 when those activities ceased.) In fact, real GDP growth averaged 6.4 percent for the fourth and first quarters. As a consequence, the average annual growth rate of real GDP for 2000 and 2001 in the *Blue Chip* consensus forecast increased from 3.3 percent in January to 4.1 percent in June.

Forecasters generally have also raised their estimates of inflation. Those hikes are based on larger-than-expected increases in prices and labor compensa-

Table 2-4.
Changes in Five Forecasters' Estimates for the 2000-2001 Period (In percent)

	Average Growth of Real GDP		Average Growth of GDP Price Index		Average Three-Month Treasury Bill Rate	
	January 2000 Forecast	June 2000 Forecast	January 2000 Forecast	June 2000 Forecast	January 2000 Forecast	June 2000 Forecast
Blue Chip	3.3	4.1	1.8	2.1	5.6	6.2
Standard & Poor's *DRI*	3.4	3.9	1.4	2.0	5.4	5.9
Macroeconomic Advisers	3.2	3.8	2.0	2.2	5.6	6.3
Administration	3.0[a]	4.0	1.8[a]	2.0	5.2[a]	6.0
CBO	3.2	4.0[b]	1.6	2.1[b]	5.5	6.3[b]

SOURCES: Congressional Budget Office; Aspen Publishers, Inc. *Blue Chip Economic Indicators* (January 10, 2000, and June 10, 2000); Standard & Poor's *DRI. The U.S. Economy* (January and June 2000); Macroeconomic Advisers, L.L.C. *Macroeconomic Advisers' Economic Outlook* (January 15, 2000, and June 15, 2000); *Budget of the United States Government, Fiscal Year 2001*; and Office of Management and Budget. *Mid-Session Review: Budget of the United States Government, Fiscal Year 2001* (June 26, 2000).

a. From the Administration's February forecast.

b. From CBO's July forecast.

Table 2-5.
Comparison of CBO and *Blue Chip* Forecasts for 2000 and 2001 (By calendar year, in percent)

	Actual 1999	Forecast 2000	Forecast 2001
Growth of Nominal GDP	5.7		
Blue Chip high 10		7.4	6.0
Blue Chip consensus		7.0	5.4
CBO		7.0	5.3
Blue Chip low 10		6.6	4.7
Growth of Real GDP	4.2		
Blue Chip high 10		5.1	4.0
Blue Chip consensus		4.8	3.3
CBO		4.9	3.1
Blue Chip low 10		4.5	2.7
Growth of GDP Price Index[a]	1.4		
Blue Chip high 10		2.3	2.6
Blue Chip consensus		2.1	2.1
CBO		2.1	2.1
Blue Chip low 10		1.9	1.5
Growth of CPI[b]	2.2		
Blue Chip high 10		3.3	3.1
Blue Chip consensus		3.1	2.6
CBO		3.1	2.7
Blue Chip low 10		2.7	2.0
Unemployment Rate	4.2		
Blue Chip high 10		4.2	4.4
Blue Chip consensus		4.0	4.1
CBO		3.8	3.7
Blue Chip low 10		3.9	3.8
Three-Month Treasury Bill Rate	4.6		
Blue Chip high 10		6.3	6.8
Blue Chip consensus		6.1	6.3
CBO		5.9	6.7
Blue Chip low 10		5.8	5.7
Ten-Year Treasury Note Rate	5.6		
Blue Chip high 10		6.7	6.9
Blue Chip consensus		6.4	6.4
CBO		6.5	6.8
Blue Chip low 10		6.1	6.0

SOURCES: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis; Federal Reserve Board; Department of Labor, Bureau of Labor Statistics; Aspen Publishers, Inc. *Blue Chip Economic Indicators* (June 10, 2000)

NOTE: The *Blue Chip* high 10 is the average of the 10 highest *Blue Chip* forecasts; the *Blue Chip* consensus is the average of the nearly 50 individual *Blue Chip* forecasts; and the *Blue Chip* low 10 is the average of the 10 lowest *Blue Chip* forecasts.

a. The GDP price index is virtually the same as the implicit GDP deflator.

b. The consumer price index for all urban consumers.

Table 2-6.
Comparison of CBO's and the Administration's Economic Projections for Calendar Years 2000-2010

	Actual 1999	Forecast 2000	Forecast 2001	Projected Annual Average 2001-2005	Projected Annual Average 2006-2010
Nominal GDP (Billions of dollars)					
CBO	9,256	9,907	10,433	12,508[a]	15,675[b]
Administration		9,886	10,407	12,660[a]	16,079[b]
Nominal GDP (Percentage change)					
CBO	5.7	7.0	5.3	4.8	4.6
Administration		6.8	5.3	5.1	4.9
Real GDP[c] (Percentage change)					
CBO	4.2	4.9	3.1	2.7	2.7
Administration		4.8	3.2	3.0	2.8
GDP Price Index[d] (Percentage change)					
CBO	1.4	2.1	2.1	2.0	1.8
Administration		1.9	2.0	2.0	2.0
Consumer Price Index[e] (Percentage change)					
CBO	2.2	3.1	2.7	2.7	2.5
Administration		3.3	2.6	2.6	2.6
Unemployment Rate (Percent)					
CBO	4.2	3.8	3.7	4.3	5.1
Administration		4.1	4.1	4.5	5.1
Three-Month Treasury Bill Rate (Percent)					
CBO	4.6	5.9	6.7	5.3	4.8
Administration		5.8	6.3	5.9	5.8
Ten-Year Treasury Note Rate (Percent)					
CBO	5.6	6.5	6.8	6.0	5.7
Administration		6.3	6.3	6.3	6.3
Tax Bases (Percentage of GDP)					
Corporate profits[f]					
CBO	9.2	9.2	8.4	7.6	7.0
Administration		8.9	8.2	8.1	7.5
Wages and salaries					
CBO	48.3	48.1	48.5	48.6	48.3
Administration		48.2	48.4	48.1	47.8

SOURCES: Congressional Budget Office; Office of Management and Budget, *Mid-Session Review: Budget of the United States Government: Fiscal Year 2001* (June 26, 2000).

NOTES: Percentage changes are year over year.

Year-by-year economic projections for calendar years 2000 through 2010 appear in Appendix D.

a. Level of GDP in 2005.

b. Level of GDP in 2010.

c. Based on chained 1996 dollars.

d. The GDP price index is virtually the same as the implicit GDP deflator.

e. The consumer price index for all urban consumers.

f. Corporate profits are book profits.

tion during the first part of this year. In addition, forecasts of interest rates have moved up in response to the stronger-than-expected growth in GDP and the prospect of higher inflation and more aggressive tightening of monetary policy by the Federal Reserve.

CBO's current forecast is very similar to the *Blue Chip* consensus forecast published in June of this year (see Table 2-5). There are three major differences: CBO expects slightly lower unemployment rates than does the consensus both this year and next, it anticipates lower interest rates on three-month Treasury bills this year but higher rates next year; and it expects higher interest rates on 10-year Treasury notes in both years. CBO's forecasts of the growth of real and nominal GDP and of the CPI are virtually identical to those of the consensus in both 2000 and 2001.

The Administration has recently updated its economic outlook, and its current forecast and projections are broadly similar to those of CBO (see Table 2-6). CBO assumes slightly slower growth of real GDP after 2000 and mildly higher inflation, and by 2010, CBO's projection of nominal GDP is 2½ percent below the Administration's. For the "high tax" tax bases, CBO assumes a share of GDP that is very close to that of the Administration. In dollars, therefore, CBO's tax-base projection is below the Administration's by about the same proportion as the projection of GDP. Unemployment rates are lower in CBO's projections than in the Administration's until the latter part of the projection period, when the two estimates both average 5.1 percent. CBO forecasts higher interest rates than does the Administration for 2000 and 2001, but in the medium term, the Administration assumes that short-term interest rates will average almost a percentage point more than CBO's assumptions.

Potential Sources of Uncertainty

This update reflects CBO's view of cyclical developments over the near term (2000 to 2001) and likely trends in the economy over the medium term (from 2002 to 2010). But CBO's 10-year projections, always uncertain to some degree, are even more tentative than usual, especially for the last five years of the projection period.[4] The reason is that the increased growth of productivity that CBO is now incorporating in its estimates is based on data only for the past five years. That limited span is insufficient to determine whether productivity has, indeed, shifted to a higher level, moved to a faster trend rate of growth, or temporarily deviated from underlying trends. As for CBO's forecast for the near term, those estimates could miss the mark for other reasons, some of which imply more optimistic outcomes and some more pessimistic results than the forecast indicates.

On the optimistic side, the economy might be able to expand faster than CBO expects without a significant increase in inflation for some time to come. Two conditions would be necessary: the productivity surge of recent years would have to reflect a substantially greater underlying trend in productivity growth than CBO has so far estimated, and the rate of growth of real compensation per hour would have to remain below the rate of growth of labor productivity. Under such circumstances, the Federal Reserve would not feel the need to tighten monetary policy. In addition, the growth of profits, the prices of stocks, and the level of investment could all remain strong, supporting robust economic growth.

But what if the increase that CBO is assuming for the trend growth of productivity is too high? In that case, inflationary pressures and the outlook for profits may be worse than CBO is forecasting.

Another major uncertainty is the rate of growth of labor compensation. It may remain subdued, or it may increase more rapidly than CBO expects because of extremely tight labor markets and rising costs for health care. CBO's forecast assumes that real growth in compensation is only slightly greater than productivity growth for a few years. If compensation rises faster than productivity, inflation may increase more than CBO has anticipated.

An unwinding of the factors that have promoted strong economic growth with low inflation may also weaken the stock market. A number of observers be-

4. Appendix B discusses CBO's record of economic forecasts.

lieve that stocks are substantially overvalued: a drop in corporate profits, coupled with higher inflation and interest rates in the second half of this year, could weaken the market severely. A significant correction could produce outflows of capital from the United States to foreign markets and slower growth in consumer spending and business investment than CBO now envisions.

Some analysts are also concerned that the U.S. trade deficit is unsustainably high and that its resolution might involve a sharp decline in the dollar and a rise in the rate of inflation. The trade deficit is likely to shrink as the growth of demand in the United States returns to more normal levels. However, to the extent that the attractiveness of investing in the United States derives from the strength of the stock market, and particularly the strength of "new economy" stocks, a sharp reduction in U.S. stock prices could precipitate a withdrawal of capital from the United States. That would weaken the exchange value of the dollar and drive prices higher on U.S. imports—which in turn could spur the Federal Reserve to tighten monetary conditions.

Alternatively, a more traditional boom-bust scenario could trigger a recession. If economic growth (both at home and abroad) was greater than anticipated over the next few years and boosted inflation, the Federal Reserve might raise interest rates aggressively, which could precipitate a recession by 2003. (CBO examined that scenario in January. It found that an "average" recession would weaken the budget outlook but not by enough, on its own, to push the budget into deficit—even during the years of recession.)[5]

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5. See Congressional Budget Office, *The Budget and Economic Outlook*, Box 5-1, p. 104.