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Briefing Paper

The New Economy Goes Bust:

What the Record Shows

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EXECUTIVE SUMMARY

This paper examines the record of the economy in the last business cycle. It compares the economy's performance in this cycle with prior business cycles and also examines the impact of the major policy initiatives of the last decade. The paper notes that:

* Even the most cursory review of the data shows that the "new economy" was mostly hype. For the business cycle as a whole, the average GDP growth rate of 3.1 percent was much lower than in the fifties and sixties, and even slightly below the pace of the seventies. Real wage growth averaged less than half a percentage point annually for a typical worker.

* The economy's performance in the second half of the decade was considerably better, but much of the acceleration in growth was simply due to increased depreciation—the output needed to replace worn out or obsolete equipment and software. Net domestic product (NDP)—the Commerce Department's measure of usable output—grew at a rate that was nearly half a percentage point less than the growth rate of GDP in the second half of the decade. In the boom years of the late nineties, NDP grew only slightly faster than it did in the seventies, and far below the rates of the fifties and sixties.

* The before-tax profit share of corporate income rose from the peak of the previous cycle, reversing a 40-year decline. The after-tax profit share of corporate income reached a post-war high.

* The unemployment rate fell far below the widely accepted estimates of the non-accelerating inflation rate of unemployment (NAIRU). In spite of more than seven years of below-NAIRU unemployment rates, the inflation rate has been remarkably stable. Prior to 1994, most economists predicted that such low rates of unemployment would lead to a substantial increase in the rate of inflation. This experience is a decisive refutation of the NAIRU theory.

* The deficit and debt reduction of the nineties led to only modest reductions in real interest rates. The average real interest rate on government bonds was 1.3 percentage points less in the late nineties than in the late eighties. The reduction in real interest rates on mortgages and high grade corporate bonds in this period was just 0.8 percentage points, relative to their late eighties levels.

* The reduction in interest rates had only a modest impact on housing which increased by less than 0.1 percentage point, measured as a share of GDP compared to the peak of the previous cycle in 1989. Investment spending increased by 1.9 percentage points, from 11.2 percent of GDP in 1989 to 13.1 percent of GDP in 2000.

* The biggest source of increased demand was a stock market-driven consumption boom. The consumption share of GDP rose by 2.6 percentage points from 1989 to 2000. This rise in consumption was associated with a falloff in the savings rate of approximately 7 percentage points from its 1989 level. Research from the Federal Reserve Board indicates that people, especially the upper-income households that hold the vast majority of all stocks, chose not to

save, believing that their gains from the stock market bubble were permanent, and that stock prices might even continue to rise at the extraordinary pace of the late nineties.

* Due to the consumption boom, the share of output going to the investment components of GDP, (investment plus net exports), actually declined slightly in this cycle as compared to the eighties cycle. At the peak of the eighties cycle in 1989, 9.7 percent of GDP was going to these investment components. In 2000, just 9.4 percent of GDP was going to these two components. By comparison, in 1979, at the peak of the seventies cycle, the investment components comprised 12.0 percent of GDP.

* At its peak in the first quarter of 2001, the ratio of the price of all corporate equities to after-tax corporate profits was over 31 to 1. This is more than twice the historic average of less than 15 to 1. This record price to earnings ratio occurred at a time when earnings were at a cyclical high. At the time, the Congressional Budget Office projected that real profit growth would average -0.4 percent annually over the next decade. This bubble implied more than $9 trillion in illusory wealth compared to a situation in which price-to-earnings ratios were near their historic levels.

* The late nineties also saw a large run-up in the value of the dollar, which led to a substantial increase in the size of the U.S. trade deficit. At the peak of the cycle in 2000, the trade deficit reached 3.7 percent of GDP, while the nation's net foreign borrowing hit $440 billion. Deficits of this magnitude are clearly not sustainable. At this rate of growth, net foreign indebtedness will exceed 60 percent of GDP by the end of the decade and 100 percent of GDP by 2019. The large current account deficits of last few years have allowed the United States to consume substantially more than it produced.

* To reverse the trade deficit, it will be necessary for the dollar to decline substantially against other major currencies. This will lead to inflation, which will cause real wages to rise less rapidly than productivity growth (assuming no shift in income shares). The high dollar and the large current account deficits of the late nineties effectively borrowed wage growth from the future—allowing faster real wage growth in the late nineties, at the expense of slower wage growth in future years, when the trade deficit will be corrected.

* The falloff in demand due to the collapse of the stock market bubble could exceed $400 billion. Most of this will be reduced consumption, as the savings rate returns to more normal levels. Savings rates may actually move above their historic levels, as households attempt to make up for stock market losses and pay off debt built up in the nineties. The collapse of the bubble in tech stocks will reduce investment by $50-$100 billion. A drop in demand of this magnitude implies that a considerably larger stimulus than the ones currently being debated by Congress may be needed to restore the economy to full employment.

* The growth path of the late nineties, which depended on a stock market bubble and rapidly growing foreign debt, was less sustainable than the deficit-driven growth path of the eighties. It was a serious policy error to allow the economy to move in this direction for so long. While moving away from the late nineties growth path may prove painful --especially the fall in purchasing power associated with the decline of the dollar—there is no alternative course. This

pain will be minimized if the economy moves back to a path of sustainable growth as soon as possible. The impact of this adjustment on most of the population can also be limited if some of the upward redistribution of the prior two decades is reversed.

INTRODUCTION

The longest expansion in the history of the United States appears to have ended earlier this year. This upturn was extraordinary in many respects other than its length. While the first half of the expansion was characterized by rather mediocre economic statistics, the period from the fourth quarter of 1995 to the end of 2000 was the economy's best sustained economic performance since 1973. Many economists and policy analysts believed that the economy had moved to a new period of qualitatively more rapid growth. The trend toward rising wage inequality, which had characterized the economy since 1979, was at least partially reversed during this period, as workers at all income levels experienced rising real wages. This period also saw the stock market soar to unprecedented levels, as the price to earnings ratio of the market as a whole rose to more than twice its historic average. For these and other reasons, it is worth looking more carefully at the nature of the recent expansion.

This paper provides a brief assessment of the economy's performance over the last decade. The first section below presents the economy's record on some of the key measures in the last business cycle and compares it to previous cycles. The second section examines the dynamics of this cycle and the extent to which the conventional view—that the shift from government deficits to surpluses lowered interest rates, and sparked an investment boom—adequately explains the economy's performance. The conclusion summarizes this discussion and presents some of the implications for policy going forward.

THE MILLENNIAL BOOM—HOW GOOD WAS IT?

Even the most cursory review of the data shows that the "new economy" was mostly hype. For the business cycle as a whole, the average GDP growth rate of 3.1 percent was much lower than in the fifties and sixties, and even slightly below the pace of the seventies, as indicated in table 1 below. The nineties cycle only slightly edges out the eighties cycle, which takes last place in the growth category. Annual productivity growth in the nineties cycle was approximately the same as in the seventies, and nearly a full percentage point below the growth rate in the quarter century following World War II. The nineties cycle ties with the 1948-60 period for the slowest rate of job growth. Hourly compensation grew slightly faster than in the seventies, but much slower than in the fifties or sixties. However, due to increasing wage

inequality, most of the wage gains went to high-end workers. The average real wage of production workers and the median wage both grew at approximately 0.5 percent annually, slower than the 0.8 percent growth rate in the seventies, and far below the 1.9 percent growth rate of the sixties. In short, the nineties only appears good when compared to the eighties; otherwise it does not appear to have been an especially successful economic performance.

Table 1: Economic Performance in Post-War Business Cycles
Average Annual Real Growth Rates

Business Cycle	GDP	Prod-uctivity	Employ-ment	Compen-sation	Average Wages	Median Wages	Un. Rate (Level)
48-60	3.67%	2.85%	1.68%	3.20%	NA	NA	4.1%
60-69	4.37	2.83	2.76	2.45	1.9	NA	3.5
69-80	3.25	1.95	2.24	1.27	0.78	NA	4.9
80-90	2.94	1.28	1.83	0.71	-0.47	0	5.2
90-01	3.11	1.98	1.72	1.39	0.58	0.46	4.0
90-95	2.42	1.47	1.34	0.51	-0.25	-0.39	5.6
95-01	3.78	2.47	2.07	2.23	1.41	1.5	4.0

Source: Bureau of Economic Analysis, Bureau of Labor Statistics and author's calculations. See appendix.

It is possible to tell a more positive story by focusing exclusively on the second half of the cycle, when the new economy story really took hold. GDP growth averaged 3.8 percent annually from the fourth quarter of 1995 to the end of the expansion in the second quarter of 2001. This growth rate would still fall below the 4.4 percent rate of the sixties, but would be slightly above the 3.7 percent rate of the fifties and well above the 3.3 percent rate of the seventies. Annual productivity growth in this period averaged almost 2.5 percent. This is more than a half percentage point above the rate of productivity growth in the seventies and nearly twice the growth in the eighties, although it is still below the 2.8-2.9 percent productivity growth rates between 1948-1969. Real wage growth also picked up during this period, with average hourly compensation rising at a real rate of 2.2 percent annually. These wage gains were widely shared, with the real wage for production workers rising at an annual rate of 1.4 percent, and the real median wage rising at a 1.5 percent annual rate. In addition, the unemployment rate sunk to its lowest point in thirty years, bottoming out at 3.9 percent for several months in 2000.

This more positive picture from the second half of the cycle is misleading for several reasons. First, part of the reason that the second half of the business cycle looks good is that the first half was so bad. GDP and employment growth in the first half of the cycle were even worse than in the eighties and productivity growth was only slightly better. The extraordinarily bad performance of the first half of the decade meant that the economy had some room to expand just to move back to the weak trend growth of the seventies and eighties. In other words, it would

have been reasonable to expect some upturn in the second half of the decade just to even out the poor performance of the first half.

The second reason that the picture from the second half of the cycle can be somewhat misleading is that depreciation now takes up a much larger share of output, due to the growing importance of computers and software, which quickly become obsolete. This issue—which is somewhat technical—is very important in understanding how growth affects living standards.

The most basic measure of economic output is gross domestic product (GDP), which includes all expenditures for investment, regardless of whether they are used to add to the capital stock, or simply to replace worn out or obsolete equipment and software. The portion of investment spending that is used to replace worn out and obsolete equipment—depreciation—while essential for maintaining the level of output, does not increase the economy's capacities in any way. If GDP were to grow, simply as a result of the fact that more money was being spent on depreciation, it would not mean that anyone had been made better off. There would be no more money available for consumption. Nor would there be any more output available in future periods, because the size of the capital stock would not have increased.

In this scenario, since equipment is wearing out more quickly, it is necessary to run harder just to stay in the same place. The economy must devote more resources every year to replace worn out and obsolete equipment, just to keep the capital stock intact. The additional resources used to replace this equipment appear in the GDP accounts, but it does not imply that anyone is better off.

The Commerce Department does calculate a measure of output—net domestic product (NDP)—which excludes the portion of output that is used to replace worn out and obsolete equipment. This gives a better measure of the extent to which living standards are improving through time. This measure appears in the second column of table 2. The shift from a gross measure of output to a net measure makes the nineties cycle look considerably worse, with the data for the second half of the decade being most affected.

Table 2: Economic Performance in Post-War Business Cycles (gross and net)
Average Annual Growth Rates

Business Cycle	GDP	NDP	Productivity	Net Productivity	Adj. NDP	Adj. Net Productivity
48-60	3.67%	3.70%	2.85%	2.88%	3.90%	3.08%
60-69	4.37	4.36	2.83	2.82	4.56%	3.02
69-80	3.25	3.13	1.95	1.83	3.29	1.99
80-90	2.94	2.74	1.28	1.08	2.74	1.08
90-01	3.11	2.78	1.98	1.65	2.78	1.65
90-95	2.42	2.21	1.47	1.26	2.21	1.26
95-01	3.78	3.32	2.47	2.01	3.32	2.01

Source: Bureau of Economic Analysis, Bureau of Labor Statistics and author's calculations. See appendix.

Using NDP as the measure of output, the average growth rate in the nineties cycle falls to less than 2.8 percent, just 0.04 percentage points above the growth rate in the eighties cycle. NDP growth in the nineties was more than 0.3 percentage points lower than in the seventies, and more than 1.5 percentage points below the sixties growth rate. Even the second half of the nineties cycle does not look especially strong by the net measure. The rate of growth of NDP during this period was less than 0.2 percentage points above the seventies growth rate and more than a full percentage point below the growth rate of the sixties.

The fourth column shows data for net productivity growth which were constructed by subtracting the gap between average GDP and NDP growth from the reported rate of productivity growth.[2] By this measure, productivity growth in the nineties is still better than in the eighties, but it is notably worse than in any other decade, trailing the fifties and sixties by more than a full percentage point. Even the second half of the nineties cycle does not look very impressive by this net productivity measure. The 2.01 percent growth rate is a considerable upturn from the 1.08 rate of the eighties, but it is more than 0.8 percentage points less than the rate of net productivity growth in the fifties and sixties.

There is one other technical issue worth noting in assessing the economy's performance in the last business cycle. The Bureau of Labor Statistics (BLS) revised the data on inflation for the years from 1978 to 1998, which had the effect of significantly lowering the reported rate of inflation over this period (Stewart and Reed, 1999). The lower rate of inflation was incorporated into the Commerce Department's measure of output growth, which had the effect of raising the reported rate of real output growth. Since data was not available for years prior to 1978, the BLS made no effort to revise the CPI for these years. Nonetheless, there are reasons for believing that the CPI had some of the same biases in years prior to 1978 as in years after 1978.

The most obvious source of bias in this earlier period, which was eliminated in the revised data for years after 1978, was lower level substitution bias. In years after 1978, the inflation rate was calculated using geometric means at the lowest level of aggregation, as a way of eliminating lower level substitution bias. BLS research showed that the use of geometric means lowered the measured rate of inflation by approximately 0.2 percentage points annually. This change in methodology has the effect of raising the reported rate of output growth by approximately the same amount.[3]

If it is assumed that the use of geometric means in years prior to 1978 would have had approximately the same effect as in the years after 1978, then the annual rate of output growth

[2] In principle, it should be possible to construct a net measure of productivity growth which measures the growth of net output per hour of work. Since the productivity data in the table refer to the non-farm business sector rather the whole economy, the difference between the growth rate of GDP and NDP will not be exactly equal to the difference between gross and net productivity growth. However, since the non-farm business sector accounts for more than two-thirds of GDP, the gap between GDP and NDP should be approximately equal to the gap between the published gross measure of productivity growth and a net measure of productivity growth.

[3] A reduction in the measured rate of inflation will raise the rate of output growth by approximately the same amount since the increase in nominal GDP is already known. If inflation accounts for less of the rise in nominal GDP, then real output growth must account for more.

for this period should be raised by approximately 0.2 percentage points. The fifth and sixth columns show average rates for NDP and net productivity, where the years prior to 1978 have been adjusted in this manner. This adjustment makes the nineties cycle appear even worse relative to previous business cycles. The average rate of growth of adjusted net output is more than a full percentage point below the fifties rate and more than 1.5 percentage points below the sixties growth rate. Even the second half of the cycle does not look very strong when this adjustment is made. The rate of growth of NDP and net productivity are virtually identical to the seventies cycle, and far lower than the rates of the fifties and sixties.

In summary, the nineties business cycle—taken as a whole—does not look especially good by any measure, except in comparison to the eighties cycle. However, economic performance in the second half of the cycle does appear relatively strong, although not as good as in the sixties. The Commerce Department's net output measure shows a considerably worse picture, since a much larger share of output was used to replace worn out equipment in the nineties cycle, especially in the second half. When a further adjustment is made to account for the impact of changes in the Bureau Labor Statistics' measure of inflation in years after 1978, the nineties cycle looks even less spectacular. Output and productivity grew at approximately the same rate in the second half of the decade as in the seventies, and far below their growth rate of the fifties and sixties.

There is one other important point worth noting about the pattern of growth in the nineties cycle. There was a large redistribution from wage income to capital income over the course of the decade. This increase reversed a downward drift in the capital share, which had persisted through the whole post-war period. Table 3 below shows the before and after-tax shares of capital income as a percentage of total corporate income, at the profit peaks reached in each decade.[4]

Table 3: Capital Shares of Income at Business Cycle Profit Peaks

	Before-Tax	After-Tax
1948	24.3%	14.0
1959	21.9	12.1
1968	21.5	13.2
1978	19.3	12.9
1988	18.8	14.2
1999	19.8	14.9

Source: Bureau of Economic Analysis and Author's Calculations. See appendix.

As can be seen, the before-tax capital share of corporate income had fallen quite consistently through every business cycle prior to the nineties. The rise in the before-tax share of corporate income did not restore the profit share to its sixties levels, but it did reverse much of the decline of the prior two decades. The after-tax profit share reached a post-war high in the

[4] The profit peak of a business cycle generally occurs a year before the actual peak of the cycle.

nineties. The cuts in the tax rate on corporate profits in the eighties had already boosted the after-tax profit share to a post-war high in 1988. In the nineties, the lower tax rates were coupled with an increasing before-tax profit share, which pushed the after-tax profit share at the profit peak nearly a full percentage point above its highest level in the quarter century following World War II. From the standpoint of corporate profits, the nineties cycle was quite positive.

THE ROLE OF POLICY IN THE NINETIES

It is widely accepted in policy circles that the nineties showed the success of deficit reduction in stimulating economic growth. According to this view, the Clinton Administration, with a subsequent push from a Republican Congress, made deficit reduction its top economic priority. It reduced the budget deficit from 4.7 percent of GDP in 1992 to virtually zero by 1997, and then began running a surplus, which exceeded 2 percent of GDP in 2000. In this story, deficit reduction lowered interest rates, which in turn sparked an investment boom. The investment boom stimulated the economy by creating demand in the short-term and increasing productivity growth in the long-term.

While this is an attractive story, it bears only a limited resemblance to economic reality. The deficits did come down in the nineties, but the impact on interest rates was less than is widely recognized. Furthermore, it was not an investment boom that spurred the economy forward in the last half of the decade, but rather a stock market driven consumption splurge. This consumption splurge sent savings rates to record lows and levels of consumer indebtedness to record highs. In addition, foreign debt has soared to unheard of levels, as the United States is now borrowing more than $400 billion annually from abroad. Rather than laying a path for stable long-run growth, the nineties growth path was completely unsustainable. It was characterized primarily by a bubble in the stock market—the deflation of which is the cause of the current recession—and a run-up in the dollar, which will lead to hardships in the future when the dollar eventually falls to a more sustainable level. These points will be examined in turn.

The case that deficit reduction has led to a large drop in interest rates begins with the observation that the nominal interest rate on government bonds has fallen dramatically from the last business cycle to the current one. Interest rates on thirty-year government bonds hovered near 9 percent in the late eighties, as shown in table 2. By contrast, the interest rate paid on thirty year bonds has typically been below 6 percent in the last three years of the nineties business cycle. This appears to be a rather dramatic drop in interest rates.

Table 4: Interest Rates in the Eighties and Nineties—Nominal and Real

	Governm ent	Mortgage	AAA - corp	Inflation	Real Gov	Real Mortgage	Real AAA
1987	8.59%	9.31%	9.38%	3.41%	5.18%	5.9%	5.97%
1988	8.96	9.19	9.71	3.64	5.32	5.55	6.07
1989	8.45	10.13	9.26	4.35	4.1	5.78	4.91
Average	**8.67**	**9.54**	**9.45**	**3.80**	**4.87**	**5.74**	**5.65**
1998	5.58	7.07	6.53	1.36	4.22	5.71	5.17
1999	5.87	7.04	7.04	2.09	3.78	4.95	4.95
2000	5.96	7.53	7.64	3.26	2.70	4.27	4.38
Average	**5.80**	**7.21**	**7.07**	**2.24**	**3.57**	**4.98**	**4.83**
Difference	**-2.86**	**-2.33**	**-2.38**	**-1.56**	**-1.30**	**-0.77**	**-0.82**

Source: Federal Reserve Board and Author's Calculations. See Appendix.

This simple comparison ignores the fact that it is the real interest rate, the nominal rate minus the inflation rate, which affects investment and home buying. The drop in the real interest rate on government bonds has been considerably less dramatic. The inflation rate has averaged more than 1.5 percentage points lower in the latter part of the nineties cycle than in the eighties cycle. However, even after making this adjustment, the drop in the interest rate on government bonds is still fairly impressive, from an average real interest rate of 4.9 percent in the late eighties, to 3.6 percent in the late nineties.

This drop in real interest rates has saved the government money on its borrowing, but it does not otherwise directly affect the economy. The more important question is the extent to which deficit reduction, or surpluses, have lowered the cost of borrowing for home mortgages or business investment. The impact on interest rates in these categories of loans turns out to be less than the impact on government borrowing. The reason is that deficit reduction, and more recently debt reduction, has created a scarcity premium for government debt. Individuals and firms have been willing to pay a premium—accept lower rates of return—in order to have the security of owning U.S. government debt. Therefore interest rates have fallen considerably more on government debt than on either mortgage debt or business borrowing.

As table 4 shows, the average real interest rate on mortgages was just 0.8 percentage points less in the last three years of the nineties cycle than in the last three years of the eighties cycle. Real interest rates on corporate debt declined by approximately the same amount. A decline of interest rates of this magnitude can be expected to have an impact of the economy, but it will not be sufficient to create the sort of investment boom that many people claim took place in the late nineties.

This point is easy to verify by simply examining the share of GDP that was accounted for by each major component. This information is presented for the peak years of the last six cycles in table 5. Comparing the 2000 peak with the 1989 peak, the largest increase in demand is the 2.6 perc

Table 5: Shares of GDP at Business Cycle Peaks

Year	Consumption	Investment	Housing	Inventory	Government	Net Exports	I + (X-M)
1948	65.1%	9.9%	5.8%	2.1%	15.1%	2.0%	11.9%
1959	62.7	9.2	5.5	0.8	22.2	-0.3	8.8
1969	61.4	10.6	4.3	0.9	22.8	-0.1	10.5
1979	62.2	12.9	5.5	0.7	19.6	-0.9	12.0
1989	65.5	11.2	4.2	0.5	20.0	-1.5	9.7
2000	68.2	13.1	4.3	0.5	17.6	-3.7	9.4

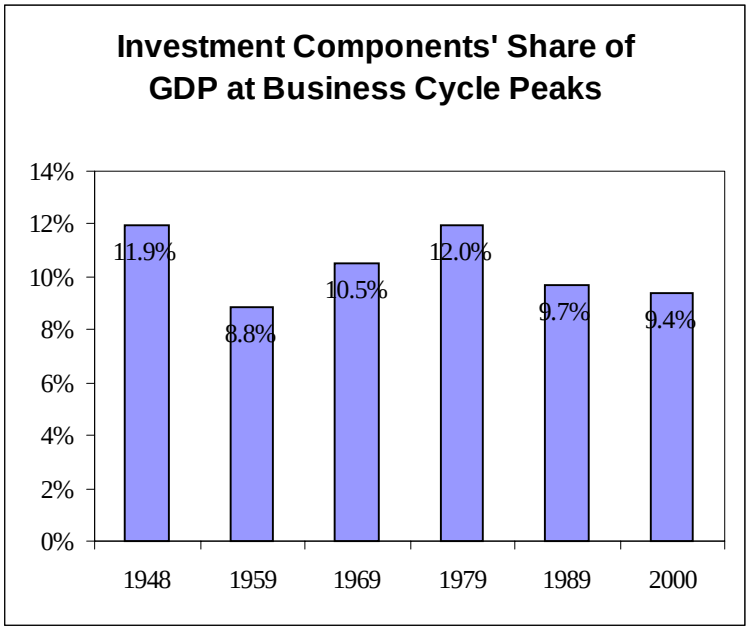
Source: Bureau of Economic Analysis and Author's Calculations. See appendix.

percentage point rise in the consumption share in 2000. Expenditures on residential housing rose by less than 0.1 percentage point of GDP, indicating that lower mortgage rates did not touch off any large-scale housing boom.

The investment share did rise by 1.9 percentage points of GDP from 1989 to 2000. This is a healthy increase, but not as large as the rise in consumption.[5] It also is not as large as the rise in the size of the trade deficit, which rose by 2.2 percentage points from 1989 to 2000. As a result of this rise in the trade deficit, the share of GDP that was going to the "investment" components—investment spending in the United States and net exports, which corresponds to investment abroad—was actually slightly lower at the end of the nineties cycle than at the end of the eighties cycle, as shown in figure 1 below. This investment share was far lower than it had been at the peak of the seventies cycle.

[5] This increase in investment is somewhat overstated due to the increase in car leasing in the nineties. Car leasing was very limited in the eighties, but at its peak in the late nineties, nearly one in three new cars was purchased on a lease arrangement. This creates an anomaly in the national income accounts, since a car purchase by a consumer counts as consumption in the national accounts. However, when a company leases a car to a consumer, the purchase of the care counts as investment. While the Commerce Department does not keep data on the portion of investment that is attributable to lease arrangements, the share of transportation equipment (which would include leased cars) in GDP, rose by 0.7 percentage points between 1989 and 1999. It is likely that leased cars accounted for the bulk of this increase.

Figure 1



Source: Bureau of Economic Analysis and Author's Calculations. See Appendix.

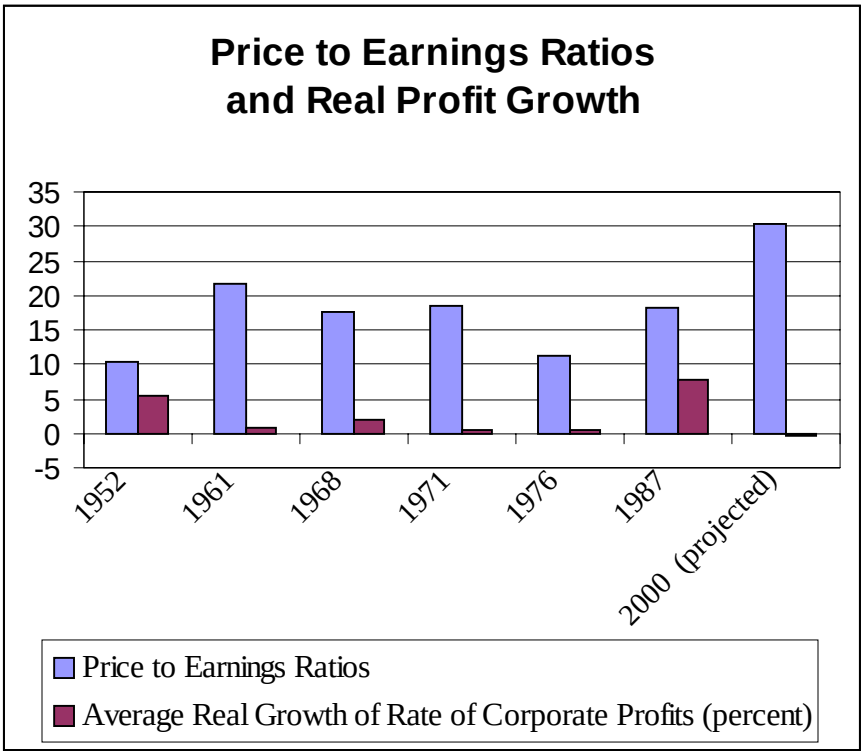
The increase in the trade deficit is ironic because it was standard practice for economists to refer to the budget and trade deficits as the "twin deficits" throughout the eighties and first half of the nineties (see Blecker, 1992). This view was that the budget deficit *caused* the trade deficit, by driving up interest rates and therefore the value of the dollar. In this story, with the budget deficit transformed into a large surplus, it would have been expected that the trade deficit also disappeared and became a surplus, as the United States would no longer need to borrow from the rest of the world. In fact, the United States was borrowing more than at any point in the post-war era in 2000, with a current account deficit of $444 billion.

Insofar as eliminating the budget deficit was supposed to lay the path for greater prosperity for our children and grandchildren, the data in table 5 clearly show that the policy failed. The rise in the domestic investment share of GDP should lead to more capital per worker and higher productivity growth. However, this benefit will be almost completely offset by the greater level of foreign indebtedness that the nation is incurring as a result of the trade deficit. The net indebtedness of the country was more than $2.1 trillion at the end of 2000 and will likely cross $2.5 trillion by the end of this year. This debt represents demands on future output which must go to make interest and dividend payments abroad, instead of being used for domestic

consumption and investment. With the nation continuing to run up debt at the rate of more than $400 billion a year, the burden of future debt service is growing at a rapid pace.

The most obvious reason that the economy did not follow the path that most economists predicted was the growth of the stock market bubble. In 1996 the stock market began to rise to levels that could not be justified, given plausible projections of future profits. From the end of 1995 until it peaked in the first quarter of 2000, the value of the stock issues of all U.S. corporations increased by 136.5 percent, an annual rate of growth of 22.4 percent. At its peak, the value of all equity issues was $17.8 trillion, 31.1 times after-tax corporate earnings for the previous year (Federal Reserve Board Flow of Funds, September 18, 2001, Table L.213, line 19). This compares to a historic price to earnings ratio of less than 15 to 1. The price to earnings ratio reached at the peak of the bubble in 2000 was also far higher than any previous post-war peak as shown in figure 2.The 2000 price to earnings ratio appears even more out of line given that profits were near their cyclical peak. As a result, it was reasonable to expect that profit growth in

Figure 2



Source: Economic Report of the President and author's calculations. See Appendix.

the immediate future would be considerably lower than the historical average. In fact, the Congressional Budget Office (CBO) projected that real profit growth would average *minus* 0.4

percent annually over the next decade in the annual Economic and Budget Outlook issued in January of 2000 (CBO, 2000).

While the bubble was clearly not sustainable, it did have an enormous impact on the economy. The fact that many high tech and Internet start-ups were able to issue billions of dollars of stock, when they had little or no earnings, meant that the cost of borrowing for such firms was virtually zero. As a result, there was a huge burst of investment in these areas. In the wake of the bubble's collapse, there has been a corresponding reduction of investment in tech sectors. Investment in information technologies in the second quarter of 2001 was down by more than $50 billion (11.4 percent) from its peak in the fourth quarter of 2000 (National Income and Product Accounts Table 5.4. line 9).

The other major impact of the stock bubble was on consumption. There has been a large body of research establishing the existence of a wealth effect, whereby higher stock prices increase consumption. Standard estimates have placed the size of this wealth effect at approximately 4 cents on the dollar, an estimate recently reconfirmed by new research conducted by the Federal Reserve Board (Dynan and Maki, 2001; Maki and Palumbo, 2001). With the stock market reaching a peak that was more than twice its average price to earnings ratio, a huge amount of bubble wealth was created, which led to the enormous consumption boom the economy experienced at the end of the decade. As households saw the value of their stock soar, they felt less need to save out of current income. This pushed the savings rate almost to zero. It also led to an enormous buildup of household debt.

In the short-term, the high demand created by this consumption boom sustained rapid economic growth. However, it has created serious problems for the longer term. The ratio of household debt (excluding mortgage debt) to disposable income reached a new peak in this cycle at 21.6 percent of disposable income. This compares with a debt burden in the last cycle that peaked at 18.3 percent of disposable income in 1990. Even this comparison understates the actual growth of indebtedness, since many consumers now have their cars on lease arrangements, rather than an outright purchase. Usually cars are purchased on credit, which would be counted in the consumer debt figures. The lease commitment, which is virtually identical for most purposes, does not get included in the Federal Reserve Board's data on indebtedness. Including the value of outstanding car lease commitments could add another 2 to 3 percentage points to the current level of indebtedness, measured as a share of disposable income.

Mortgage debt has also increased at a very rapid pace in this business cycle. In 1989, mortgage debt stood at $3178.8 billion, in 2001 dollars. In the second quarter of 2001, it was at $5,143.2 billion, an increase of 61.8 percent. This rise in mortgage debt corresponded to a decline in the ratio of equity to housing values from 64.7 percent in 1989 to 55.8 percent this year.[6] Many households have obviously borrowed heavily against the value of their homes. As a result, the increase in wealth in the form of home equity has lagged far behind the growth in GDP over this period, growing 26.2 percent since 1989, compared to GDP growth of 40.7

[6] This data appears in the Federal Reserve Board's Flow of Funds Table B.100. Data on mortgage debt appears on line 34, while the ratio of equity to total value is taken from line 52. The 1989 data was adjusted for inflation using the CPI-U-RS.

percent. Holdings of consumer durable goods actually fell slightly when adjusted for inflation over this period, which presumably reflects the growing importance of leased cars.[7] (Leased cars are not counted as an asset.)

The diminished savings and build-up of debt during the nineties cycle has important implications both for individual households and for the economy as a whole. As a result of the stock market boom, millions of families saw the value of their assets soar to new highs. In many cases, they made borrowing and career decisions based on the assumption that the market would maintain the levels reached at its peak, and possibly even continue to rise at the extraordinary pace witnessed in the late nineties. With the market having fallen back to more normal levels (although it continues to be far above its historic price to earnings ratio), many families now find themselves with far more debt relative to their assets than they would have deliberately incurred. Also, many families are now far behind savings goals—for their children's education or their own retirement—since they failed to recognize the transitory nature of the stock market bubble. Many workers will have to spend several more years in the labor force than they had anticipated at the peak of the bubble, and in some cases retirees are being forced to re-enter the labor force (e.g. see "Out of the Easy Chair, Back to the Grind," *Washington Post*, 9-29-01; A1). The economy functions most efficiently in a predictable environment. The stock market bubble created a huge amount of unpredicted wealth, which has quickly dissipated. Millions of families have been hurt as a result.

At a macroeconomic level, this run-up of debt and diminished savings will make it much harder to try to boost the economy out of recession. Families will be trying to increase their savings in order to offset the lost wealth from the collapse of the stock bubble. This may cause savings to be even higher—and consumption even lower—than it otherwise would be. The loss in stock wealth from the collapse of the bubble would imply a reduction in annual consumption of close to $400 billion. The effort to make up for lost wealth could make the falloff in consumption even larger.

As difficult as it may be to recover from the collapse of the stock market bubble, the long-term impact of the dollar bubble may be even more serious. Most of the run-up in the dollar occurred in the immediate aftermath of the East Asian financial crisis, as investors sought the security of dollar denominated assets and nations rushed to build-up their holdings of reserve assets.[8] However, when the region stabilized, the dollar did not fall back in price relative to other currencies—in fact it rose further. As a result, the U.S. trade deficit rose from 1.1 percent of GDP in 1996 to 3.7 percent of GDP in 2000. Adding in payments for the U.S. military abroad, and other items not counted in the trade balance, the current account deficit reached $444 billion in 2000, or 4.5 percent of GDP.

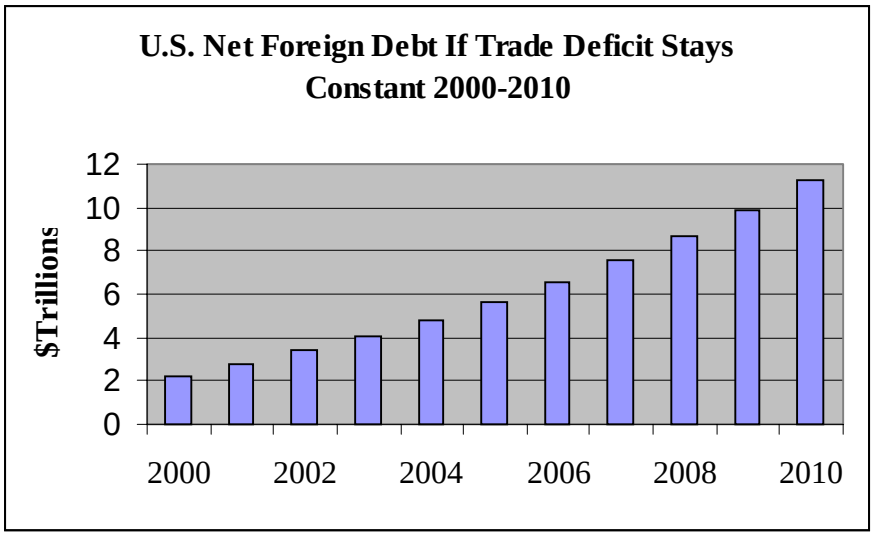
[7] Data on the value of consumer durable goods appears in Table B.100 line 5.

[8] One of the factors that has helped push up the value of the dollar and finance the U.S. current account deficit has been a massive increase in foreign reserve holdings throughout the developing world. Reserve holdings have increased substantially in every part of the developing world in the last decade, and especially in the last four years (see Baker and Wallentin, 2001). The dollar is by far the most popular reserve currency.

It is not possible to maintain foreign borrowing of this magnitude, just as it would not be possible to maintain a budget deficit of $444 billion a year.[9] The effect of this borrowing is to allow the U.S. to consume much more than it is producing. This makes the country feel richer in exactly the same way as a tax cut, which was not offset by spending cuts, would make everyone feel richer. However, in both cases the debt burden quickly rises so that at some point it is no longer possible to borrow at the same rate.

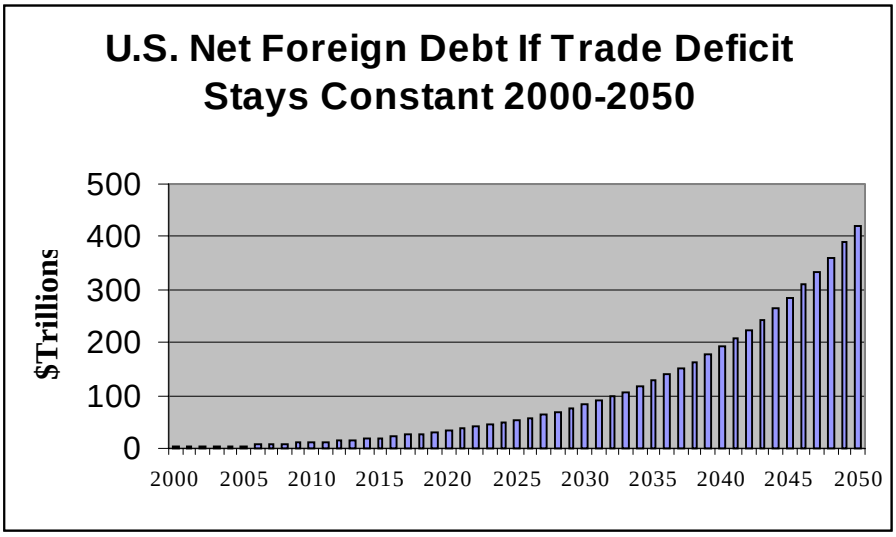
It is easy to show that this date would not be long in the future, in the case of the trade deficit. Figures 3 and 4 show the path of net foreign indebtedness, if the trade deficit remains constant as a share of GDP.

Figure 3



[9] In some ways a foreign debt is a more serious problem than government debt. Foreign debt is a claim on domestic resources by people living outside the country. Government debt is essentially a redistribution of claims on resources among people living within the country. In principle, the interest paid out on the debt can be largely taxed back by the government, or the real value of the debt can be reduced with inflation. These options are not generally available to reduce the burden of a foreign debt.

Figure 4



Source: Bureau of Economic Analysis and Author's Calculations. See Appendix.

If the trade deficit remained constant as a share of GDP, by the end of the decade, accumulated net foreign indebtedness would be over 60 percent of GDP, or $11.1 trillion. The real net annual flow of interest and dividend payments abroad would be equal to 2.4 percent of GDP, pushing the current account deficit to approximately 6.5 percent of GDP in 2010.[10] If the trade deficit continued at this size for another nine years, the foreign debt would exceed GDP. By 2038, the year the Social Security trust fund is projected to be depleted, the foreign debt would be more than twice the size of GDP, or more than $160 trillion dollars.

Of course this scenario is not realistic; the trade deficit will be brought down to a more manageable level long before the foreign debt reaches these levels. But, the only way this can happen is if there is a large fall in the dollar, which make imports more expensive and U.S. exports cheaper to people living in other nations. This implies a significant reduction in U.S. living standards. Over the next several years, approximately 3-4 percent of output will have to be diverted towards correcting our trade imbalance, instead of being used for consumption or investment in the United States. Assuming that wage and profit shares remain fixed, this means that wage growth will have to lag productivity growth by this amount (3 to 4 percentage points). In other words, if productivity growth follows the path currently projected by the Social Security trustees, and the adjustment takes places over the next five years, real wage growth will be 60 to 80 percent less than projected, because of the need to correct the trade imbalance.

In effect, much of the real wage growth experienced in the last half of the nineties business cycle was borrowed from future wage growth. The sharp run-up in the trade deficit

[10] These calculations assume that foreign assets earn an average real return of 4.0 percent and the economy grows at a 3.0 percent real rate over the next decade.

allowed wage growth to exceed productivity growth by approximately 3 percentage points (assuming constant shares). When the run-up in the trade deficit is reversed, wage growth will have to lag productivity growth. Since the nation is rapidly building up foreign debt, the longer it takes before the trade deficit is corrected, the larger the cost will be.

The over-valued dollar gave an illusion of prosperity in the short-term, since it made imports very cheap. However, this short-term gain comes at a considerable long-term cost. Given the extent of the focus of public policy on budget deficits—in some cases just the possibility of deficits in the distant future—it is remarkable that the massive trade deficits of recent years have received very little public attention.

Furthermore, it was an enormous failure of public policy, not to warn people about the stock market bubble that created this situation. At a macro level, it will be difficult to again pump up the economy in the wake of the collapsing bubble. At the individual level, millions of households now find themselves with insufficient savings to pay for their retirement or their children's education. Since no plausible projections of profit growth could justify the peak price-to-earnings ratios, it was easy to recognize the existence of the bubble, as several economists did (Baker 1997, 1999, Diamond 1999, Shiller, 2000). The decision by the Federal Reserve Board and the Clinton Administration not to take any actions to try to limit the run-up of the stock bubble was a mistake that the nation will suffer from for many years to come.

THE DEATH OF THE NAIRU

There is one other policy important policy lesson from the experience of the nineties—the apparent non-existence of a "non-accelerating inflation rate of unemployment," or NAIRU. Until the mid-nineties, the vast majority of economists accepted the view that the inflation rate would inevitably accelerate, if the unemployment rate was allowed to fall below the NAIRU, which at that time was estimated as being between 5.8 and 6.5 percent. In the middle of 1995, Princeton economist Paul Krugman accurately represented the view of the mainstream of the profession when he wrote an article entitled "Voodoo Redux" (Krugman, 1995). This article compared the economists who questioned the NAIRU theory to the scientists who questioned the existence of a hole in the ozone layer. Krugman dismissed these economists as politically motivated hacks, whose views did not deserve to be taken seriously.

In spite of the consensus within the discipline, the experience of the mid and late nineties appears to have decisively refuted the NAIRU theory. The unemployment rate first fell below 6 percent in September of 1994. It fell below 5 percent in May of 1997, and even briefly fell below 4 percent during several months in 2000. The NAIRU theory predicted that such low levels of unemployment would lead to a significant run-up of inflation. In fact, the inflation rate has remained remarkably stable over this period. The standard Phillips Curve regressions, which provided the statistical support for the NAIRU theory, no longer even show a statistically

significant relationship between the unemployment rate and the increase in the inflation rate (see Bernstein and Baker, forthcoming). In short, there is little basis for continuing to adhere to the NAIRU theory, except the reluctance of economists to discard long-held views.

This point is important, because there were enormous benefits associated with the low unemployment of the second half of the business cycle. The most disadvantaged groups gain the most from low rates of unemployment. As a rule of thumb, the unemployment rate for African-Americans is twice the overall unemployment rate. The unemployment rate for African-American teens is six times the overall unemployment rate. This means that the drop in the unemployment rate from 6 percent, the widely accepted estimate of the NAIRU, to 4 percent was associated with a drop in unemployment among blacks from 12 percent to 8 percent. The drop in unemployment among black teens was from 36 percent to approximately 24 percent, with the unemployment rate in some months getting as low as 21 percent. While a 21 percent unemployment rate among black teens is still quite high, the difference between this level and the 36 unemployment percent rate associated with a 6 percent NAIRU, has made a huge difference in the lives of millions of young African-Americans. This drop in the unemployment rates for blacks is undoubtedly an important factor in the large decline in poverty rates experienced by African-Americans in the last four years.

The decision of the Federal Reserve Board to allow the unemployment rate to drop below widely accepted measures of NAIRU was an experiment that reaped enormous dividends. Millions of additional workers have been allowed to hold jobs as a result. It will be important to remember this lesson in future years, when the economy recovers from the current recession. There are enormous benefits from pressing the unemployment rate absolutely as low as possible. We now know that the risks from higher inflation are far less than most economists had previously believed.

COPING WITH THE NEW ECONOMY RECESSION: WHAT DO WE DO NOW?

The first step in dealing with the current recession is to recognize clearly its cause. On this point, there can be little ambiguity. The cause of the recession was the collapse of the stock market bubble. This had the immediate effect of ending the investment boom in the tech sectors, and it also is having the effect of ending the consumption boom driven by stock wealth. As the stock market moves back towards a more normal relationship with corporate profits, consumption will fall—and savings will rise—back toward their historic share of disposable income. This will lead to an enormous falloff in demand, on the order of $400 billion a year. This decline comes on top of the fall-off in tech investment, which exceeds $50 billion a year. This is an enormous gap in demand which must be offset from other sources.

The terrorist attack of September 11th, and the subsequent impact on the airline and tourism industry, will accelerate the negative trend in consumer spending. They also create a far more uncertain investment environment, as no one can know the length or extent of the current

war, nor the nature of possible future attacks against the United States. The situation created by the attack substantially increases the need for a large economic stimulus. Given the size of the drop in demand the country is facing, the necessary stimulus will have to be far larger than the $70-$100 billion amounts currently being debated, if the economy is to move back toward full employment.

It is also important to have a clear sense of which sectors of the economy should provide the stimulus. At this point, it would be foolhardy to try to rely too much on additional consumption to stimulate the economy. The savings rate had been depressed for years due to the illusory wealth created by the stock market bubble. As a result of a low savings rate, and the eventual collapse of the bubble, many families have accumulated far less wealth than they had targeted. It would be bad policy to discourage additional savings—people will have to make up for their lost stock market wealth, if they are to have sufficient savings to support their retirement, or for other needs.

It would be desirable to increase private domestic investment spending, as a source of stimulus, but this will not be easy to do. In an uncertain economic and political environment, firms will be reluctant to commit themselves to long-term investments. This is especially the case in the sectors of the economy which already have large amounts of excess capacity. The best hope of affecting investment is through policies that directly reduce the cost of investment, and which are temporary, thereby giving firms an incentive to move investment plans forward. For this reason, a temporary investment tax credit would be the most cost efficient way of inducing investment. Cuts in the corporate income tax, especially permanent cuts, would be far less cost effective, since these don't necessarily reward investment. Reductions in the capital gains tax are the least effective, since they have only an extremely indirect effect on investment, by potentially causing a minor reduction in the cost of capital (Fazzari, 1999 and Chirinko, Fazzari, and Meyer, 1999).

Increases in government spending will have to be an important source of stimulus in the near future, because these expenditures are under the direct control of the government, and therefore the intended stimulus from such spending is guaranteed. This could provide an opportunity for addressing neglected needs, such as modernizing the nation's train system and/or repairing decrepit public schools in poor areas. There will also be significant needs for spending to address the immediate hardships of the recession—including expanding unemployment insurance, extending health insurance coverage to the unemployed, and retraining the workers who have been laid off from industries which are not likely to bounce back during a recovery.

Additional spending, combined with the lost tax revenue due to recession and the downturn in the stock market (CBO had assumed more than $100 billion a year in capital gains tax revenue in its last budget projections), are likely to mean that the Federal government will be running budget deficits again for the foreseeable future. It is important that the issue of deficit spending be addressed in an honest manner. While it is politically popular to balance the budget and pay off the debt, the economic benefits from these policies are quite limited. Economists recognize that the nation can run modest budget deficits (2.-2.5 percent of GDP, or $200-$250 billion a year), indefinitely.

The reality of budget deficits is the exact opposite of what politicians have led the public to believe. The stock-market-driven consumption boom of the late nineties, with its dependence on massive foreign borrowing, was unsustainable, even though the nation was paying off the national debt. In contrast, a scenario in which the country continues to run modest budget deficits, but the debt to GDP ratio remains constant or falls, can be sustained forever. It will take some serious political leadership to make the public aware of these facts.

Finally, a decline in the trade deficit, which will result from a fall in the dollar, will be an important source of stimulus to the economy. It is not necessary for the United States to have balanced trade (just as it does not have to balance its budget), but trade deficits of the size we've seen in the last few years are clearly unsustainable. A substantial decline in the value of the dollar should be an explicit policy goal. As noted before, a correction of the deficit and a decline in the dollar in inevitable; the United States cannot borrow $450 billion a year from abroad indefinitely. Delaying the decline in the dollar causes the debt burden to grow, and ensures that the eventual adjustment process will be even more painful. If the trade deficit fell back to its 1996 level, it would provide a major stimulus to the economy, and put the nation's foreign borrowing back on a sustainable path.

It is important to recognize that a decline in the dollar will be inflationary. This inflation is an inevitable result of having maintained an over-valued currency for several years. There is no real way to avoid the additional inflation that results from the decline in the dollar. It will be important that the Federal Reserve Board resist the urge to combat this inflation with higher interest rates, and instead keep its focus on maintaining full employment. The policy mistake was allowing the dollar to become over-valued in the first place. The Federal Reserve Board would only compound its error if it raised interest rates in an attempt to choke off the inflation associated with the dollar's decline.

The stock market bubble and an over-valued dollar created an illusion of a successful economic strategy in the late nineties. In reality, this pattern of economic growth was even less sustainable than the budget-deficit fueled expansion of the eighties. It is not possible for the stock market to consistently rise more rapidly than the growth rate of corporate profits. Nor is it possible for the United States to indefinitely increase the ratio its foreign debt to GDP. It was inevitable that these imbalances would have to be corrected. While this process is inevitably painful, the damage will be minimized if the corrections occur as soon and as quickly as possible, and the nation moves back onto a path of sustainable long-run growth. The pain for most of the population will be minimized if the adjustment process is accompanied by a reversal of the upward redistribution of income which has occurred over the last two decades.

APPENDIX

Table 1 uses GDP from the National Income and Product Accounts (NIPA). The dating of the business cycles corresponds to the NBER's dating (averages were calculated to the quarter where each cycle begins and ends), with the exceptions that several short cycles were bunched together to allow for averaging over longer periods. The productivity data is for the non-farm business sector. It can be found on the Bureau of Labor Statistics (BLS) website. The employment growth data is based on the BLS non-farm payroll series, which is also available on its website. Growth rates were calculated based on the months in which cycles were reported as beginning and ending. The compensation growth in the table is from the BLS productivity data for hourly compensation in the non-farm business sector. The average hourly wage data is based on the average hourly wage calculated in the BLS establishment survey. It is only available after 1960. The growth rate for the median wage is derived from the data on median wages in Mishel, Bernstein, and Schmitt, 2001, table 2.6. The series were adjusted to use the CPI-U-RS as a deflator, instead of the CPI-UX1. The unemployment rate is based on the BLS household data. It refers to the lowest annual unemployment rate experienced in each business cycle.

The NDP data that was used to calculate the growth rates in table 2 can be found on line 13 of table 1.12 in the NIPA. The "net productivity growth" measure subtracts the average difference between GDP growth and NDP growth for each business cycle from the rate of productivity growth. The adjusted NDP and net productivity growth measures add 0.2 percentage points to the growth rates for each year prior to 1978 based on the assumption that the inflation rate was biased up by this amount in these years, due to the failure to account for lower level substitution.

The capital shares in table 3 use the profit, interest, and corporate income data from NIPA table 1.16. The capital share is the sum of profits (with IVA and CCA) plus interest divided by net corporate income.

The interest rate data in table 4 is taken from the Federal Reserve Board website. The CPI-U-RS series was used as the measure of inflation. Table 5 presents nominal shares of expenditure from NIPA table 1.1. The sum of the investment and net export shares is graphed in figure 1.

Figure 2 shows the price to earnings ratio for the S&P 500 index, which can be found in the *Economic Report of the President, 2001*, table B-95. The profit growth figures are ten-year averages for the real after-tax growth of corporate profits for the ten years following each stock market peak. The CPI-U-RS was used as the deflator. The profit growth projection for 2000 was taken from the Congressional Budget Office 2000, Economic and Budget Outlook Fiscal Years 2001-10, Summary table 6. The profit projections were deflated using the projected rate on inflation shown by the CPI.

Figure 3 projects net foreign indebtedness based on the assumption that the trade deficit, plus net foreign transfers (e.g. foreign aid and foreign military expenditures) will be equal to 4.0 percent of GDP. The real growth rate is assumed to be 3.0 percent with an inflation rate of 2.5 percent. The foreign debt is assumed to earn an average real interest rate of 4.0 percent.

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