EXECUTIVE OFFICE OF THE PRESIDENT
COUNCIL OF ECONOMIC ADVISERS
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Prepared Remarks of Edward P. Lazear, Chairman

"Productivity and Wages"

At the National Association of Business Economics

September 12, 2006

Thank you for inviting me to speak at NABE. It is a pleasure to be here. I'd like to discuss the economy with you and to focus much of the talk on productivity, the growth of which has been a major story of the last few years.

Economic Outlook

Let me begin by sketching a picture of the economy and the Administration's forecast of key parameters over the next couple of years. Real growth of gross domestic product (GDP) was 3.2 percent over the four quarters of 2005 and is forecast to be 3.6 percent over the four quarters of this year and 3.3 percent over 2007.

The Office of Management and Budget confirmed that strong economic growth is helping to increase federal revenue and reduce the budget deficit faster than expected. The President's goal of cutting the deficit in half by 2009, which drew the scoffs of many, may now be reached by 2008. This is in part a result of tax policies that have created rapid economic growth and corresponding tax revenues.

Job growth has been strong over the past couple of years. The economy has been producing about two million payroll jobs per year for a total of 5.7 million additional jobs since August 2003. That trend is largely expected to continue with some slight moderation. Our

estimate of monthly employment growth for 2006 is 156,000 (Q4-to-Q4).[1] The unemployment rate, which was 5.1 percent in 2005, is forecast to average 4.7 percent in 2006. The recently released jobs report showed solid gains for August. It showed 128,000 payroll jobs being added and the unemployment rate declining to 4.7 percent.

Nominal wage growth has accelerated significantly over the past year. At an annualized rate, nominal wage growth has been 4.1 percent so far this year. As I will discuss below, this follows the typical business cycle pattern of productivity increases leading to wage increases.

What is different about this period is that recent large and unanticipated increases in energy prices have consumed much of this strong nominal wage growth. Workers' paychecks have gone up, but they have had to use most of that increase for energy like gasoline and heating fuel. The significant increase in the price of gasoline and oil products is one of the most notable changes in the economy in the past year. Since May of 2005, the price of crude oil is up about 34 percent and nationally the price of gasoline at the pump is up about 30 percent. Higher energy prices strain family and business budgets, but thus far the economy has once again exhibited resiliency.

With recent declines in gasoline prices, however, there is the prospect of substantial real wage growth in the rest of 2006. Gasoline prices have dropped by 31 cents since early August. Although higher energy prices have boosted inflation over the past year to 4.2 percent, the rate of core inflation (which excludes volatile food and energy prices) was only 2.7 percent, up from the 2.5 percent core inflation rate over the year-earlier period. These figures are from the consumer price index (CPI). Other measures show less inflation.

[1] The original version of the prepared remarks mistakenly quoted the Administration's forecast as 135,300 per month.

There have been some concerns in the past couple of months that the economy may slow this year. A better description is that it will likely moderate from very good growth to good growth. For the first six months of 2006 we enjoyed real GDP growth at an annual rate of 4.2 percent. While we do not expect growth rates to continue at that level throughout the remainder of the year, we do expect that they will be sufficiently high to cause real GDP growth over the four quarters of 2006 to be in the neighborhood of three-and-a-half percent, as mentioned earlier.

We continue to lead the major industrialized countries in economic growth and we have very good fundamentals for continued economic expansion. These fundamentals include a flexible labor market, few impediments to business formation, high levels of investment in skills and human capital, strong property rights, well developed and sophisticated capital markets, low taxes, and an entrepreneurial spirit. Americans' pioneering attitudes and openness to new ideas and new peoples have been instrumental in growing this economy.

Productivity Growth

Behind these strong numbers is high productivity growth that has made our economy the strongest and most robust in the world. It is the common thread that ties all positive economic news together.

Productivity growth is closely tied to economic growth. It leads to higher wages and improved standards of living. It helps keep inflation pressures moderate. And, it has proven to be one of our Nation's most important economic fundamentals and a defining characteristic of our international competitiveness.

The United States is the most productive large economy in the world. Output per capita is approximately 30 percent higher here than in the developed European countries and Japan. U.S. productivity growth and output per hour worked is among the highest in the world.

In one sense, it is a bit surprising that the United States is a leader in terms of economic output and performance. The average number of hours worked in the United States exceeds that in most European countries by a good margin. For example, a typical worker in the U.S. works one eight hour day per week more than the typical worker in France and Germany. Since productivity tends to decline with additional hours worked, the American productivity advantage is even more surprising.

Growth in American productivity has been impressive in recent years. The Bureau of Labor Statistics reports that U.S. productivity growth since the end of 2000 has been 3.0 percent per year, outpacing the 2.6 percent average from 1996 to 2000. The current growth rate is substantially above that for the period between 1973 and 1995, when productivity growth averaged only 1½ percent (see Figure 1). Our growth rate is remarkable for a country that is already at the top of the productivity pyramid. Raising productivity would seem to be easier for countries that can learn from technological improvements made by other countries. But for the country that leads the world in productivity, a high growth rate is even more impressive.

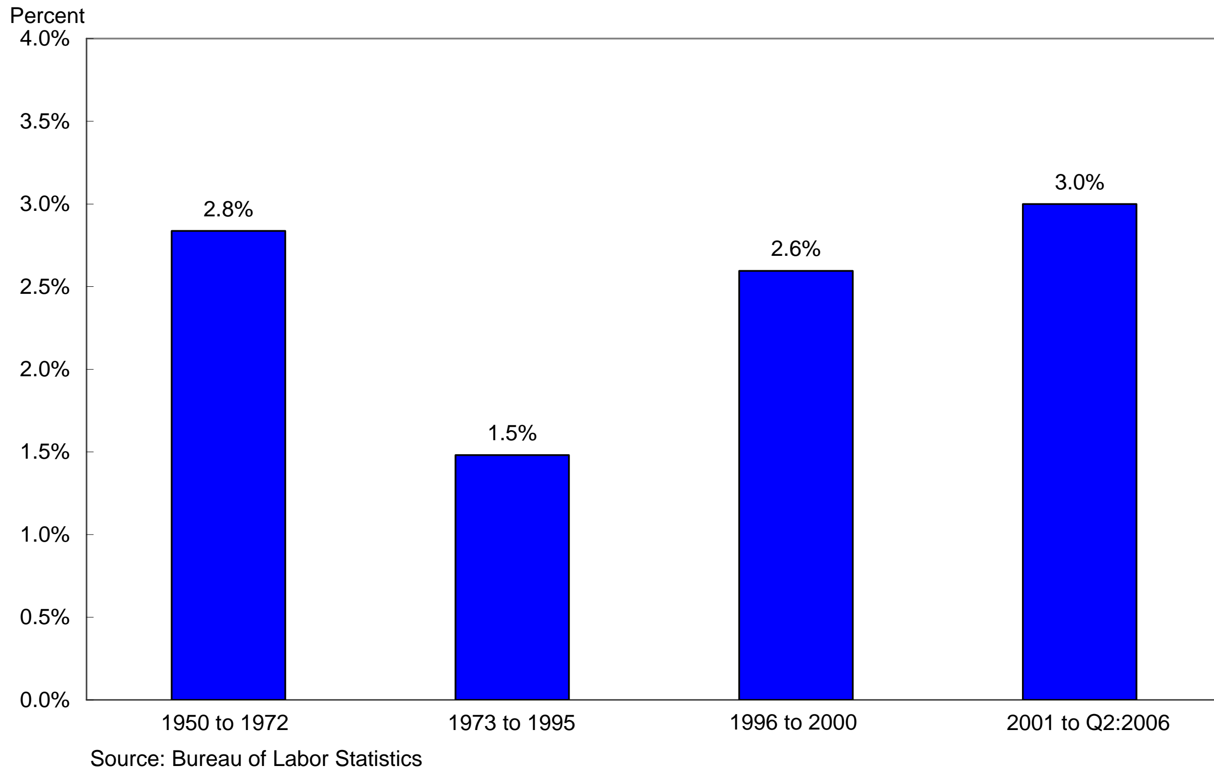


Figure 1

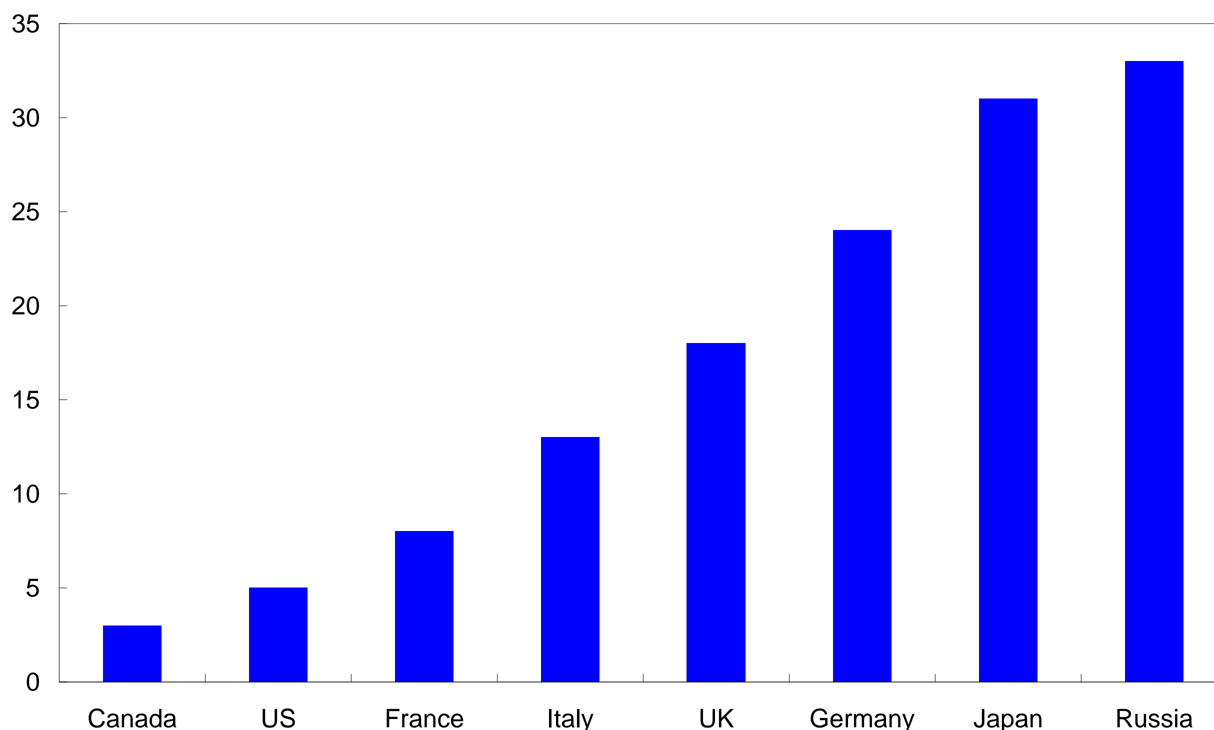
America's high productivity growth helps explain the fact that U.S. GDP has been growing at rates that are not only high by historical measures, but are also at the top of the G-7.

What makes productivity grow? Labor becomes more productive either because it becomes more skilled, because it has more and better capital to work with, or because we come up with new and better ways to combine labor and capital. Thus, an environment that fosters growth in human capital, physical investment, and innovation is key to both our past growth and the growth we need for our future.

There have been a number of potential explanations for the productivity differences between the United States and other countries. The leading candidates include labor market flexibility and high levels of investment in both physical and human capital. Some of this was

documented in Edward Prescott's Richard T. Ely Lecture at the 2002 American Economic Association Meetings, "Prosperity and Depression."[2] A number of observers believe that low marginal tax rates on work, high incentives to invest in physical capital, and a climate of employment at will have been major contributors. It is certainly true that job security provisions pervasive in Europe and less prevalent in the United States are primary suspects for output limitations found in Europe.[3]

In addition to having a free and mobile labor market, the U.S. also encourages entrepreneurship and business formation. By almost any measure, the U.S. is one of the leading nations in terms of the ease with which individuals can start a new business (see Figure 2).



Source: The World Bank.

[2] The full text of Prescott's Ely Lecture can be obtained at http://minneapolisfed.org/research/WP/WP618.pdf.

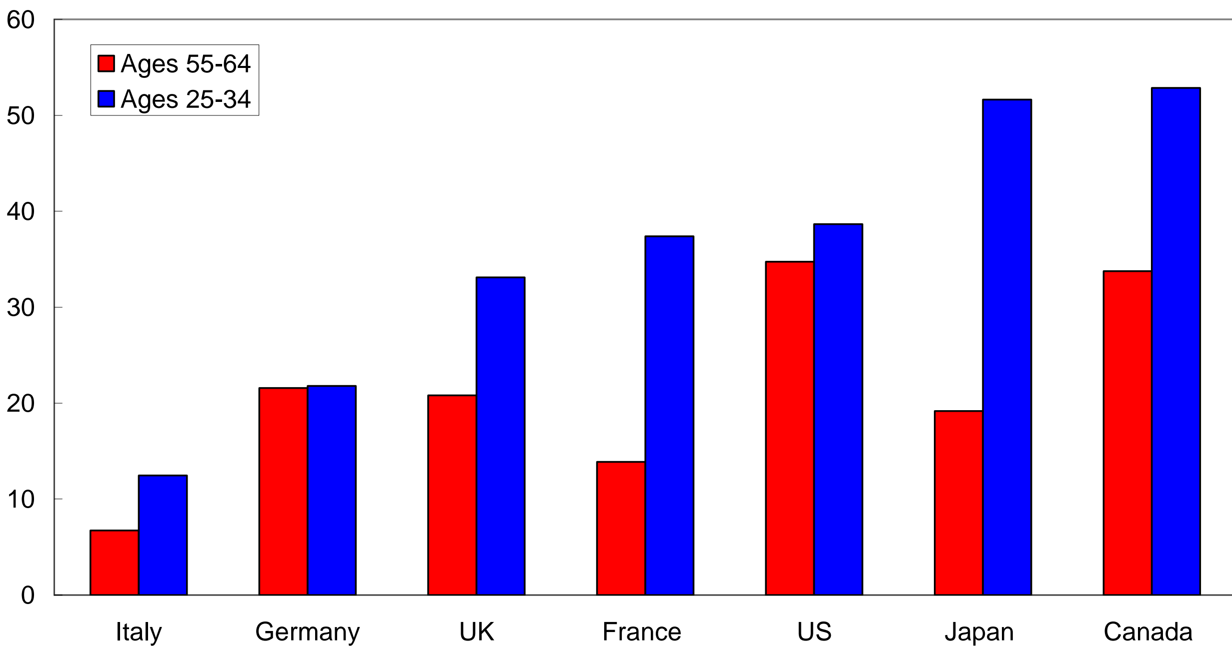
[3] In my 1990 paper "Job Security Provisions and Employment" in the Quarterly Journal of Economics (Vol. 105, No. 3. (Aug., 1990), pp. 699-726), I found that job security provisions were instrumental in limiting employment in developed countries.

Figure 2

As important as physical investment is to American productivity, human capital is a key driver of productivity growth in any country. Historically, the United States has led the G-7 in tertiary educational attainment (see Figure 3).

Tertiary Educational Attainment

Percent



Note: Data refer to 2003 except Italy (2002). In the U.S., data is equivalent to the share with an associate's degree or bachelor's degree or higher.
Source: OECD.

Figure 3

The red bar for the U.S. depicts tertiary educational attainment among the cohort of individuals currently aged 55 to 64 is the highest among G-7 countries. But it is also important to note that while our tertiary educational attainment has gone up, we have lost in relative terms to the other G-7 countries—most notably Japan, Canada, and France. In order to maintain our edge in the future, it will be necessary to ensure that we do not allow our investment in human capital to slip.

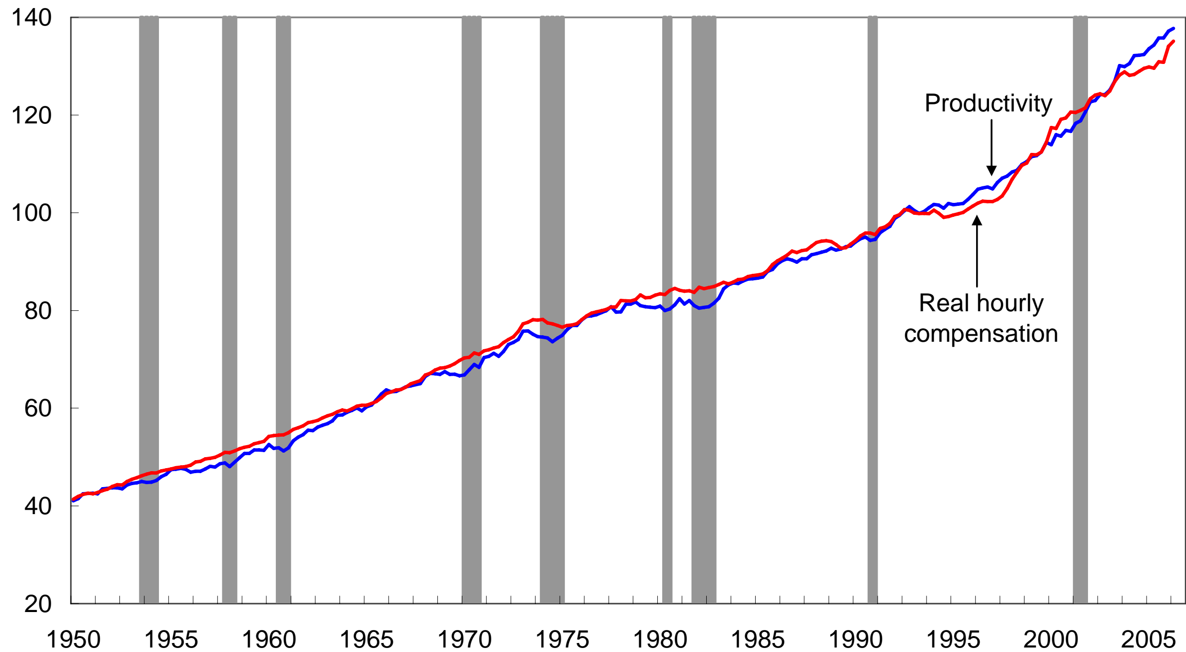
Another ingredient of economic growth is that individuals believe they have the ability to succeed in this society. When young people do not believe that they have a chance to attain levels of success commensurate with their effort, they cease trying. But the United States has always been a place where opportunities to move up are widespread. This is best illustrated by looking at the earnings of immigrants. First generation immigrants in 2003 had median incomes of about $27,000. Their children, who form the second generation, had median incomes of about $38,000, which exceeds the median income of Americans from third and higher generations.

Thus, in one generation, immigrants go from being below the median to above the median. Of course, the success that is displayed by the gains among the children of immigrants is not universal in our society and we need to continue to strive to open doors for all of our citizens. Not only is it the right thing to do, it is the only way to ensure that individuals have the appropriate incentives to invest and acquire those skills that will help the economy grow.

While output and productivity are of interest in and of themselves, they are of particular importance because wages and workers' standards of living depend on productivity, even over the relatively short run. Over the longer run, hourly compensation and productivity grow together one-for-one.

Productivity and Real Compensation Grow Together

Index 1992=100



Note: These data cover all persons (including supervisory and proprietors) in the nonfarm business sector. The real product wage is hourly compensation deflated by the price index for nonfarm output. Shaded areas denote recessions. Source: Bureau of Labor Statistics.

Figure 4

The chart shown here (Figure 4) demonstrates the very strong correlation between productivity increases and real hourly compensation. While there are periods during which the two series diverge, they tend to catch up to one another. In particular, wage growth sometimes lags productivity growth—especially coming out of recessions. That was the case coming out of the recession in the early 1990s, where hourly compensation lagged productivity in the mid-90s and caught up only during the late 90s. And it was also true after the recession that occurred in 2001. 2006 has seen significant increases in nominal wages above the levels of past years. Indeed, the nominal wage growth associated with increases in productivity has virtually offset the increase in prices associated with the unanticipated and extraordinary energy cost increases that have occurred since June of 2005. In the first two quarters of 2006, real hourly compensation grew more than 6 percent at an annual rate. If this trend continues, 2006 will be a

period during which real wage gains begin to catch up with earlier gains in productivity, despite large price hikes in the energy sector.

Our recent experience illustrates that wages and productivity do not always move together over the very short run. Figure 5 shows that growth rates in real hourly earnings have diverged from growth rates in productivity following all recent recessions (see 1972, 1978, 1983, 1992 through 1993, and 2003). It is also clear from the graph that, on average, hourly wage growth lies below output per hour growth—despite the fact that the earlier graph shows that compensation and productivity are linked one-to-one. The reason is the deviation between hourly wages and real compensation. Benefits have been growing over time, so hourly wages have grown more slowly than total compensation. Given the increase in benefits, it is natural that wages would grow by less than productivity on average because the relevant measure both from the worker and firm point of view is total compensation, and hourly wages are simply the monetary component of total compensation.

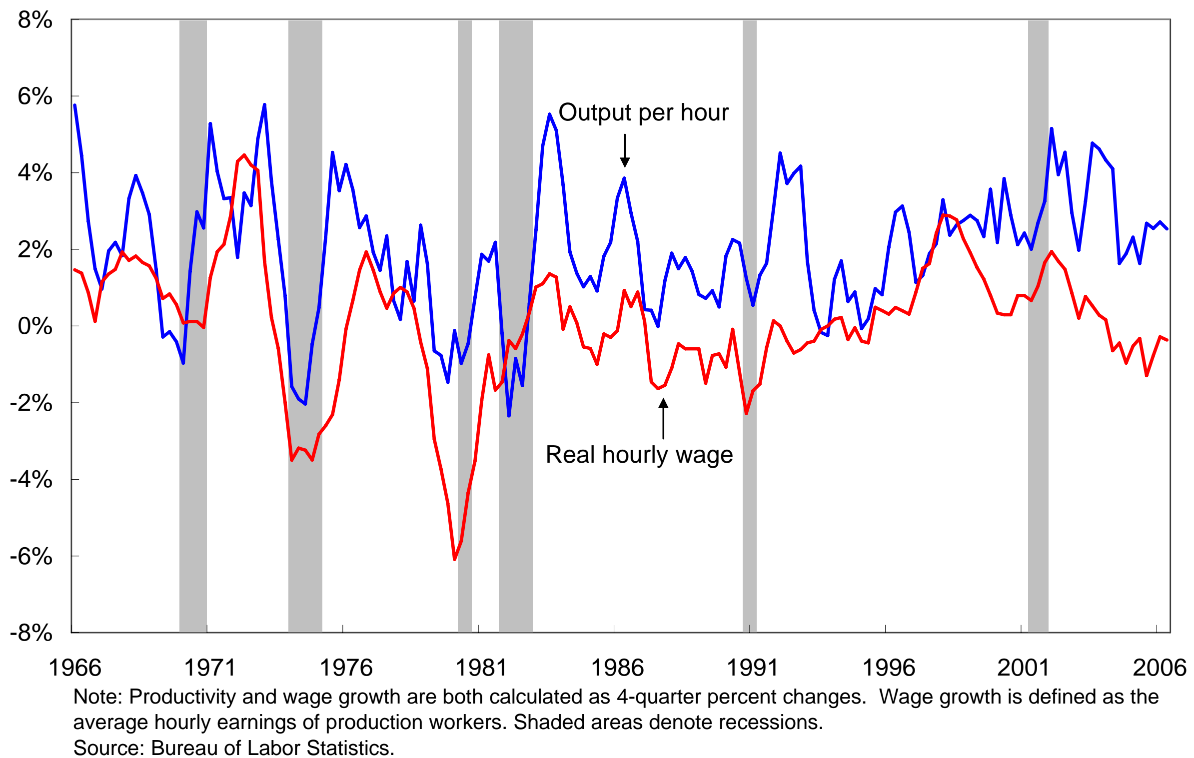


Figure 5

While wage growth lagged productivity growth in the early parts of this recovery, profits have had high rates of growth, as Figure 6 shows. This has raised the question of whether profits have displaced wages in our economy. Figure 7 speaks to this issue. Two points are apparent in Figure 7. First, corporate profits are more volatile than is employee compensation. Second, there is a distinct pattern of profits and wages over the business cycle. After the recession in the early 90s, corporate profits rose dramatically and employee compensation lagged behind. At the same time productivity grew faster than compensation (see Figure 4). Profit growth outpaced compensation growth until the late 90s when corporate profits fell dramatically.

The mild recession in 2001 was followed by productivity growth in 2002 and profit growth was again very high, while employee compensation growth was relatively low.

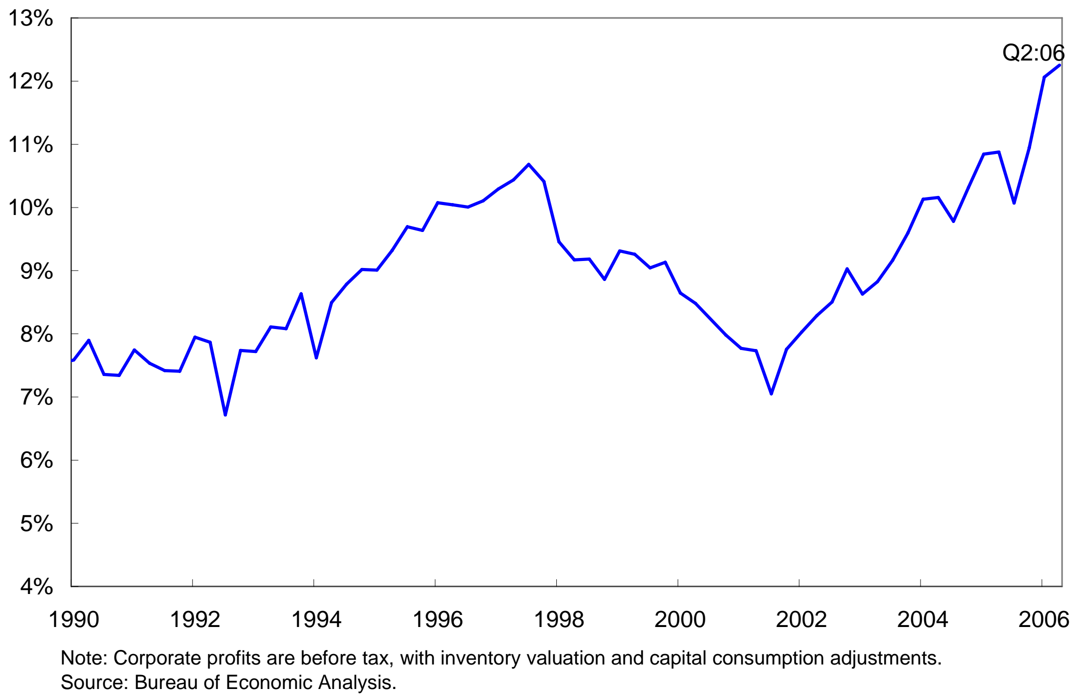


Figure 6

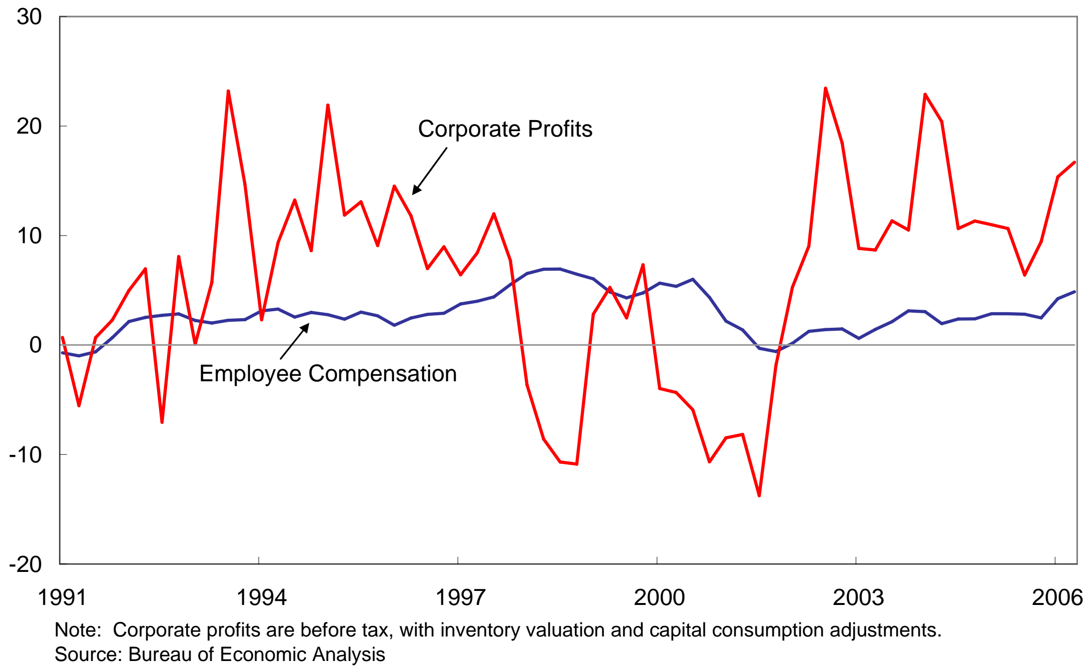


Figure 7

The pattern seems to be the following. After a recession, productivity growth increases, and wages tend to remain flat. As a result, costs stay low and profits rise. As the labor market gets tight, wages increase, eating into profits, and the profit rate declines.

Profits provide the incentive for physical capital investment, and physical capital growth contributes to productivity growth. Thus profits are important not only for investors but also for the workers who benefit from the growth in productivity coming from investment in physical capital. The last three years have seen high profitability commensurate with very high levels of productivity. Now wages are rising and our forecast is that profit rates will decline in the future, bringing them back to more normal levels. Whether real wage growth will rise to the highest levels that we have seen over the previous expansions remains to be seen, but early indications are that we are on a similar path.

Productivity gains have made an important contribution to recent output growth, but employment gains have contributed as well. As we go into the future, unemployment rates are now sufficiently low that it is unrealistic to expect to see huge gains in output from increased labor. That is true even more so as we move into the distant future, because the slowing growth of the population and the aging of baby boomers will mean a smaller supply of workers to support the economic engine.

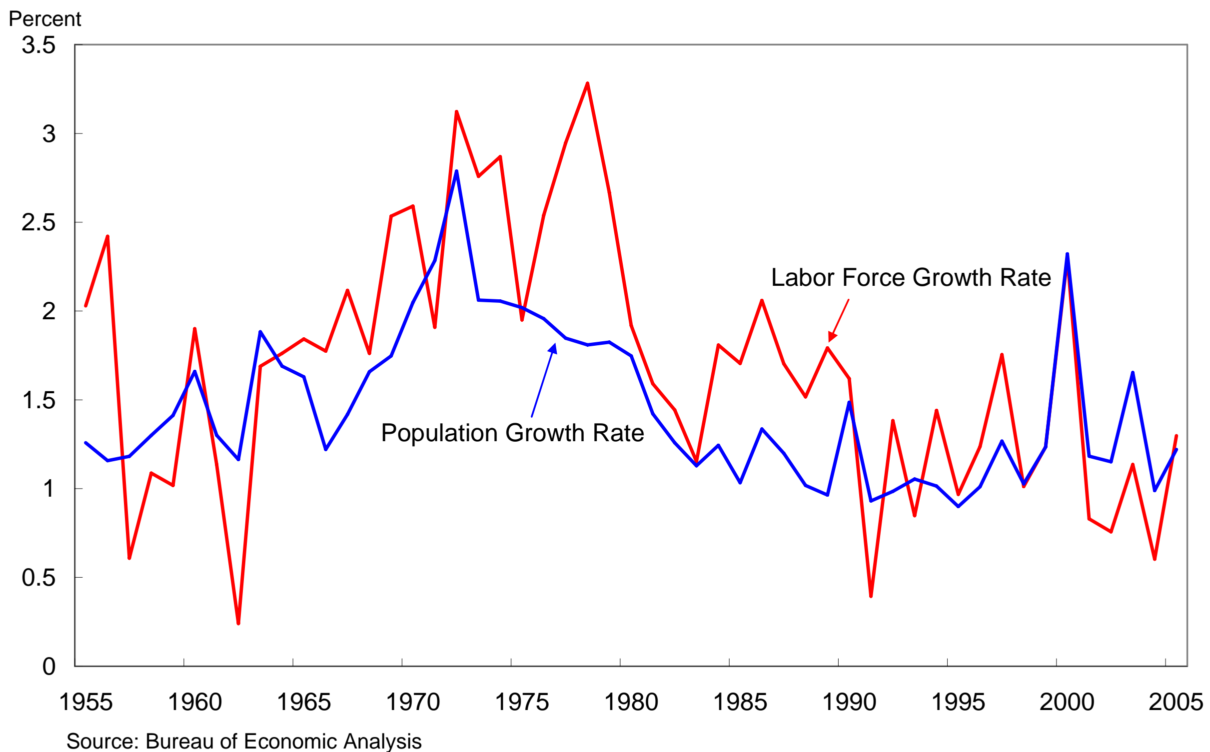


Figure 8

By far the single most important determinant of jobs in the economy is population. In Figure 8, it is apparent that there is a high correlation between population growth rates and labor force growth rates, and that population growth has slowed. In order to sustain growth in output, it will be necessary, therefore, to ensure that productivity increases. To put this in historical perspective, note that the U.S. working age population increased by 84 percent between 1950 and 2000. Between 2000 and 2050, the working age population is projected to increase by only 34 percent, while the elderly population is projected to more than double. And our situation, incidentally, is less problematic than that facing other countries. For example, Japan's working age population is expected to decline by 39 percent over that same period, and Italy's working age population will decline by 33 percent. All of these trends increase the dependency ratio and make productivity growth even more important to maintaining our standard of living.

Economic Policies

What can we do specifically to ensure that we continue to grow at high rates? First, we must make sure that marginal tax rates stay low. The most important way to encourage growth in an economy is to maintain the smallest possible difference between the before-tax and the after-tax rates of return to investments, both in physical and human capital. Raising the level of capital per worker makes workers more productive and leads to higher wages in the long run. Congress' recent actions with the President to extend the capital gains and dividends tax cuts are very positive moves in this direction. The President also continues to seek the complete elimination of the Death Tax and we believe that such a policy would help create a more favorable climate for saving.

Second, we must ensure that we do not discourage investment in human capital. The most important source of capital in the economy is the capital that is embodied in people through their skills. To make sure that individuals have incentives to invest in skills by going to college, graduate school, or vocational schools, it is necessary to keep the tax rates on wage income low. If individuals see little return to investments in their skills because of high tax rates on moderate to high wage earners, the incentives to invest in human capital will be dampened.

Third, we must remain open to foreign investment. Foreign investment has been an important source of capital for the United States. Openness to foreign capital has given the United States the flexibility it needs to deepen its capital stock and improve its productivity without necessitating a corresponding increase in domestic savings. Approximately one in 20 workers is employed in a foreign-owned firm and about 45 million workers are employed by firms that engage in international trade. To maintain current growth rates we must make sure that we keep pushing for freer trade, especially in the area of services which has become a

significant part of our economy. Finally, we must make sure that we maintain our long tradition of allowing investment capital to flow freely into our economy.

Fourth, the President has outlined a competitiveness initiative to make sure that Americans have the skills to compete in the modern world. We must continue to push for reform in K-12 education, which has been the weakest component of our human capital investment structure. Fortunately, our colleges and graduate schools are the best in the world. We export education by training large numbers of international students in our American colleges and universities and it is good for us to continue to do that, but we must also make sure that those Americans who do not go on to college also get the skills that allow them to compete in a modern American economy. Strengthening K-12 education, reducing our drop-out rates, and ensuring that all of our young citizens receive high quality education will be important not only in the near future, but as we move into the later years of the 21st Century. The President's efforts over the past several years to improve education with the No Child Left Behind Act, community college initiative, and job training reforms will help and because learning begets learning, the returns should continue into the distant future.

In conclusion, productivity grows as a result of investment in physical and human capital, which lead to new technologies, and physical and human capital are enhanced when incentives to invest remain strong. The American economy is strong and relatively unimpeded by restrictions that hinder productivity growth in other countries. We need to maintain the openness of the U.S. economic environment to ensure that productivity growth will continue to generate improvements in the typical worker's standard of living.

Again, thank you for the opportunity to discuss these issues with you.