DeLong and Summers' paper covers three principal topics. First, they document the international character of the decline in productivity growth during the past 20 years. Second, they look for macroeconomic causes of the slowdown, particularly the effect of inflation. Third, they present some evidence suggesting that the growth rate rises much more in response to investment in plant and equipment spending than for other types of investment. DeLong and Summers conclude that subsidies or incentives for equipment investment are desirable. I begin by commenting on each of these points and on their conclusion before turning to some related issues.

**Measured productivity growth**

The international character of the decline in productivity growth is well-known. The authors present the salient facts and emphasize that the slowdown is greater abroad in absolute or percentage terms than in the United States. They may wish to note that, in their Table 1, the United States and Canada are the only countries showing higher productivity growth in 1979-90 than in 1969-79, a fact that is often overlooked in discussions about international competition.

What should we make of these data? I have two comments.

First, by comparing measured growth rates for a decade they mix one-time changes to the level of output with underlying maintained rates of change. Short-term data are often misleading when interpreted
as growth rates. For example, France in the 1980s, and the United States and Canada in the 1970s, reported comparatively low productivity growth. Productivity growth was negative for industrial Latin America in the 1980s. These numbers tell us much more about cyclical adjustment and one-time changes than about long-term productivity growth rates. Productivity is typically measured as a residual. We should not put much weight on reported productivity growth rates for periods as short as a decade unless we have supporting evidence from another source.

Second, DeLong and Summers (and many others) take their problem to be one of explaining why productivity growth rates have fallen in recent decades from the higher rates reported for the 1950 and 1960s. They speculate that we may have reached the limits of technological progress.

I believe they get the wrong answer because they ask the wrong question. A much more plausible interpretation of the data for the advanced industrial countries is that the period from 1950 to 1969 (in their table) is the aberration that asks to be explained. As Table 1 shows, recent productivity growth in six of the leading industrial countries is not very different from the long-term growth rates of per capita income computed by Simon Kuznets. The Kuznets data average over 80 to 120 years. Four of the countries are close to their long-term path in the 1980s. France is one exception. France suffered from the socialism and regulation of the early Mitterand years, then paid the costs of using a fixed exchange rate to force disinflation of wages and prices. Once this adjustment is completed, French productivity growth should be expected to increase toward its historic value, if the world economy continues to grow.

The simple average growth rate for the six industrial countries in 1979-90 is 1.67 percent. For the longer period covered by Kuznets' data, the simple average growth rate is 1.85 percent. Is this difference significant economically and statistically? We are unlikely to have either measurements or models that are sufficiently accurate to be confident that a 0.2 percentage point difference in growth occurred. Nevertheless, the power of compound interest is such that a difference in growth rate of approximately 0.2 percent makes incomes almost 20
percent greater in the country with 0.2 percent faster average growth after 100 years.

I believe that DeLong and Summers (and many others) are concerned about the wrong problem. The problem as usually posed is to explain why the growth rate slowed after the mid- or late-1960s. I suggest that there is a good case to be made for the proposition that the relatively high growth rates of the early postwar years include many positive one-time changes that are unlikely to be repeated by the major industrial countries.

### Table 1
**Rates of Growth**

<table>
<thead>
<tr>
<th>Country</th>
<th>Period</th>
<th>Growth Rate Per Capita Product</th>
<th>Delong &amp; Summers Growth Rate 1979-90 Productivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>1839 to 1960-62</td>
<td>1.7</td>
<td>1.4</td>
</tr>
<tr>
<td>Japan</td>
<td>1879-81 to 1959-61</td>
<td>2.6</td>
<td>3.0</td>
</tr>
<tr>
<td>Germany</td>
<td>1871-75 to 1960-62</td>
<td>1.8</td>
<td>1.6</td>
</tr>
<tr>
<td>France</td>
<td>1841-50 to 1960-62</td>
<td>1.8</td>
<td>1.1</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>1855-59 to 1957-59</td>
<td>1.4</td>
<td>1.7</td>
</tr>
<tr>
<td>Canada</td>
<td>1870-74 to 1960-62</td>
<td>1.8</td>
<td>1.2</td>
</tr>
</tbody>
</table>


### Inflation, growth and independence

DeLong and Summers devote almost one-third of their paper to the possible effects of inflation and lack of policy independence on the decline in average growth rates. They find a negative relation between growth rates and inflation once central bank independence is taken into account. They are convinced enough by this finding to conclude that Italy could raise its average growth rate of per capita output by 0.8 percent per year if it gave the Banca d'Italia independence at the level of the Federal Reserve.
This inference is implausible. The relation on which it is based implies that the United States, the United Kingdom, or other countries would increase their normal or average annual growth rate of per capita output to 3.5 percent by adopting the same degree of independence as the Bundesbank.

Would that it were so! A 3.5 percent growth rate of per capita income would double per capita income about every 20 years. We could have lower inflation and higher growth simply by passing and following the Bundesbank law.

There is no historical evidence to support a long-run, positively sloped Phillips curve of this kind. First, before 1971, Germany did not have an independent monetary policy. For most of this period of relatively high growth, German inflation was above U.S. inflation. During the years of monetary independence, German growth is about 2 percent on average. Second, the United States and Britain were on the gold standard for part of the period included in Kuznets' calculations. Their commitments were strong and durable; both countries had accepted severe deflation to restore the gold standard at the historic price of gold. The United States did not even have a central bank for part of the period and fought at least three elections in which the monetary standard was a central issue. These defeats for William J. Bryan's populism and inflation should have established the credibility of non-inflationary policy. Yet there is no sign that credible commitment to low average inflation under the gold standard produced the results implied by the relation shown in DeLong and Summers’ Figure 6. Nor would they be likely to now. Even the proponents of European currency make less exuberant claims.

The last two sections of the paper discuss investment and present evidence supporting the authors' main conclusion: increased investment in equipment (relative to GDP) can raise the growth rate. The authors propose subsidies for investment, particularly an investment tax credit to target investment in machinery.

I accept the authors' finding about the role of equipment investment, but I question their policy conclusion. A more effective policy would shift spending from government consumption to private investment. I
would allow the market to choose the type of investment. The results in Robert Barro's paper suggest that reductions in government consumption spending (for example on medicare) would have a potent effect on the growth rate. For each one-percentage point reduction in the share of government consumption spending (net of defense and education) accompanied by a one-percentage point increase in the share of gross investment, real per capita GDP growth would increase permanently by about one-quarter of one percent.1,2

A moral of this story is that growth depends on resource use. Based on the evidence they produce, the evidence in Barro's paper, and the very tenuous evidence about long-term effects of the U.S. budget deficit found by many researchers, I am surprised that DeLong and Summers end their paper by reciting the deficit reduction mantra. A more appropriate recommendation, based on their evidence, would be a reduction in subsidies to housing as a means of reducing the budget deficit and shifting investment to more productive uses.

The clear implication of the Barro and DeLong and Summers papers is that policy can change the growth rate. DeLong and Summers write as if what can be done, should be done. I would distinguish actions that subsidize growth from actions that remove current distortions.

DeLong and Summers do not explain why the present generation should subsidize growth or capital accumulation. The growth rate that results from private decisions to save and invest is the rate that consumers and producers choose as a by-product of their market decisions. I remind you that U.S. productivity growth for the past decade is not very different from its historic average. Even if the productivity growth rate remains lower, however, there is no economic reason for subsidizing growth. Today's generation is richer than past generations but poorer than future generations. It may wish to consume more or take more leisure.

I recognize that one of the widely repeated fallacies of our era is that our children will be poorer than we are, that they will not be able to buy houses, that progress in living standards has ceased. For the average U.S. resident, these claims are nonsense. Productivity growth is positive. Total U.S. real private net worth rose 30 percent, an average
of 3 percent a year from 1979 to 1990, and real tangible net worth of households rose 21 percent, or 2 percent a year, in the same period. Despite declines in some property values at the end of the period, that contributed to a nearly $700 billion decline in real private net worth in 1991, real wealth continues to rise on average and we have every reason to expect that wealth and income will continue to rise. Our children will inherit this wealth along with the stock of knowledge, human capital, and technology that continues to increase.

One of the brakes on growth is that many people choose leisure, early retirement, and consumption over work and saving. Subsidizing investment and growth attempts to override these decisions. I doubt that policies of this kind, even an investment tax credit believed to be permanent, would succeed for long.

The final issue I want to discuss is the extent to which the postwar experience is a reliable guide for the future. The remarkable growth of the early postwar years and the recent growth rates in Asia owe much to the effort and saving of local populations. They also owe much to the greater stability of the postwar years. Reductions in barriers to trade permitted countries to choose policies such as export-led growth that are not available in a more protectionist world. Trade blocs like the European Community (EC) or the North American Free Trade Area (NAFTA), if they become or remain protectionist, reduce incentives and opportunities for countries inside and outside the bloc.

I propose that, to encourage efficiency, Article 24 of the General Agreement on Tariffs and Trade (GATT) be revised to require that when trading blocs form they must commit to a reduction of external barriers over time. Unless the countries in the bloc form a political union, external barriers would be reduced gradually until perhaps after ten or fifteen years, trade restrictions would once again be the same for members and non-members.

Reduction of trade barriers was one of the principal factors that encouraged trade and promoted postwar progress and efficiency. U.S. leadership in organizing the defense and police function permitted many countries to concentrate on peaceful pursuits, and to encourage
trade and industry instead of wars and weaponry. As I noted here last year, by providing these public goods and encouraging others to share in the effort, the United States assisted the market economies of the world to achieve an unprecedented rise in living standards for more people in more places than at any previous time. (Meltzer, 1991).

These public goods are not part of most of the models or analyses we consider here. Unless the major developed countries share in the cost of providing an institutional framework that maintains reasonable political stability, stable rules for trade and open markets, and low inflation, growth rates will remain below the long-term averages for the industrial countries and below the hopes or dreams of the less developed countries.

The future living standards of the United States, Western Europe, Japan and most others will depend much less on subsidies to investment in machinery than on a common willingness to open markets in agriculture, textiles, steel, investment, and many other items now restricted by quotas. The countries of Central and Eastern Europe and elsewhere can contribute to their own and our growth if we are wise enough to offer them open markets. In exchange, we should expect to get open markets for investment and trade. Trade, much more than aid, provided the impetus for the rise in standards of living a generation ago. It will continue to do so, if we have the wisdom to renew the institutional framework that is now unraveling.
Endnotes

1 For the U.S. at present, the order of magnitude of the adjusted government consumption and gross investment are similar, so I have not adjusted the calculation for the difference in shares.

2 Barro’s coefficient on the Investment share is consistent with DeLong and Summers estimates for equipment if the share of equipment to total Investment is about one-third. This is approximately correct for the United States.

References
