

Causes of Declining Growth in Industrialized Countries

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A clear break in the post-World War II pattern of rapid productivity growth was a virtually universal phenomenon across Organization for Economic Cooperation and Development (OECD) countries, in most of them beginning in the early 1970s. This development had implications for both the evolution of aggregate supply, as well as the growth of real income and the types of macroeconomic and structural policies needed to sustain and enhance economic welfare. The 1980s saw some signs of revival in output and productivity growth in the OECD area, but they are not yet broad enough, nor have they been sustained long enough to justify optimism about improved trends.

This conference comes at an opportune moment for assessing the causes and consequences of the slowing of output and productivity growth. In recent years economists have begun to rethink the fundamental sources of long-term growth. Although it is premature to say that a new consensus has been reached, the associated empirical work is by now sufficiently advanced that it is useful to take stock and extract the policy lessons, if any, from this effort.

Let me summarize my views up front. We know many more stylized facts than we used to about the characteristics of countries that grow fast over the long term. In brief, rapid growth is associated with high saving, well-educated work forces, and the ability to tap the technology of the leading countries. Export orientation, low government spending, and stable political systems are also often linked with good growth performance. Based on the work that I have seen, however,

the changes in these factors are insufficient to account entirely for the clear break in the postwar pattern of OECD growth.

In this paper, I will raise the possibility that part of the growth and productivity slowdown may reflect such factors as high and variable inflation and increased structural rigidities, although their impacts are extremely difficult to quantify. I shall argue that stable rules with respect to macroeconomic policymaking that allow economic agents to take a long-term view, encouragement of competitive behavior, and flexibility in labor and product markets are extremely helpful in establishing a basic environment conducive to the improvement of growth and productivity performance.

In developing my argument, I will first discuss the postwar trends in respect to OECD growth. Second, I will discuss both the "earlier" candidates for explaining the growth slowdown and more recent explanations. Third, I will stress some factors that have been relatively overlooked until now and suggest how they may alter our interpretation of the empirical evidence. Finally, I will distill some policy implications from this work, and give my views on some of the items currently on the international policy agenda that may have a bearing on the evolution of long-term growth.

Styled facts of OECD growth

In virtually all OECD countries, the slowing of business-sector output and labor productivity occurred between 1968 and 1975, with a noticeable concentration around the time of the first oil shock. Overall, the average annual growth rate of OECD business-sector output declined from 5.3 percent between 1960 and 1973 to 2.7 percent between 1973 and 1990—a slowing that can be accounted for almost entirely by the drop in the growth of output per worker (Table 1). In some countries, notably the United States, somewhat faster employment growth initially offset some of the slowdown in business-sector productivity growth. But, for the OECD as a whole, employment growth has been about the same in both the pre- and post-1973 periods.

Table 1
Business-Sector Output, Productivity and Employment Data

| | Output | | | Total Factor Productivity | | | Labor Productivity | | | Employment | | |
|--------|----------------|----------------|----------------|---------------------------|----------------|----------------|--------------------|----------------|----------------|----------------|----------------|----------------|
| | <u>1960-73</u> | <u>1973-79</u> | <u>1979-90</u> | <u>1960-73</u> | <u>1973-79</u> | <u>1979-90</u> | <u>1960-73</u> | <u>1973-79</u> | <u>1979-90</u> | <u>1960-73</u> | <u>1973-79</u> | <u>1979-90</u> |
| U.S. | 4.0 | 2.5 | 2.5 | 1.6 | -.4 | .2 | 2.2 | .0 | .6 | 1.7 | 2.6 | 1.9 |
| Japan | 10.0 | 3.5 | 4.3 | 5.9 | 1.4 | 2.0 | 8.6 | 2.9 | 3.0 | 1.3 | .6 | 1.2 |
| Europe | 4.9 | 2.4 | 2.3 | 3.2 | 1.4 | 1.3 | 5.0 | 2.7 | 2.1 | -.1 | -.2 | .3 |
| OECD | 5.3 | 2.7 | 2.7 | 2.8 | .5 | .8 | 4.1 | 1.4 | 1.5 | 1.1 | 1.3 | 1.3 |
| | <u>1979-85</u> | | <u>1985-90</u> | <u>1979-85</u> | | <u>1985-90</u> | <u>1979-85</u> | | <u>1985-90</u> | <u>1979-85</u> | | <u>1985-90</u> |
| U.S. | 2.2 | | 2.7 | .1 | | .3 | .7 | | .4 | 1.5 | | 2.3 |
| Japan | 3.9 | | 4.8 | 1.8 | | 2.4 | 2.8 | | 3.3 | 1.0 | | 1.5 |
| Europe | 1.5 | | 3.5 | 1.0 | | 1.7 | 1.9 | | 2.2 | -.4 | | 1.2 |
| OECD | 2.3 | | 3.3 | .7 | | 1.0 | 1.5 | | 1.4 | .8 | | 1.8 |
| | <u>1960-73</u> | | <u>1973-90</u> | <u>1960-73</u> | | <u>1973-90</u> | <u>1960-73</u> | | <u>1973-90</u> | <u>1960-73</u> | | <u>1973-90</u> |
| U.S. | 4.0 | | 2.5 | 1.6 | | .0 | 2.2 | | .4 | 1.7 | | 2.1 |
| Japan | 10.0 | | 4.0 | 5.9 | | 1.8 | 8.6 | | 3.0 | 1.3 | | 1.0 |
| Europe | 4.9 | | 2.3 | 3.2 | | 1.3 | 5.0 | | 2.3 | -.1 | | .1 |
| OECD | 5.3 | | 2.7 | 2.8 | | 0.7 | 4.1 | | 1.5 | 1.1 | | 1.3 |

Source: OECD, Analytical Data Base.

As the greater part of the post-1973 slowing of output growth came from labor productivity in virtually all OECD countries, I will concentrate on this element of the growth slowdown for most of my talk.¹ For simplicity I will ignore multifactor productivity, whose trends have moved broadly in line with labor productivity in most countries and whose measurement is more controversial.

One should first ask whether it is correct to focus on the post-1973 productivity slowdown. As Angus Maddison and others have emphasized, post-1973 performance is actually pretty good, if one takes a long historical perspective.² The 1950s and 1960s appear to be exceptional, in terms of the rapidity of productivity growth, as compared to the average record in the first half of this century (Table 2). In the United States, the rapid growth of the early postwar period has been attributed to an abundance of new technology that was not fully exploited due to the Great Depression and World War II. Other countries took advantage of the new opening of trade and mobility of technology following the war to catch up to the U.S. productivity level. Empirically, this sort of catch-up is important in explaining productivity growth differences between countries and changes over time within the fast-growers. Hence, some slowing was inevitable, but, in my opinion, not to the degree actually observed.

While in some countries, notably the United States and the United Kingdom, there was some apparent revival of productivity growth in manufacturing in the 1980s, productivity growth has remained low at the economywide level (Table 3). Some analysts have argued that measurement problems have led to an understatement of overall productivity growth, but the consensus is that the economywide productivity slowdown is real and cannot be accounted for by data errors.³

Causes of the slowdown

The earlier candidate explanations

The productivity slowdown more or less coincided with four important events:

Table 2
Growth in GDP per capita
Average growth rates in percent

| | United States | Japan | Europe | OECD average |
|----------------------|---------------|-------|--------|--------------|
| 1900-13 ¹ | 2.0 | 1.0 | 1.3 | 1.6 |
| 1913-50 ¹ | 1.6 | .9 | .8 | 1.3 |
| 1950-73 ¹ | 2.2 | 8.0 | 4.1 | 3.5 |
| 1973-87 ¹ | 1.5 | 2.8 | 1.8 | 1.9 |
| Memo: | | | | |
| 1960-73 ² | 2.7 | 8.3 | 3.8 | 3.7 |
| 1973-90 ² | 1.5 | 3.1 | 1.8 | 1.9 |

GDP Per Capita

| | Thousands of 1990 \$US based on PPPs | | | US = 100 | | |
|----------------------------|---|-------------|-------------|-------------|-------------|-------------|
| | <u>1960</u> | <u>1973</u> | <u>1990</u> | <u>1960</u> | <u>1973</u> | <u>1990</u> |
| United States ² | 11.7 | 16.6 | 21.4 | 100 | 100 | 100 |
| Japan ² | 3.7 | 10.5 | 17.6 | 32 | 63 | 82 |
| Europe ² | 6.4 | 10.4 | 14.1 | 54 | 63 | 66 |
| OECD ² | 7.7 | 12.3 | 17.0 | 66 | 74 | 79 |

¹ Data from Maddison (1989)

² Data from OECD (1992).

Source: Maddison (1989), OECD (1992).

Table 3
Basic Data on Manufacturing Industry
Average growth rates in percent

| | Output | | | Labor Productivity | | | Hours Worked | | |
|-------------|----------------|---------|----------------|--------------------|---------|----------------|----------------|---------|----------------|
| | 1960-73 | 1973-79 | 1979-90 | 1960-73 | 1973-79 | 1979-90 | 1960-73 | 1973-79 | 1979-90 |
| U.S. | 4.8 | 1.6 | 1.8 | 3.3 | 1.2 | 2.5 | 1.4 | .4 | -.6 |
| Japan | 12.7 | 3.2 | 5.4 | 10.2 | 5.0 | 4.1 | 2.3 | -1.8 | 1.2 |
| Europe | 5.7 | 2.2 | 1.5 | 5.8 | 4.1 | 3.2 | -.1 | -1.9 | -1.6 |
| OECD | 6.8 | 2.2 | 2.4 | 5.7 | 3.1 | 3.0 | 1.0 | -1.0 | -0.6 |
| | <u>1979-85</u> | | <u>1985-90</u> | <u>1979-85</u> | | <u>1985-90</u> | <u>1979-85</u> | | <u>1985-90</u> |
| U.S. | .7 | | 3.2 | 1.9 | | 3.1 | -1.2 | | .1 |
| Japan | 5.8 | | 4.9 | 3.9 | | 4.3 | 1.8 | | .6 |
| Europe | .4 | | 2.8 | 3.5 | | 2.8 | -2.4 | | -.7 |
| OECD | 1.7 | | 3.3 | 3.0 | | 3.1 | -1.1 | | -.1 |
| | <u>1960-73</u> | | <u>1973-90</u> | <u>1960-73</u> | | <u>1973-90</u> | <u>1960-73</u> | | <u>1973-90</u> |
| U.S. | 4.8 | | 1.7 | 3.3 | | 2.0 | 1.4 | | -.2 |
| Japan | 12.7 | | 4.6 | 10.2 | | 4.4 | 2.3 | | .1 |
| Europe | 5.7 | | 1.7 | 5.8 | | 3.5 | -.1 | | -1.7 |
| OECD | 6.8 | | 2.3 | 5.7 | | 3.0 | 1.0 | | -.7 |

Note: Labor productivity is measured as output per hour
Source: U.S. Bureau of Labor Statistics.

- the first oil price hike;
- some research and development (R&D) slowdown (mainly in the United States);
- many inexperienced workers entering labor markets as a result of the baby boom and rising female participation; and
- the breakdown of the Bretton Woods system and the financial instability that both preceded and followed it.

All of these factors have been put forward as major candidate explanations for the slowdown. There is a vast literature that attempts to quantify the impacts of the first three, and let me briefly summarize the results of such attempts. I will come back to the interaction of productivity performance and financial stability a little later.

In general, the bottom line of this work is that these supply-related factors were not significant enough to account for the bulk of the slowdown. For either energy prices or R&D to account for the bulk of the slowdown would require an impact that is greatly disproportionate to their weight in economic activity.⁴ Some analysts have argued that energy could indeed have such a disproportionate impact via a large energy-using bias in technological progress, but if that were the case, I think we would have seen far more discussion of whether high energy taxes outside of North America were key factors deterring growth.⁵ Similarly, most calculations of the impact of demographic changes yield small effects, especially when averaged over 15-20 years.⁶

Furthermore, history has provided us with some further testing of these possibilities. In the 1980s, all of these factors have been reversed without there being much effect on measured productivity. Oil prices have come down; spending on R&D as a percent of GDP increased in many countries (Table 4); the work force is more experienced in most countries (Table 5); and strike activity is well below previous levels (Table 6). Productivity growth increased in the late 1980s in most countries, but this gain is correlated with a decline in unemployment and some pickup in inflation—which is more characteristic of a demand, than supply-induced, advance. In sum, it is hard to see these three factors as prime candidates for explaining the observed changes in medium-term productivity trends in the OECD area.

Table 4
Spending on R&D as a Percentage of GDP

| | 1963 | 1975 | 1981 | 1989 |
|----------------|------------------|------|------|------|
| United States | 2.7 ¹ | 2.3 | 2.4 | 2.8 |
| Japan | 1.5 | 2.0 | 2.3 | 3.0 |
| Germany | 1.4 ² | 2.2 | 2.4 | 2.9 |
| France | 1.6 | 1.8 | 2.0 | 2.3 |
| United Kingdom | 2.3 ² | 2.0 | 2.4 | 2.3 |

¹ From Kendrick (1981).

² 1964.

Sources: OECD, Division of Science, Technology and Industry Indicators, Kendrick (1981).

Table 5
Demographic Changes

| | 1960-70 | 1970-80 | 1980-90 |
|--------------------------------------|---------|---------|---------|
| Share of labor force aged 25 or less | | | |
| United States | .20 | .25 | .21 |
| Japan | .23 | .16 | .13 |
| Europe | .20 | .20 | .19 |
| Share of women in labor force | | | |
| United States | .34 | .39 | .43 |
| Japan | .40 | .38 | .40 |
| Europe | .34 | .35 | .39 |

Source: OECD. Labor Force Statistics.

Table 6
Days Lost Due to Labor Disputes
(Millions of Days)

| | U.S.* | Japan | Germany | France* | U.K. |
|------|-------|-------|---------|---------|------|
| 1971 | 33.0 | 6.0 | 4.5 | 3.5 | 13.6 |
| 1972 | 18.0 | 5.1 | .1 | 2.5 | 23.9 |
| 1973 | 19.0 | 4.6 | .6 | 2.6 | 7.2 |
| 1977 | 21.3 | 1.5 | .0 | 2.4 | 10.1 |
| 1978 | 23.8 | 1.4 | 4.3 | 2.1 | 9.4 |
| 1979 | 20.4 | .9 | .5 | 3.2 | 29.5 |
| 1988 | 4.4 | .2 | .0 | 1.0 | 3.7 |
| 1989 | 16.5 | .2 | .1 | .8 | 4.1 |
| 1990 | 5.9 | | .4 | | 1.9 |

Note: Cross-country data are not strictly comparable because of differences in coverage.

* Adjusted to reflect change in national coverage.

Source: International Labor Organization.

More recent candidate explanations

In recent years, the "new" growth theories and the associated empirical work have greatly advanced our knowledge of the factors associated with long-run growth.⁷ To be sure, many of the factors emphasised by the "new" theories were stressed in the "old" growth economics as well. However, the emphasis on the potential productivity bonus to human and physical capital and on teasing out the factors associated with cross-country growth differences are important distinguishing features.

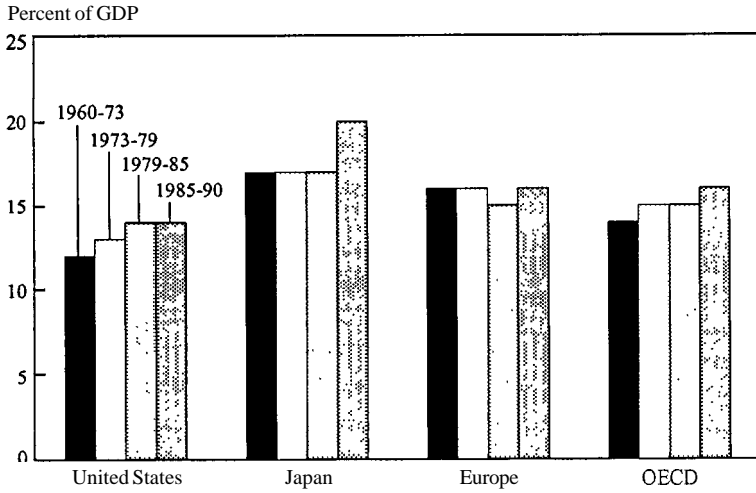
The empirical work associated with the new growth theories has in some cases produced very impressive estimated effects. According to one study (Levine and Renelt), raising the GDP share of private

investment by 6 percentage points is associated with about a one-percentage-point increase in the per capita GDP growth rate.⁸ Harris and Steindel at the New York Fed argue for somewhat smaller productivity effects for the United States than estimated by Levine and Renelt, but even so, their results show that the cumulative effects on potential output over a decade or so of higher U.S. saving and investment would be quite substantial.⁹ It is argued that this bonus to physical investment generally results from externalities coming from learning-by-doing, spillovers, demonstration effects or so-called "thick market effects" that improve productivity by enlarging markets. However, it is worth noting that, with the possible exception of spillovers, the other mechanisms generating externalities have been difficult to pin down empirically.¹⁰

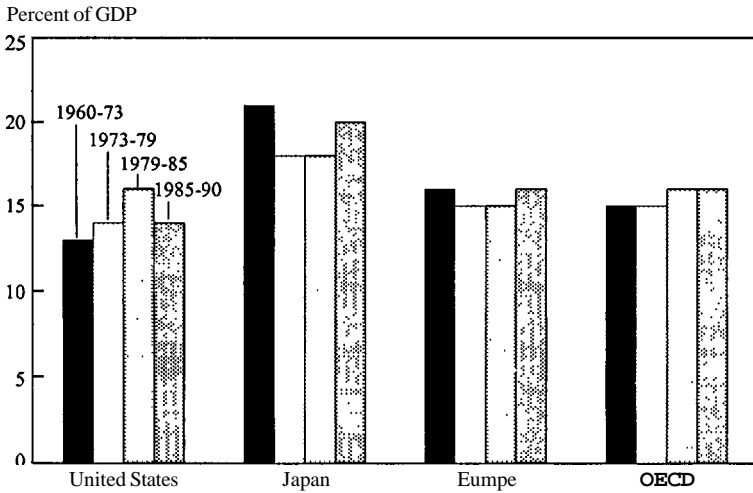
Whatever the source of this bonus to investment may be, it cannot account for the bulk of the post-1973 productivity slowdown in OECD countries. Private capital formation in the OECD area as a whole has been somewhat weaker, but not sufficiently so as to explain the slowdown (Chart 1).¹¹ As for the results of empirical studies focusing on the retrenchment of public infrastructure as a factor accounting for the private-sector productivity slowdown, some recent work at the OECD suggests that, on the one hand, the estimated magnitude seems too high, and on the other, the implied contribution of the remaining conventional factors is diminished excessively.¹² However, even if the estimated contribution of public capital formation to U.S. private-sector productivity appears unrealistically high, the widespread shift in public spending priorities to transfers and entitlements in the 1970s and the failure to rein this back in most OECD countries in the 1980s has probably adversely affected productivity performance. Indeed, work at the OECD shows that public investment as a proportion of GDP declined to very low levels in the 1980s in most OECD countries except Japan (Table 7).¹³

Human capital, mainly measured by the growth or level of education has also been found to be significant in many cross-sectional studies which have covered developing and developed countries jointly. But this factor does not sufficiently explain the OECD productivity slowdown. Most studies find that OECD education levels continued to improve after 1973 (Table 8).¹⁴

Chart 1
Investment and Capital Accumulation
Nominal Investment¹

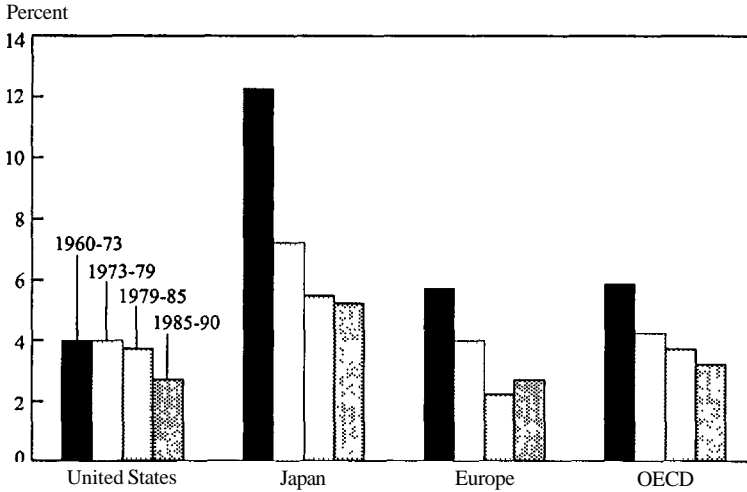


Real Investment¹



¹Non-residential business sector gross investment as percent of business sector output.

Chart 1 (continued)
 Gross Capital Stock²
 (annualized growth rates)



²The change in the gross capital stock equals gross real investment less estimated scrapping.

Table 7
Net Public Infrastructure Investment
 (As percent of GDP)

| | 1963-73 | 1973-79 | 1979-88 |
|---------------|---------|---------|---------|
| United States | 3.6 | 2.2 | 1.5 |
| Japan | 5.5 | 6.8 | 6.2 |
| Europe | 2.5 | 2.1 | 1.7 |
| OECD | 3.6 | 3.0 | 2.4 |

Source: Ford and Poret (1992).

Table 8
Educational Attainment in the OECD:
Average Years of Schooling

| Estimated by Maddison | | | |
|-----------------------|------|------|------|
| | 1950 | 1973 | 1984 |
| United States | 9.5 | 11.3 | 12.5 |
| Japan | 8.1 | 10.2 | 11.2 |
| Germany | 8.5 | 9.3 | 9.5 |
| France | 8.2 | 9.6 | 10.8 |
| United Kingdom | 9.4 | 10.2 | 10.9 |
| Estimated by Barro | | | |
| | 1960 | 1975 | 1985 |
| OECD | 6.2 | 7.3 | 8.3 |

Note: For Maddison average years of schooling in population aged 25-64. For Barro unweighted average of individual OECD countries' average years of schooling for population 25 and older.

Source: Barro (1992), Maddison (1987).

It is hard to feel confident that the route to faster productivity growth in the OECD is simply increasing the number of people in university and graduate programs. In studies where levels, rather than growth rates, of human capital are found to be important, there is again not much explanation for the downturn since a slow productivity growth country like the United States still has the most highly educated population by most measures and no OECD country shows an absolute decline in education levels. It is true that concerns have been expressed in the United States about educational quality, but most other advanced OECD countries have similarly high levels of educational attainment and slowing growth rates. Hence, if we are looking to education as the culprit for the slowdown, we have to find an explanation that holds for all countries.

Political stability is also stressed as an important determinant of growth in some of the empirical studies. While factors related to political instability cannot be ignored, they are probably far more relevant for developing countries than for OECD economies.

More fundamental causes

Despite the questions I have raised about these studies, let me stress that they have advanced our knowledge of growth processes greatly. My concern is that they may be taken too literally, that it is tempting to assume that the coefficients obtained in statistical regressions can be translated into quantitative predictions of the effects of real-world policy actions. One worry was raised above—the associations of these factors with long-term productivity performance does not encompass individual OECD country experience over the last 20 years, a long time by the standards of most of our analyses.

Apart from this, however, I wonder whether policymaking would not be helped by a focus on more fundamental causes. Let me propose a set of such basic causes for the slowdown. While this set is not opposed to the previous set, and in fact is largely complementary, it can be more helpful in identifying the desired course of policy actions to enhance productivity performance and economic welfare.

My first proposition is that the interaction of OECD inflation and productivity performance over the last 30 years merits more attention (Table 9). In part, high and variable inflation affects productivity performance adversely by distorting the investment decisions that are made. While one can find different estimates of these and other costs of inflation in different studies, ranging from small to quite substantial, it is difficult to forget the twisted allocations of time and resources that came from the interactions of inflation with accounting and tax systems, and the anguish felt by the least sophisticated investors as they saw the value of their savings **diminished**.¹⁵ It may not have been accidental that the OECD productivity slowdown in the 1970s followed the deterioration of price performance in many OECD countries which led to the breakdown of the Bretton Woods system. Indeed, there is some preliminary empirical work at the OECD which lends support to this **proposition**.¹⁶ Although inflation is by now its lowest

in 20 years in most OECD countries, residual uncertainty and credibility problems may be limiting an underlying improvement in productivity performance.

Table 9
OECD Inflation Rates¹
(Annualized Growth Rates)

| | 1960-73 | 1973-79 | 1979-85 | 1985-90 |
|---------------|---------|---------|---------|---------|
| United States | 3.6 | 8.0 | 6.3 | 3.7 |
| Japan | 6.0 | 8.1 | 2.5 | 1.2 |
| Europe | 5.2 | 11.2 | 8.5 | 4.6 |
| OECD | 4.4 | 8.8 | 6.2 | 3.5 |

¹ Growth of implicit GDP deflator.

My proposed explanations for the slowdown extend beyond inflation shocks to embrace the increasing structural rigidities and growing ossification of economies, increases in rent-seeking activities, exemplified by the growth of nontariff barriers and impediments to trade, and the problems that some financial markets have experienced in channeling investment funds toward **long-term** productive uses.

It is striking that there is some evidence that the 1960s, which we view in retrospect as a relatively tranquil period, showed more shifts in resources across sectors than the post-1973 period, when large supply and demand shocks might have been expected to induce such transfers.¹⁷ The willingness of labor and investors to shift resources from one sector to another depends largely on their confidence that the rewards of such shifts exceed the rewards of attempting to preserve old structures. The rise in **NAIRUs** (the unemployment rates that are consistent with stable inflation) in most OECD countries suggests a **marked** deterioration in the efficiency of labor markets, at considerable economic and social cost.

Labor market rigidities perpetuated and magnified the initial productivity growth slowdown in OECD countries. For several years after the first oil shock, real wage growth in most countries did not slow down in line with productivity. This resulted in a sustained increase in the labor share of national income, and a compression of profits in most OECD countries. The wedge that emerged between real wage and productivity growth contributed to a rise in the NAIRU, tending to reduce levels, if not growth rates of potential output—whether or not there is a link between the slowing of productivity growth and subsequent higher unemployment is unclear.¹⁸

Another avenue by which structural problems may have affected OECD productivity trends is by altering the efficiency (or "the quality"), as opposed to the quantity, of investment. Let me give a few examples. Unfettered flows of direct investment across national boundaries as well as domestic investment are obviously desirable—in principle, foreign direct investment (FDI) serves to integrate economies, transfer technologies, and allow benefits from specialization. As such, it may contribute disproportionately to productivity growth. However, the benefits of FDI may be largely lost if other motives are at work—such as the shift of export industries' production base from home to foreign countries in an effort to avoid tariff and nontariff barriers. Some such motivation appears to underlie the pattern of Japanese foreign investment in recent years (Tables 10, 11). Indeed, such FDI essentially represents insurance against the risk of higher trade barriers, insurance that is both unnecessary in a well-functioning trading system and undesirable. In short, trade protectionism may distort the pattern, and damage the efficiency, of both domestic and foreign investment.

Table 10
Japanese Outward Foreign Direct Investment (% of Total)

| | 1981 | 1985 | 1990 |
|---------------------------|-------------------|-------------|------|
| European Community | 7.7 | 14.8 | 23.4 |
| United States | 26.2 | 44.2 | 45.9 |
| Asia | 13.7 ¹ | 11.6 | 12.4 |

¹ 1982

Source: OECD. DAFPE

Table 11
Export Restraint Arrangements 1987-88¹

| | September 1987 | May 1988 | Reported increase between September 1987 and May 1988 |
|---|-------------------|------------------|---|
| Total export restraint arrangements ¹ | 135 | 261 | 126 ² |
| <i>By protected markets</i> | | | |
| European Community | 69 ³ | 138 ⁴ | 69 |
| United States | 48 | 62 | 14 |
| Japan | 6 | 13 | 7 |
| Other industrial countries | 12 | 47 | 35 |
| Eastern Europe | -- | 1 | 1 |

¹ Includes voluntary export restraints, orderly marketing arrangements, export forecasts, basic price systems, industry-to-industry arrangements, and discriminatory import systems. Excludes restrictions under the Multifiber Arrangement.

² Of the reported increase, almost half were in existence prior to 1988 but were reported by GATT only in 1988.

³ Includes 20 arrangements involving individual EC member states.

⁴ Includes 51 arrangements involving individual EC member states.

Source: Kelly, *et al.* (1988).

Other than the oil price shock, the great macroeconomic event of the early 1970s was the breakdown of the international monetary system based on fixed exchange rates. Whatever the merits of flexible exchange rates in principle, the subsequent period was marked by large nominal and real exchange rate fluctuations. Under these conditions, FDI could represent a way of buying real exchange rate insurance for investors and, as such, would be completely rational. However, if the movements of exchange rates did not reflect fundamentals, but rather derived from mistaken policies or other sources, the resulting pattern of investment might not be as productive as that which would emerge in a more stable environment.

The fragility of the financial system and its institutions in recent years, stemming from bad loans and irregular transactions, and the

debt problems of the corporate and household sectors in a number of OECD countries, also seem to suggest that capital markets may not have fulfilled their function of allocating savings to their most productive uses. Indeed, a number of observers have expressed concern that the overall trend toward liberalization in financial markets has not produced healthy results. For example, in a recent paper, Burton Malkiel has provided evidence that U.S. stock prices reflect short-term growth prospects far more now than in the 1960s, giving managers of firms an incentive to focus investment decisions on the short run.¹⁹ However, I shall argue later that the increased financial market volatility, sustained deviations of capital market prices from fundamentals, and misallocation of savings that occurred in the 1980s should not be taken as unavoidable, natural consequences of financial market deregulation. But the bottom line may be that, effectively, we have a smaller capital stock than is shown in national accounts data.

I am taking the liberty of a speechmaker to raise many questions that I cannot answer in a completely satisfactory way. The observable implications of both the new growth theories and my proposed explanations are largely the same. Analytically, the question is whether the slowing of productivity growth is associated with a set of more fundamental factors that are not captured in the data typically used by economists in evaluating the sources of productivity growth. In order to test this hypothesis rigorously, we would need a set of empirical proxies for structural factors. Such factors are notoriously difficult to quantify and there has been some natural tendency to look under better-lit lampposts.²⁰ At the OECD we are engaged in a substantial effort to develop indicators of structural flexibility and rigidities. Analytical underpinning of such indicators and their quantification, even imperfectly, would be of great help in guiding policy toward sectors of the economy whose functioning may be adversely affected by distortions of various sorts. However, such exercises are highly data- and resource-intensive, and their success would depend greatly on cooperation by member countries in developing and providing statistical measures.

For policymakers the question is to which set of problems they should direct their attentions. Should the regression coefficients of the new growth literature be read literally as suggesting that increases in

saving and in investment in physical and human capital could increase productivity growth substantially? To the extent that my proposed explanatory factors are an important component of productivity growth, then increased investment in physical and human capital will not yield the expected outcomes, unless accompanied by sound macroeconomic management and structural reforms. Conversely, a set of macroeconomic and structural policies that improves incentives and flexibility in the private sector may of its own raise saving, investment, and productivity, ultimately proving more effective than aggressive policy interventions to push up the investment rate.

Policy implications

Much good policy advice—resist inflation, do not interfere with markets, encourage competition and trade, do not expropriate the returns to labor and capital—is at least 200 years old, probably older. So it is difficult to be too imaginative in offering policy advice, especially when good policy in the long run often means being consistent and resisting short-term fixes.

Some policies are easy to advocate because they are consistent with what would be considered good policy for other reasons. Stability, consistency, and credibility in macroeconomic policy management are important. It is difficult for the private sector to make long-term plans when policy goals are not adhered to. There are many good reasons to pursue prudent monetary and fiscal policies, even if productivity gains are possibly long-term and their size uncertain. One can point to fiscal deficits that got out of hand in the 1970s in most OECD countries—and the subsequent excessive reliance on monetary policies in containing inflationary pressures in the 1980s—as a major mechanism that compounded the supply slowdown with **contractionary** monetary policies (Table 12). You do not have to be in favor of crash investment programs to recognize that there is good reason to avoid crowding out and disincentives to saving and investment.

As I noted earlier, the outcomes of many asset allocation decisions made in the 1980s have given rise to concern about the functioning of deregulated financial markets. However, the increased volatility in financial markets in the 1980s may have been, at least in part, a result

Table 12
Trends in Government Spending and Deficits
As percent of GDP

| | Period Average | | | | Selected Years | | | | |
|---------------------------|----------------|---------|---------|---------|----------------|------|------|------|------|
| | 1960-73 | 1973-79 | 1979-85 | 1985-90 | 1960 | 1973 | 1979 | 1985 | 1990 |
| Budget Deficits | | | | | | | | | |
| U.S. | -.3 | -.9 | -2.2 | -2.5 | .7 | .5 | .4 | -3.1 | -2.5 |
| Japan | .9 | -2.8 | -3.3 | 1.0 | 1.7 | .5 | -4.7 | -.8 | 2.9 |
| Europe | -- | -3.5 | -4.8 | -3.6 | -- | -1.1 | -4.0 | -4.9 | -3.5 |
| Government Outlays | | | | | | | | | |
| U.S. | 29.5 | 32.6 | 35.6 | 36.6 | 27.0 | 30.6 | 31.7 | 36.7 | 36.0 |
| Japan | 19.5 | 28.4 | 33.1 | 32.3 | 17.5 | 22.4 | 31.6 | 32.3 | 32.3 |
| Europe | 34.8 | 43.4 | 48.3 | 48.3 | 31.3 | 38.5 | 45.6 | 49.4 | 48.4 |

Source: OECD, National Accounts.

of the mismanagement of macroeconomic policies which disturbed the proper formation of expectations in the financial markets. In part also, perhaps, private financial institutions and market participants themselves had to learn how to act in a deregulated environment. In some cases, regulatory reform and elimination of rigidities in other sectors did not proceed apace with financial market reforms, possibly inducing some economic agents and financial intermediaries to make investments that they would not otherwise have done. In fact, financial liberalization itself has not gone far enough in many OECD countries in the 1980s. More complete financial liberalization would allow market participants to vote more freely with their money, if not their feet. At the same time, there is probably room for better supervision and a better understanding of the forces leading to financial market volatility.

Establishing a well-administered and well-respected set of rules for the international trading system under the Uruguay Round and beyond would be very useful in encouraging both the private and public sectors to devote their attentions to more profitable activities in competitive markets in a global context. The failure to complete the Uruguay Round, in spite of several well-published deadlines, sends a signal that rent-seeking and protectionist interests may have the upper hand over the interests of the general public. Members of regional trading blocs have to be especially watchful that their policies with respect to trade in goods and services do not distort trade and capital flows with countries outside the blocs. I think a consensus is beginning to emerge that, even for countries within the trading blocs, benefits will be maximized if trade barriers with outside areas are lowered rather than raised. Despite this consensus, I am worried that when countries enter cyclical downturns, it will be easy and even popular to hold off lowering trade barriers with the outside and raise new ones.

In many countries directing labor market policies toward encouraging job seeking and human capital formation would have multiple benefits: reducing unemployment directly, preventing the erosion of human capital that comes from long periods of unemployment, and encouraging new entrants to the labor force to acquire the human capital that will make them both employable and flexible. Some recent OECD work (Englander and Egebo) which focused on European

Monetary System (EMS) countries, but which has broader applications, illustrated how labor market rigidities could greatly increase adjustment costs following negative supply or cost shocks.²¹

In sum, major policy efforts will be needed over this decade to improve productivity performance relative to the previous two decades. However, I do not think there is a magic bullet. Our best strategy would be to aim at establishing an economic environment in which longer-term productivity-enhancing activities are encouraged. This will require, in part, sound, stable, and credible macroeconomic policy rules that allow economic agents to take a long-term view. At the same time, it will also require a broad range of structural reforms to increase flexibility economywide. Given the inherent uncertainty of our knowledge of the factors underlying productivity growth, such a broad-based program stands a better chance of success than approaches that emphasize more aggressive interventions across a narrower set of policies.

Endnotes

¹Output will refer to business-sector output, and productivity to business-sector output per worker unless otherwise stated

²Maddison (1989). Baumol and others (1989).

³Gordon and Baily (1991), Denison (1985), Englander (1991). To quote the conclusions of a recent conference at the OECD that dealt with the measurement error question (OECD, 1991), . . . the perception of a productivity growth slowdown reflects real phenomena beyond evident measurement error and would unlikely be changed significantly by just improving measurement tools and approaches, though such improvements are indeed necessary.

⁴Denison (1985), Grubb (1986), Solow (1987), Englander and Mittelstädt (1988).

⁵Dale Jorgenson has been an articulate proponent of the energy-using bias view. See, for example, Jorgensen (1990).

⁶Denison (1985), Maddison (1987).

⁷Lucas (1985) and Rower (1990) are seminal articles. For a readable review, see Stern (1991).

Causes of Declining Growth in Industrialized Countries

⁸Levine and Renelt (1992).

⁹Harris and Steindel (1991).

¹⁰Jaffee (1986), Bernstein (1987) estimate spillover effects.

¹¹Gross investment as a share of GDP (the **Investment variable** used in many **empirical** studies) has been relatively stable in OECD countries. Net capital formation (gross investment minus scrapping) has slowed more markedly, but its empirical effects are not out of line with what standard neoclassical economics would have suggested.

¹²Aschauer (1989, 1990), Aaron (1990). Ford and Poret (1991).

¹³Oxley and Martin (1991). The share of public investment in total government expenditures also fell sharply.

¹⁴Jorgenson and Fraumeni (1991). Maddison (1989) and Barro (1992) find an overall improvement in labor quality in the 1980s. (In Jorgenson and Fraumeni the noneducation sector corresponds closest to the aggregate **business** sector). In general, the contribution of labor quality is small relative to the size of the productivity slowdown.

¹⁵For example, McTaggart (1992) and Howitt (1990) find a substantial **productivity** benefit to lowering inflation.

¹⁶For example, a preliminary empirical study by OECD staff finds that a 10-percentage-point increase in inflation is associated with about a one-percentage-point slowing of productivity growth for a sample of 18 OECD countries over three periods (1960-73, 1973-79, and 1980-90). Other explanatory variables incorporated in the estimation are capital accumulation, labor force growth, educational attainment, convergence to the productivity-leading countries (the United States), and dummy variables for the 1973-79 and 1980-90 periods. The **significance** of inflation variables, even in the presence of the **post-1973** variables, suggests that the **estimated** inflation effect is not capturing supply shocks that were common to the OECD countries, but rather differences in the response of economic policies or economic structure among OECD countries. These **estimated** effects are larger than those found in studies, such as Fischer (1992) and Corbo and Rojas (1992). that include developing countries.

¹⁷United Nations Economic Commission for Europe (1981).

¹⁸One of the research mandates given to the OECD at the recent Ministerial meeting is to examine the causes of, and explore **solutions** to, the problem of persistently high unemployment.

¹⁹Malkiel (1992).

²⁰Exceptions are Olson (1992), Lindbeck (1983) and Baumol and others (1989)

²¹Englander and Egebo (1992).

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