III

Meeting the Challenges of Globalization in the Advanced Economies

Globalization refers to the growing economic interdependence of countries worldwide through the increasing volume and variety of cross-border transactions in goods and services and of international capital flows, and also through the more rapid and widespread diffusion of technology. It presents economies and policymakers with both new opportunities and new challenges. On a broad level, the welfare benefits of globalization are essentially similar to those of specialization, and the widening of markets through trade, emphasized by classical economists. By enabling a greater international division of labor and a more efficient allocation of savings, globalization raises productivity and average living standards, while broader access to foreign products allows consumers to enjoy a wider range of goods and services at lower cost. Globalization can also confer other benefits by, for instance, allowing a country to mobilize a larger volume of financial savings (as investors have access to a wider range of financial instruments in various markets) and increasing the degree of competition faced by firms.

International commerce and competition, and hence globalization, are, like technological progress, fundamental sources not only of economic growth but also of structural change in economies. Market economies are dynamic systems engaged in a continuous process of structural change. Economic progress is in large part a result of successful adaptation and adjustment to such change. It entails not only the growth of overall production but also a continuous reproportioning of the sectors of the economic system and of the structure of employment, along with changes in income distribution. While society as a whole benefits from this process of economic development, the gains are unlikely to be evenly distributed. Some groups may initially gain a great deal, while others may benefit only gradually or suffer setbacks. A question that has been raised about globalization is whether it adversely affects large segments of society.

Thus the increasing integration of both developing and transition countries into the global economy has sparked concerns that competition from "low-wage economies" will displace workers from high-wage manufacturing jobs to lower-wage service employment, and in doing so depress living standards in the advanced economies. A related concern is that globalization will decrease the demand for less-skilled labor in the advanced economies, thereby adversely affecting the distribution of income by widening the gap between the wages of less-skilled and more-skilled workers, as well as by raising unemployment among the less skilled. Yet other perceived undesirable consequences of globalization, especially financial globalization, are that it may erode the capacity of national authorities to manage economic activity and constrain governments' choices of tax rates and tax systems.

This chapter examines two sets of issues related to the increasing integration of the world economy that are of particular interest to the advanced economies. One, how has globalization affected wages, the sectoral shares of employment, and income distribution in the advanced economies? And what are its implications for labor market policies and social safety nets? Two, to what extent has globalization increased policy interdependence and reduced national policy sovereignty?

Features of Modern Globalization

Economic integration among nations is not a new phenomenon. Indeed, the increasing integration of the world economy in recent decades can in many ways be seen as a resumption of the intensive integration that began in the mid-1800s and ended with World War I. During that period, artificial barriers to economic exchange among countries were few; as a result, the flows of goods and capital across borders, as well as migratory flows, were large (see Annex). That earlier period was also characterized by dramatic economic convergence in per capita incomes among today's industrial countries.[10]

In some respects, however, the recent process of global integration is qualitatively different from that of the earlier period. A larger part of the world and a larger number of independent countries are participating in it. New technological advances have sharply reduced transportation, telecommunication, and computation costs, greatly increasing the ease with which national markets may be integrated at the global level

[10]See Jeffrey G. Williamson, "Globalization, Convergence, and History," *Journal of Economic History*, Vol. 56 (June 1996), pp. 277–306, and Kevin H. O'Rourke, Alan M. Taylor, and Jeffrey G. Williamson, "Factor Price Convergence in the Late Nineteenth Century," *International Economic Review*, Vol. 37 (August 1996), pp. 499–530.

Table 11. Costs of Air Transportation, Telephone Calls, and Computer Price Deflator
(In 1990 U.S. dollars unless otherwise indicated)

Year	Average Air Transportation Revenue per Passenger Mile	Cost of a Three-Minute Call, New York To London	U.S. Department of Commerce Computer Price Deflator (1990 = 1,000)
1930	0.68	244.65	...
1940	0.46	188.51	...
1950	0.30	53.20	...
1960	0.24	45.86	125,000
1970	0.16	31.58	19,474
1980	0.10	4.80	3,620
1990	0.11	3.32	1,000

Source: Richard J. Herring and Robert E. Litan, *Financial Regulation in the Global Economy* (Washington: Brookings Institution, 1995), p. 14.

(Table 11). Economic distances have shrunk and coordination problems have diminished to such an extent that in many cases it has become an efficient method of industrial organization for a firm to locate different phases of production in different parts of the world. The structure of foreign trade has increasingly become intra-industry and intrafirm, and foreign direct investment (FDI) serves as an important vehicle of globalization. More and more, countries depend on each other for technology transfer and learn from each other manufacturing methods, modes of organization, marketing, and product design. Research and development (R&D) spillovers are thus another aspect of economic linkages among countries (Box 6). Moreover, these various elements of globalization—trade, direct investment flows, technology transfers—have become more closely linked and interconnected, and the world economy is becoming, more and more, the relevant context for economic decisions.

Two groups of factors have played an important role in the growing integration of the world economy. One is technological advances, particularly in information and communications, which allow firms to coordinate production activities in different locations in cost-effective ways, allow new technologies or know-how to spread more quickly and widely, and generally reduce frictions to world commerce. The influence of technological advances in overcoming the natural barriers of space and time that separate national markets has been most evident in financial markets. Policies have also played a role in the integration of national economies. Countries have lowered artificial barriers to the movement of goods, services, and capital. The Bretton Woods institutions, the Organization for Economic Cooperation and Development (OECD), and the General Agreement on Tariffs and Trade (GATT) (now WTO) framework of multilateral trade liberalization have played pivotal roles in encouraging a growing number of countries to adopt open, market-based economic systems. An indication of countries' increasing orientation toward open economic systems is provided by the rising number of countries that have accepted the IMF's Article VIII obligations of convertibility of currencies for current account transactions. That number has risen sharply from 35 in 1970 (30 percent of the membership) to 137 in early 1997 (76 percent of the membership).

Extent of Globalization

How globalized have markets become? This question mainly concerns the integration of product and capital markets. Labor markets remain highly segmented by immigration policies and by language, cultural, and other barriers to the international movement of labor. Although residents born abroad, as a share of total population, have been increasing in many advanced economies, their number is still below 5 percent in most countries and exceeds 10 percent in only four. It does not appear that labor markets have become more integrated in recent decades.[11]

One measure of the extent of product market integration is provided by the ratio of trade to output. By this measure, product market integration has doubled since 1950 and has risen significantly in the past decade. This measure likely understates the degree of integration, however, because an increasing share of output in advanced economies consists of services, a large proportion of which are nontradable. The importance of international trade appears to be much greater when merchandise trade is measured in proportion to the production of tradable goods.[12] Another way of assessing the degree of product market integration is to examine the extent to which prices for internationally traded products converge across countries. Empirical studies have consistently found large and persistent deviations from the law of one price for a wide range of traded goods, except for some highly homogeneous commodities, such as gold. This may be attributed to various adjustment costs and trading frictions, including transportation costs, tariff and nontariff barriers, and information costs. Thus, even though international goods markets are becoming increasingly integrated, they are clearly not yet as integrated as domestic goods markets.[13]

[11]Measured by the number of workers moving across borders, labor markets were much more integrated in the early part of the century than they are today.

[12]For instance, for the United States, merchandise exports as a share of total output rose from 3.6 percent in 1950 to 7.3 percent in 1992, while as a share of tradables output they rose from 8.9 percent to 34.8 percent over the corresponding period.

[13]For a review of the empirical evidence on absolute and relative purchasing power parity, see Kenneth Rogoff, "The Purchasing Power Parity Puzzle," *Journal of Economic Literature*, Vol. 34 (June 1996), pp. 647–68. Some estimates of the economic significance of the national border relative to physical distance in explaining deviations from the law of one price is provided by Charles Engel and John H. Rogers, "How Wide Is the Border?" *American Economic Review*, Vol. 86 (December 1996), pp. 1112–25.

Capital markets have also become more integrated, especially over the past two decades or so. The degree of capital market integration is discussed in greater detail below. Here, it is simply noted that despite the phenomenal growth of cross-border flows and the rapid progress toward the integration of financial markets, financial globalization seems to be confined to heavily traded, highly liquid financial assets, while countries' overall investment performance continues to be determined predominantly by their domestic saving rates rather than by net capital inflows. International capital mobility is sufficiently high, nonetheless, and the highly integrated segment of the capital market is sufficiently large to exercise tighter constraints than in the past on the conduct and effectiveness of macroeconomic policies.

Causes and Implications of Deindustrialization

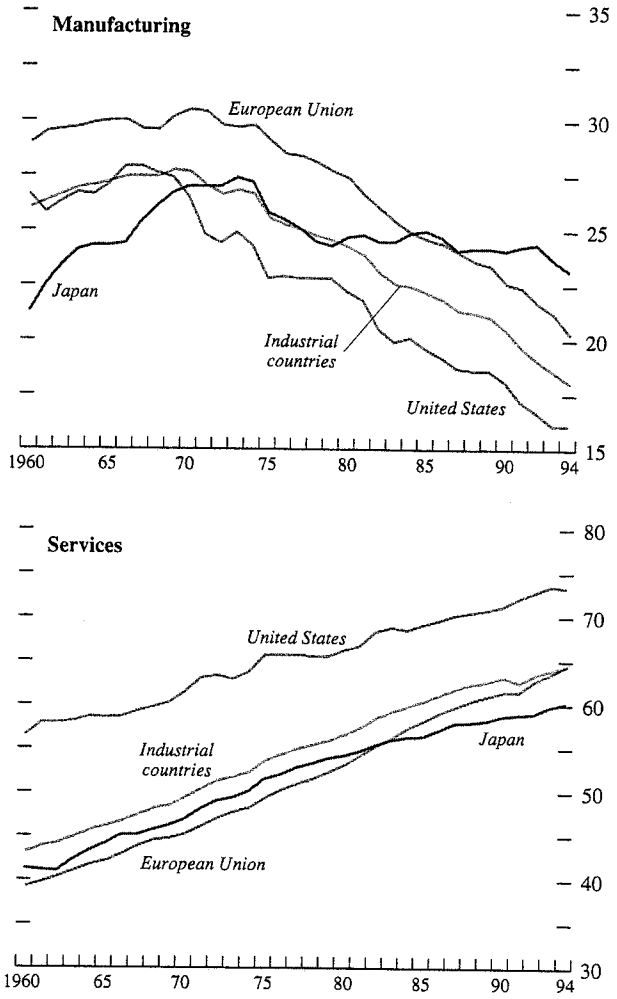
Manufacturing employment as a share of total employment has declined continuously in most advanced economies since the beginning of the 1970s. This decline—a phenomenon often referred to as deindustrialization—has coincided with the growing global integration of markets and economies. The perception is common that deindustrialization is a consequence of increased openness and trade. Contrary to popular perceptions, however, deindustrialization is not a result of globalization, nor is it a negative phenomenon; rather, as argued below, it is a normal feature of technological progress and economic development in advanced economies, and trade with the developing countries has had relatively little to do with it. The following analysis first considers the case of the "old" industrial countries; the more recent experience of the newly industrialized economies is considered subsequently.

For the industrial countries as a whole, the share of manufacturing employment declined from about 28 percent in 1970 to about 18 percent in 1994 (Chart 18). The extent of the decline varies across countries, as does the time at which the process of deindustrialization started. Deindustrialization began as early as the mid-1960s in the United States, and the trend there has been one of the most pronounced, with the share of manufacturing employment declining steeply from about 28 percent in 1965 to 16 percent in 1994. In the European Union countries as a group, the share of manufacturing employment began declining later, but the fall became just as steep as in the United States, from over 30 percent in 1970 to 20 percent in 1994. In Japan, the decline in the share of manufacturing employment began later still and was less precipitous than in other countries, the share falling from a high of 27 percent in 1973 to about 23 percent in 1994. On current trends, the share of employment in manufac-

Chart 18. Selected Advanced Economies: Employment by Sector as a Share of Total Civilian Employment

(In percent)

The share of manufacturing employment has fallen in all industrial countries, while the share of services employment has risen.



Box 6. Global R&D Spillovers

National economies are interdependent. Each country depends on the supply of consumer goods, intermediate products, and capital goods from its trade partners, and each relies on its trade partners to provide markets for its own products. It is also becoming more and more apparent that countries rely on each other for transfers of technology, which also link their economic performance. This box summarizes some recent work evaluating the quantitative importance of research and development (R&D) and trade in influencing total factor productivity and output growth.[1]

In this work, existing estimates of international R&D spillovers—among industrial countries and from industrial to developing countries—were incorporated into an augmented version of MULTIMOD, the macroeconomic model of the international economy developed at the IMF. The estimates link productivity to business sector spending on R&D. More specifically, total factor productivity is assumed dependent on the domestic stock of R&D (for industrial countries), the trade-weighted average of foreign R&D stocks, and the openness of the economy (for developing countries).[2] The augmented version of MULTIMOD consists of linked econometric models for each of the seven largest industrial countries, the other industrial countries as a group, and four "regions" representing the newly industrialized economies, the net debtor developing countries of Africa and the Western Hemisphere, and other developing countries. The model was used to simulate changes in R&D expenditures in the industrial countries, and in the exposure to trade of the developing countries, to obtain estimates of induced changes in total factor productivity, capital, output, and consumption.

The results illustrate several features of the gains from R&D (*see chart*).

- *Increases in R&D spending in an economy can significantly raise the long-run level of domestic output.* For instance, it is estimated that a sustained increase in R&D investment in the United States equivalent to ½ of 1 percent of GDP, which corresponds to a long-run increase in the stock of R&D of 10 percent of GDP, raises the level of U.S. real output by about 9 percent in the long run. About three-fourths of this gain comes though increases in total factor productivity and the remainder from higher investment in physical capital induced by higher total factor productivity. Half of the output gains occur during the first fifteen years. Over a period of a decade or two, therefore, sustained increases in R&D generate a significant boost to economic growth.
- *R&D spending can also generate significant spillovers, as R&D spending in one country raises output in other countries.* For example, when all industrial countries raise R&D spending by an amount equivalent to ½ of 1 percent of GDP, the long-run output gain in the United States is 70 percent higher than when only U.S. R&D spending rises. As the size of output spillovers among countries depends largely on their trade links, the spillovers tend to be particularly large among the European countries and between the United States and Canada. Nevertheless, output spillovers to developing countries tend to be larger than to industrial countries, reflecting the wider technology gap between industrial countries and developing countries.
- *Real consumption follows a similar pattern to output but with less variation across countries.* Consumption rises by less than output in the country carrying out the R&D, while it rises by more than output in

[1]For detailed results see Tamim Bayoumi, David T. Coe, and Elhanan Helpman, "R&D Spillovers and Global Growth," IMF Working Paper 96/47 (May 1996).

[2]The estimates of international R&D spillovers used in the simulations, which underline trade relations as the major transmission mechanism, are taken from David T. Coe and Elhanan Helpman, "International R&D Spillovers," *European Economic Review*, Vol. 39 (May 1995), pp. 859–87 and David T. Coe, Elhanan Helpman, and Alexander W. Hoffmaister, "North-South R&D Spillovers," *Economic Journal*, Vol. 107 (January 1997), pp. 134–49.

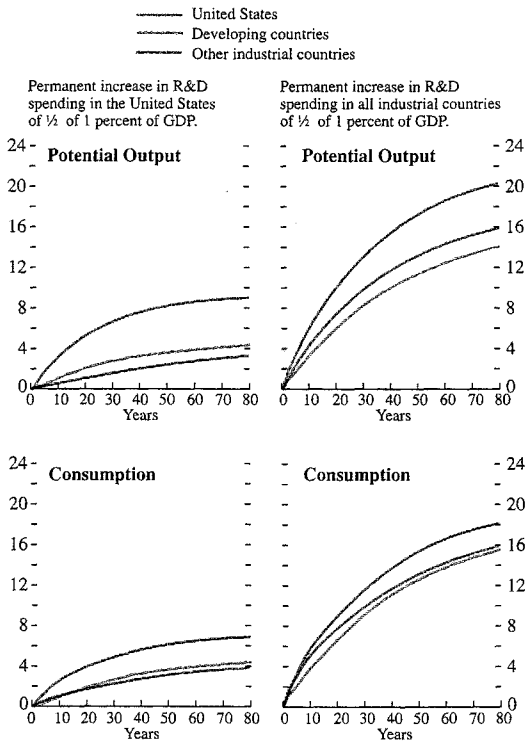
turing in the industrial countries is likely to continue to decline, and might fall to about 14 percent a decade from now.

The other side of this development has been a continuous increase in the share of employment in services (see Chart 18). This increase has been fairly uniform, with all industrial countries witnessing virtually continuous increases since around 1960. Among the major advanced economies, the share of employment in services is highest in the United States, at about 73 percent currently.

What accounts for deindustrialization? The declining share of manufacturing employment appears to mirror the decline in the current price share of manufacturing value added in GDP (Charts 18 and 19), suggesting that perhaps deindustrialization is the consequence of a shift in the pattern of expenditure away from manufactures toward services. When outputs in the two sectors are measured in constant prices, however, there does not appear to have been a shift in expenditure from manufacturing to services that corresponds to the magnitude of the shifts in employment between the two sectors. Relative to total output, the outputs of manufactures and services have remained fairly stable in the industrial countries as a whole (Chart 20). Hence, the growing current price share of services in value added primarily reflects rising relative prices of services in relation to manufactures,

Impact of Increased R&D on Output and Consumption

(Deviations from baseline, in percent)



other countries. This is because the country with higher R&D has to lower prices to sell its higher output. This deterioration in its terms of trade represents an important mechanism through which the benefits of higher domestic R&D spending are disseminated abroad. Thus, for instance, the long-run rise in U.S. consumption from an increase in R&D spending in all industrial countries equivalent to ½ of 1 percent of GDP is more than double that when only U.S. R&D spending is increased (16 percent versus 7 percent). The size of these consumption spillovers increases with the openness of the economy, and particularly benefits close trading partners.

- *As demonstrated by the newly industrialized economies, developing countries can benefit from open trading policies because they facilitate technology transfer from industrial countries.* It is estimated that an increase in imports of manufactures by developing countries equivalent to 5 percentage points of their GDP—roughly equivalent to the increase that occurred in these countries between 1992 and 1995—raises output by about 9 percent in the long run and consumption by 6 percent. These results suggest that part of the success of the newly industrialized economies over the last twenty years can be attributed to productivity improvements stemming from foreign R&D spillovers through trade. Other factors that have boosted growth in these countries include rapid increases in labor and capital inputs.[3]

These results should be taken as illustrative only, since they depend on the specific model, mechanism, and parameters used in the simulations. Furthermore, it should not be inferred that the benefits from government-induced increases in R&D would match those largely generated by market mechanisms. They demonstrate clearly, however, that, based on reasonable parameter estimates, R&D links are an important element in the process of globalization.

[3]Alwyn Young, "The Tyranny of Numbers: Confronting the Statistical Realities of the East Asian Growth Experience," *Quarterly Journal of Economics*, Vol. 110 (August 1995), pp. 641–80.

which is attributable largely to relatively slower growth of productivity in services.[14]

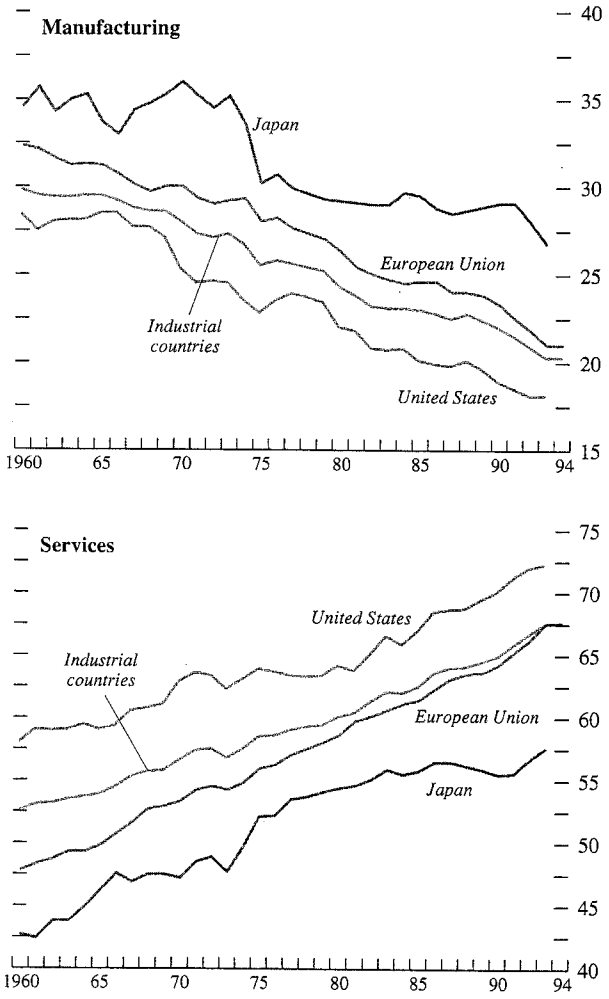
Unlike the case for the industrial country average, the volume of manufacturing output as a share of total output does exhibit a trend for both Japan (until the early 1990s) and the United States (see Chart 20). For these countries, there thus appears to have been significant shifts in expenditures—from services to manufacturing in Japan, and from manufacturing to services in the United States—which offer a potential

[14]With unequal productivity growth in the two sectors tending to raise the relative price of services, there would be a tendency for substitution in demand away from services toward manufactures. The observed relative stability of the ratio of outputs of the two sectors suggests that any such substitution has been offset by other factors, such as shifts in demand toward services related to income growth. International trade also may have played a role. Since manufactured goods are generally more exposed to international competition than services, greater competitive pressures in manufacturing may have helped to compress unit labor costs and, hence, the relative price of manufactures. See Robert E. Rowthorn and John R. Wells, *Deindustrialization and Foreign Trade* (Cambridge, England: Cambridge University Press, 1987), and William J. Baumol, Sue Anne Blackman, and Edward N. Wolff, *Productivity and American Leadership: The Long View* (Cambridge, Massachusetts: MIT Press, 1989) for a more detailed documentation and analysis of these trends in a historical perspective in the advanced economies.

Chart 19. Selected Advanced Economies: Value Added by Sector as a Share of GDP in Current Prices

(In percent)

Value added in manufacturing as a share of GDP in current prices has fallen in all industrial countries, while the share of value added in services has risen.



explanation for the differences in the evolution in their shares of manufacturing employment. An examination of trade flows reveals, however, that the rise in the share in the volume of manufacturing output in Japan and the corresponding fall in the United States reflect to a large extent changes in net exports of manufactures in these countries, specifically the rising manufacturing trade surplus in Japan, and the growing manufacturing trade deficit in the United States (Charts 20 and 21).[15] Even in these cases, therefore, shifts in domestic expenditures do not seem to have been an important source of changes in the structure of employment. It should be noted that since the early 1990s, Japan appears to have started witnessing a decline in the share of employment in manufacturing, partly under the influence of a declining external surplus.

North-South trade could have adverse implications for manufacturing employment in the industrial countries if it involves high levels of imports of labor-intensive manufactures in exchange for capital-intensive exports. As discussed further below, under these conditions, even a balanced increase in North-South trade might lead to job losses in manufacturing in the advanced economies.[16] However, estimates of the impact of North-South trade on the share of manufacturing employment in the advanced economies indicate that such trade has at most had only a very small role.[17] Although industrial countries have become significant importers of manufactured products from developing countries, they remain net exporters of manufactures. This is especially the case for high value-added products, for which industrial countries maintain a significant comparative advantage.

Neither a shift in real expenditures from manufacturing to services nor North-South trade appears to have been a major determinant of the decline in the share of manufacturing employment in the industrial countries. Instead, deindustrialization appears to reflect mainly the impact of unequal rates of productivity growth in manufacturing and services. Clearly, if there is no systematic tendency for real expenditure on services to grow faster than that on manufactured goods, but productivity in manufacturing increases consistently faster than in services, then employment will

[15]The background paper to this *World Economic Outlook* by Robert Rowthorn and Ramana Ramaswamy, "Deindustrialization: Causes and Implications," *Staff Studies for the World Economic Outlook* (IMF, forthcoming) provides regression analysis in support of this hypothesis regarding Japan and the United States. A more general result of this study is that the pattern of trade specialization in manufacturing among the advanced countries is an important factor in accounting for the variation in the structure of employment from one advanced economy to another.

[16]This hypothesis has been put forward by Adrian Wood, *North-South Trade, Employment and Inequality: Changing Fortunes in a Skill-Driven World* (Oxford: Clarendon Press, 1994) and is discussed in more detail in the next section.

[17]See Rowthorn and Ramaswamy, "Deindustrialization: Causes and Implications."

tend to shift from manufacturing to services. The services sector will have to absorb an ever-greater proportion of total employment to keep its output rising in line with that of manufacturing. Table 12 shows that these long-term trends seem to hold broadly for the industrial countries as a whole between 1960 and 1994. The average annual growth rates of output have been roughly similar in services and manufacturing; however, labor productivity in manufacturing has consistently outpaced that of services. While the pattern varies among subperiods, the differentials in productivity growth have consistently been much larger than the differences in output growth between the two sectors, indicating the important role played by differential productivity growth in explaining deindustrialization.[18]

The decline in the share of employment in manufacturing in the industrial countries in the last two decades recalls the dramatic decline in the share of employment in agriculture throughout this century, which was made possible by the very rapid growth of productivity in agriculture. The typical pattern of changing sectoral shares of employment as economies develop and mature is illustrated in Chart 22. At the start of this century, more than a third of civilian employment in most industrial countries was in agriculture; today it is about 8 percent, and in the United States it is less than 3 percent.

Deindustrialization clearly cannot be regarded as a symptom of the failure of a country's manufacturing sector, or for that matter, of the economy as a whole. On the contrary, deindustrialization is a natural feature of the process of economic development in advanced economies, and in general is associated with rising living standards. This is not to deny that deindustrialization can, at times, be associated with adjustment difficulties in some branches of the manufacturing sector or in the economy as a whole. The service sector may be unable in the short term to absorb fully the labor released, because the overall growth of the economy is not fast enough, because of institutional rigidities in the labor market or regulatory constraints in the service sector, or because investment in the expanding services sector takes time. The adjustment difficulties may at times be exacerbated also by increased competition in domestic and foreign markets from "low-cost" producers or from foreign competitors that have adjusted more quickly or more efficiently. Deindustrialization

[18]It is well known that there are many data and conceptual problems in measuring output in services. It is possible that the slow growth of productivity in services could partly be a consequence of the undermeasurement of output growth in this sector. Some of these issues are discussed in Baumol, Blackman, and Wolff, *Productivity and American Leadership*, and at greater length in the collection of essays in Zvi Griliches, ed., *Output Measurement in the Service Sectors*, Studies in Income and Wealth, Vol. 56 (Chicago: Chicago University Press, 1992). These studies suggest that any measurement bias in this area is small in comparison with the large recorded difference in productivity growth between manufacturing and services.

Chart 20. Selected Advanced Economies: Value Added in Manufacturing as a Share of GDP in Constant Prices

(In percent; purchasing power parity weights)

Value added in manufacturing as a share of GDP in constant prices has shown no trend for industrial countries but has risen in Japan and declined in the United States.

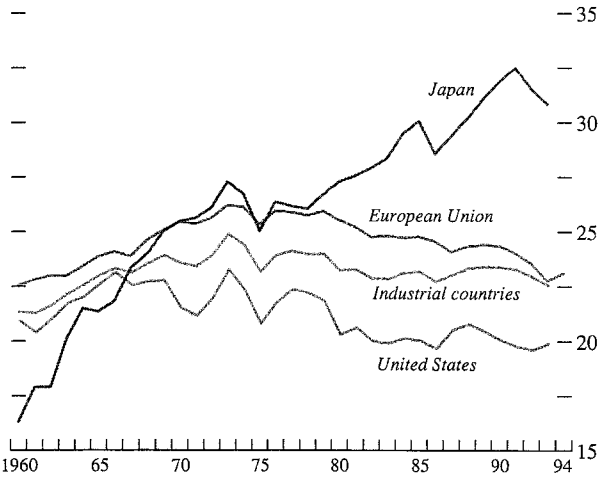


Chart 21. Selected Advanced Economies: Balance of Trade in Manufactured Goods

(In percent of GDP; purchasing power parity weights)

The rising constant price share of manufacturing value added in Japan and the falling share in the United States are reflected in corresponding movements in manufacturing trade balances.

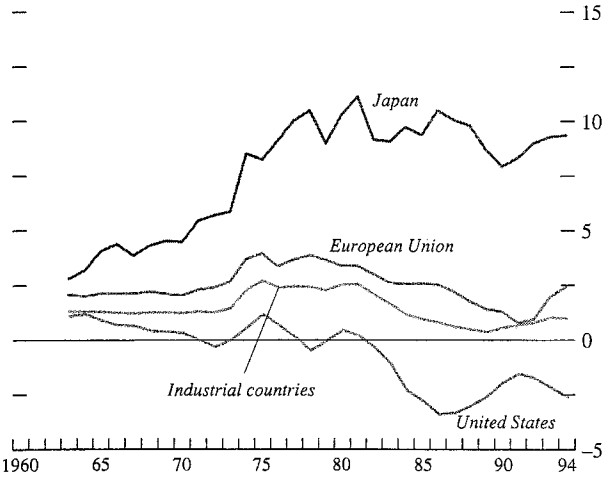


Chart 22. Changing Structure of Employment

The chart is a stylized depiction of the evolution of the sectoral distribution of employment during economic development. The share of employment in agriculture falls continuously, while in services it increases with the rise in per capita income. The share of industrial employment rises during the phase of industrialization and then falls as economies become more mature.

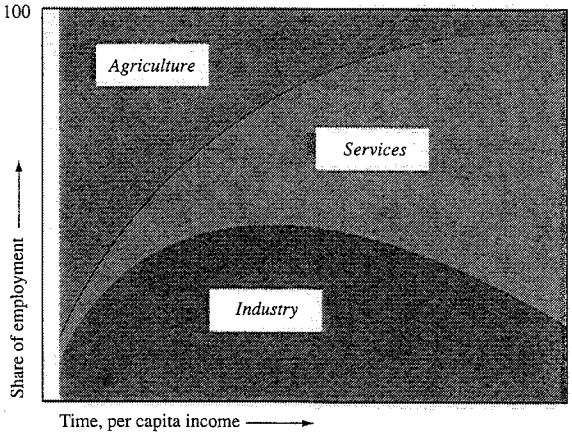


Table 12. Industrial Countries: Growth of Output and Employment

	1960–70	1971–94	1960–94
Output			
Manufacturing	6.3	2.5	3.6
Services	5.3	3.3	3.8
Output per person employed			
Manufacturing	4.6	3.1	3.6
Services	3.0	1.1	1.6
Employment			
Manufacturing	1.7	–0.6	0.0
Services	2.4	2.2	2.2

may be associated for a time, therefore, with rising unemployment or slower growth in living standards. Furthermore, a country can lose manufacturing jobs as a result of adverse shocks, policy mistakes, and temporary disturbances—for example, through a large real exchange rate appreciation. These considerations point to the importance of structural policies that maximize labor and product market flexibility and that facilitate the transfer of productive resources across sectors, as well as financial policies that promote macroeconomic stability at high levels of employment.

In this respect, the contrast between the United States and Europe is illustrative (Chart 23). Despite the very steep fall in the share of manufacturing employment in the United States, the absolute numbers employed in manufacturing have remained roughly constant since 1970, alongside a large increase in total civilian employment. The U.S. economy was thus able to absorb its relatively stronger labor force growth. Earnings have been stagnant, however, and income disparities have widened (see below). The experience of the European Union has been quite different. There, the falling share of manufacturing employment has been associated with a sharp decline in the absolute numbers employed in manufacturing. Moreover, unlike in the United States, there has been only a relatively small increase in total employment since 1970, which is reflected in the current high rates of unemployment in the European Union. Hence, while economic dynamism explains a large part of the decline in the share of manufacturing employment in both the United States and Europe, the process of deindustrialization has been associated with negative features—stagnant earnings and widening income disparities in one case, and high unemployment in the other. Even if more favorable cyclical conditions and supportive policies had facilitated the shift of resources from manufacturing to services, the transfer of resources associated with deindustrialization would still have occurred, though with more beneficial implications for employment during the adjustment period.

Among the advanced East Asian economies, both Korea and Taiwan Province of China began the pro-

cess of deindustrialization around the latter half of the 1980s, as their real per capita incomes rose rapidly and reached the levels that had been achieved by many of the advanced economies in the early 1970s (Chart 24). There has, however, been a marked difference in recent decades between developments in these two economies on the one hand, and Hong Kong and Singapore on the other. While the share of manufacturing employment rose rapidly until the mid-1980s in both Korea and Taiwan Province of China, it has exhibited only a moderately declining trend in Singapore since 1981 and has been falling since the 1970s in Hong Kong. The difference appears to be primarily due to the fact that Singapore and Hong Kong are city-states, with no large agricultural sector. Consequently, they did not experience the shift in employment from agriculture to manufacturing associated with industrialization. The changes in the structure of employment in the deindustrialization phase, however, are likely to follow a similar pattern in all these economies.

An implication of continued deindustrialization is that the overall growth of productivity will be determined increasingly by what happens in the service sector. Over time, the ratio of employment in manufacturing to employment in services is likely to continue to decrease so that productivity growth in the manufacturing sector, even if high, will have a smaller impact on the overall growth of productivity in the economy. This points to the positive contribution to growth that could be made by deregulation and trade liberalization in the service sector and by increased investment in education and training to take full advantage of emerging technologies.

Deindustrialization is also likely to have implications for industrial relations in the advanced economies. In particular, the scope for centralized wage bargaining is likely to change over time. In dominantly service-based economies, it will be increasingly important to adopt remuneration arrangements that not only compensate for wide differences in skills and productivity but also offer incentives for human capital accumulation (Box 7).

Trade and Wages

Labor markets in the advanced economies have been characterized by marked increases in wage inequality in some countries between the more skilled and less skilled, and in other countries by rises in unemployment among the less skilled. This is the case however skill levels are defined, whether in terms of education, experience, or job classification. These labor market developments could have been caused by either an increase in the supply of less-skilled workers relative to the more skilled or an increase in the relative demand for more-skilled workers. In fact, however, the relative earnings and employment

Chart 23. Selected Advanced Economies: Employment

(In thousands)

The number of persons employed in manufacturing has fallen in the European Union since the early 1980s but has not declined in the United States or Japan.

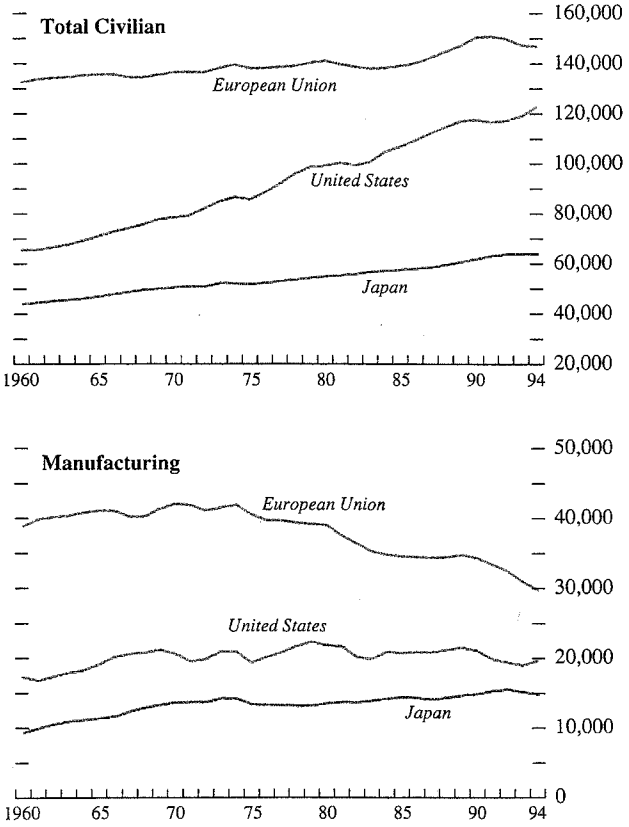
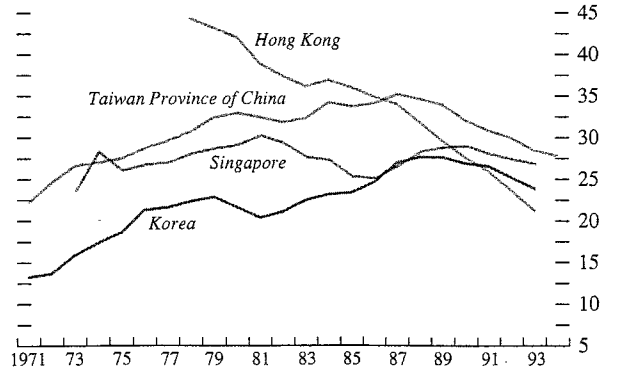


Chart 24. Selected East Asian Economies: Share of Manufacturing in Employment

(In percent)

The most dynamic East Asian economies have also started to deindustrialize in recent years.



Box 7. Deindustrialization and the Labor Market in Sweden

Deindustrialization poses important institutional challenges in those advanced countries that have traditionally had centralized wage-bargaining arrangements. Industrial relations in these countries will have to adjust to the fact that there is likely to be a continuing shift in the structure of employment from manufacturing to services. The relationship between deindustrialization and wage-bargaining institutions and its implications for economic performance are well illustrated by the Swedish case.

The traditional "Swedish labor model" had two main elements. The first was the combination of centralized wage bargaining with an explicit policy of substantially narrowing wage differentials. The other was the leading role assigned to the traded goods sector in wage determination. In addition to the objective of reducing income inequality, the policy of compressing wage differentials during the 1960s and 1970s was motivated by the desire to promote shifts in the industrial structure from low-technology industries (where profits were squeezed by the wage policy) to high-technology industries (where profits were relatively high since workers were constrained in their ability to bargain for high wages). This policy proved successful in hastening structural change in Swedish industry and contributed to relatively high rates of growth during the 1960s and early 1970s. At the same time, in an attempt to maintain the international competitiveness of Swedish industry, wage increases in the traded goods sector were restricted by agreement between the social partners to be no higher than the sum of international price inflation and productivity increases in that sector. Wages in the nontraded goods sector were set with a view to maintaining broad parity with the traded goods sector. More recently, wage negotiations in Sweden have become less centralized than they used to be, the leading role assigned to the traded goods sector has weakened, and there has been some associated widening of wage differentials. Nevertheless, wage bargaining in Sweden continues to be more centralized, and wage differentials a lot more compressed, than in most other advanced economies.

Sweden's model of industrial relations did not prove conducive to maintaining high rates of growth in the period after the oil shock of the early 1970s. If anything, the growth slowdown was more pronounced in Sweden than in most other advanced economies during the period. While the reasons for the relatively slow growth of productivity in Sweden from the mid-1970s are multidimensional (influences appear to have included the diminished prospects for "catching up," and the rapid growth of the public sector), the institutional structure of the labor market does appear to have played a role. One reason is that the potential for achieving rapid productivity growth by shifting production from low-tech to high-tech activities appears to have been largely exhausted. For instance, the data show that by the mid-1970s, the proportion of small firms had declined considerably.[1] Further gains in productivity therefore had to be achieved by increasing the efficiency with which existing enterprises operated. This, in turn, required the creation of appropriate incentive mechanisms for rewarding workers for effort, skill, and human capital accumulation. Implementing such incentive schemes would have resulted in a tendency for wage differentials to widen. But individual enterprises were constrained in their ability to introduce such incentives and, consequently, productivity growth suffered.[2]

To the extent that Sweden's problem of slow productivity growth is linked to the nature of its wage-bargaining institutions, it is likely to be compounded by the continuation of deindustrialization. As noted in this chapter, all advanced economies have experienced a secular decline in the share of manufacturing employment; however, this process has been particularly pronounced in Sweden (*see*

[1]It has been estimated that firms with at least 500 employees accounted for 60.5 percent of total employment in Sweden in 1986, in contrast to 30.4 percent of total employment in the European Union as a whole; at the other end of the spectrum, firms with fewer than 10 employees accounted for only 9.5 percent of total employment in Sweden—about half the corresponding share in the European Union. For a more detailed discussion of these trends, see Steven Davis and Magnus Henrekson, "Industrial Policy, Employer Size, and Economic Performance in Sweden," NBER Working Paper No. 5237 (Washington: National Bureau of Economic Research, August 1995).

[2]See Ramana Ramaswamy, "The Structural Crisis in the Swedish Economy: Role of Labor Markets," *Staff Papers*, IMF, Vol. 41 (June 1994), pp. 367–79, for a more detailed discussion of the relationship between labor market institutions and productivity growth in Sweden.

prospects of more-skilled workers have improved even though their relative supply has increased. If labor markets work freely, earnings can increase in the face of increased supply only if demand increases by more. In fact, labor demand has shifted toward skilled workers in two dimensions. First, demand for labor in the advanced economies has shifted *across* industries as the share of output produced by industries that intensively employ low-skilled workers has fallen and that produced by more skill-intensive industries has risen. The more important change, however, has been a change in skill demands *within* industries, as firms have shifted away from unskilled toward skilled workers.[19] This shift in demand toward more-skilled workers has raised the relative wages of these workers.

[19]See Eli Berman, John Bound, and Zvi Griliches, "Changes in the Demand for Skilled Labor Within U.S. Manufacturing Industries: Evidence from the Annual Survey of Manufactures," *Quarterly Journal of Economics* (May 1994), pp. 367–97; Eli Berman, John Bound, and Steve Machin, "Implications of Skill Biased Technological Change: International Evidence" (unpublished; Boston: Boston University, 1997); and Dominique Goux and Eric Maurin, "The Decline in Demand for Unskilled Labor: An Empirical Analysis Method and Its Application to France" (unpublished; Paris: Institut National de la Statistique et des Études Économiques (INSEE), 1997).

Employment by Sector as a Share of Total Civilian Employment
(In percent)

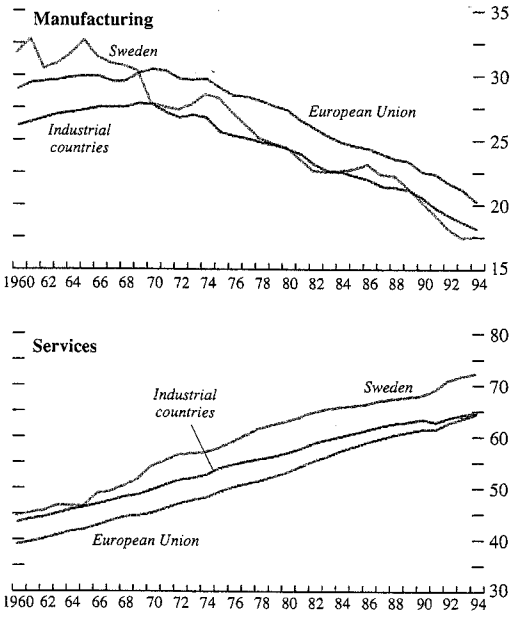


chart). The share of manufacturing employment in Sweden fell steeply from about 33 percent in the mid-1960s to about 17 percent in 1994. Over 70 percent of civilian employment in Sweden is now in the service sector, which includes a significant share of public sector employment. As in other advanced economies, the service sector in Sweden encompasses a wide variety of jobs. Some, as in financial services, require relatively high skills, while others, as in certain types of retailing, are likely to require lower skills. There are also wide variations of job security in the service sector. For instance, employment in public services is in general much more secure than employment in many retail services. While such differences, no doubt, also exist within the manufacturing sector, the diversity of jobs in the service sector is in all likelihood greater than in the manufacturing sector.

Given the diversity of skills, productivity levels, and value added associated with jobs in the service sector, it is particularly important that remuneration schemes reflect differences in the nature of work. Appropriate wage differentials are required not only to compensate for differences in the intensity of effort and skills, but also to offer incentives for human capital accumulation, and motivation, in order to enhance productivity and growth. As deindustrialization continues, the growth of productivity in the economy as a whole, and consequently the growth of living standards, will be determined to an increasing extent by productivity developments in the service sector. In this context, it becomes more important to provide the appropriate incentive structures for increasing productivity in services. A wage-bargaining system that is based on the competitiveness requirements of the traded goods sector, and which tends to impose relatively uniform wages across sectors, is unlikely to be an optimal labor market arrangement in an increasingly service-based economy, whatever may have been its justification in the past.

While all advanced economies may have to reform their industrial relations to varying degrees to cope with deindustrialization, the extent of adaptation may have to be more far reaching in countries, such as Sweden, that have had a tradition of centralized bargaining. Other countries, such as Austria, Denmark, Finland, France, Germany, and Norway, where trade union action has promoted social policy objectives have to deal with challenges of a similar nature, to varying degrees. This analysis does not imply that countries like Sweden with a strong tradition of promoting a relatively equal distribution of incomes will have to abandon egalitarian objectives altogether because of deindustrialization. These countries, and their social partners, will, however, have to rethink the appropriate policies for fostering those objectives while allowing the labor market to respond to the structural changes taking place in the economy.

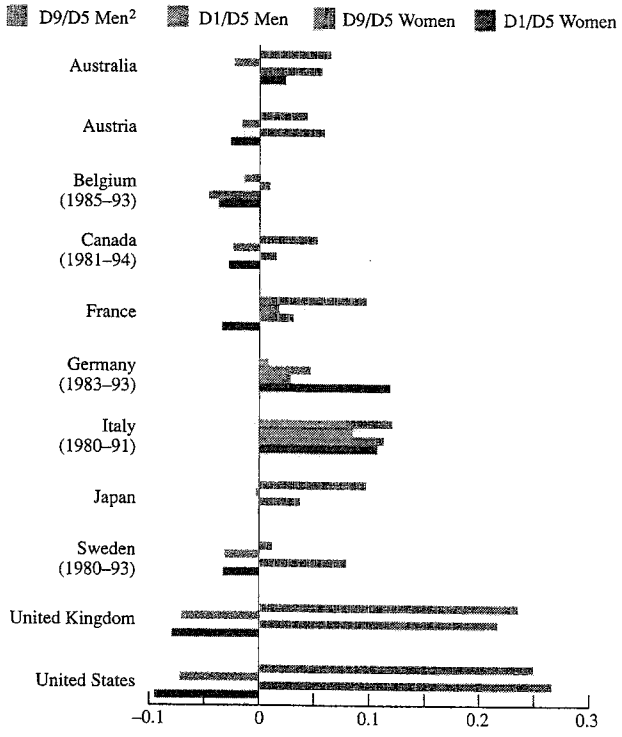
In countries with relatively flexible wages set in decentralized labor markets, such as the United States and the United Kingdom, the decline in relative demand for less-skilled labor has translated into a widening gap between the wages of skilled and unskilled workers, with lower relative wages for unskilled workers. In the United States, inflation-adjusted wages of the less skilled have fallen in absolute terms since the early 1970s.[20] This increased wage inequality can be seen in Chart 25, which shows that in the United States and the United Kingdom earnings of upper-income workers—those in the ninth decile of the earnings distribution—

[20]Including nonwage compensation, such as health care and pension plans, further widens the wage gap, since the share of fringe benefits received by skilled workers has also increased. See John Bound and George Johnson, "Changes in the Structure of Wages in the 1980s: An Evaluation of Alternative Explanations," *American Economic Review*, Vol. 82 (June 1992), pp. 371–92, and Richard B. Freeman and Lawrence F. Katz, eds., *Differences and Changes in Wage Structure* (Chicago: University of Chicago Press, 1996), pp. 1–22. Richard Freeman, "When Earnings Diverge: Causes, Consequences, and Cures for the New Inequality in the U.S." (unpublished; Chicago: University of Chicago, 1996), estimates that real earnings of male high-school dropouts in the United States have fallen by 20 percent since the early 1970s. The consumer price index possibly overstates inflation and thus exaggerates the decline in real wages. See Box 4.

Chart 25. Selected Advanced Economies: Changes in Ratios of Earnings Deciles[1]

(Changes from 1980 to 1994, unless otherwise noted)

Wage inequality has risen significantly in some countries, especially the United Kingdom and the United States.



[1]Data are based on gross hourly earnings or gross earnings of full-time, full-year workers, except data from Austria, which include part-time workers.

[2]D9, D5, and D1 refer to the upper limits of the ninth, fifth, and first deciles, respectively. D5 is thus equal to the median of the distribution.

grew sharply in relation to the earnings of workers in the middle (fifth decile), while earnings of low-income workers (first decile) fell relative to those in the middle.

Other industrial countries have also experienced shifts in labor demand away from the less skilled toward the more skilled since the early 1980s, though with differing effects on the wage structure. Australia, Austria, Canada, Japan, and Sweden have experienced modest widenings in wage differentials, while Belgium has seen a narrowing. Countries with smaller increases in earnings inequality such as Germany and other European countries have suffered instead from higher rates of unemployment for less-skilled workers, as the combination of relatively rigid wages, frequently set in centralized labor markets, and explicit government policies have combined to put a floor under wages (Chart 26).[21]

Response of Wages to Import Competition

It is often asserted that globalization is a major cause of the declining relative wages and employment of less-skilled workers in the advanced economies. Perhaps the most visible aspect of this supposed link is the issue of whether increased international trade, particularly with low-wage developing countries, has contributed to declining wages and employment.

In principle, the channel through which international trade may affect wages is straightforward. Competition from low-cost imports alters the profit opportunities facing firms in the advanced economies. Firms respond by shifting resources toward industries in which profitability has risen and away from those where it has fallen. Trade flows thus give rise to countrywide shifts in factor demands. Thus, import competition from countries exporting unskilled-labor-intensive products will tend to lower the prices of such products and the profitability of their production relative to the prices and profitability of skilled-labor-intensive products, so that domestic firms will shift production toward skill-intensive goods. With fixed supplies of factors, this leads to changes in factor prices, and in particular to a relative decline in the

[21]The dispersion of individual earnings of full-time workers provides only one measure of inequality. From a societal point of view, other measures, which, for instance, consider the individual earnings of the entire working-age population or the earnings of households, rather than simply individuals in full-time work, may be just as important. On these measures, the degree of labor-income inequality in the United States is comparable with that in European countries (see OECD, *Economic Outlook*, Vol. 60 (December 1996)). The reason is that the adverse effect on labor-income inequality of the wider wage dispersion in the United States is offset by the favorable effect of higher employment. It should further be noted that the comparative dispersion of labor income differs from that of disposable income because of differences across countries in taxation and transfer payments.

earnings of unskilled labor.[22] What matters in this transmission channel from trade to wages is not the volume of goods flowing across countries, but rather the prices at which the goods trade.

The issue then is empirical: Have product prices in the advanced economies in fact changed in a way that is consistent with the notion that competition from imports has lowered the relative earnings of unskilled labor? That is, have prices of import-competing, low-skill-labor-intensive goods fallen relative to prices of high-skill-labor-intensive goods? If so, trade might have contributed to rising income inequality. But for trade to have been the main cause it must also be shown that the changes in product prices are primarily the result of trade rather than other influences.

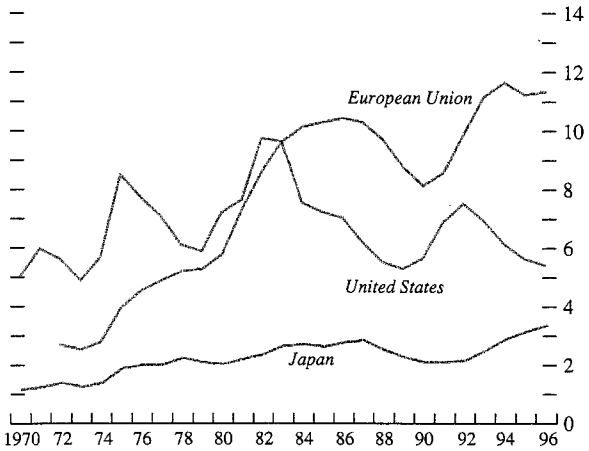
There is in fact little evidence that product prices in the industrial countries have changed in a way that would confirm this relationship. For manufacturing industries in the industrial countries in the 1980s and 1990s, the prices of goods produced using relatively more skilled labor have for the most part fallen in relation to the prices of goods produced using relatively more unskilled labor.[23] And even after taking into account the effects of technological progress on relative prices, the change in relative prices attributable to international trade has favored goods produced by low-skilled, not high-skilled labor.[24]

Just as the empirical evidence indicates that imports have not lowered the relative prices of goods produced by unskilled labor, it also indicates that trade has had little effect on wages and employment in the industrial countries.[25] In the United States, changes in import

Chart 26. Selected Advanced Economies: Unemployment Rates

(In percent)

Unemployment rates in Europe and the United States have diverged sharply since the early 1980s.



[22]This mechanism is the essence of the "Stolper-Samuelson Theorem," first expounded by Wolfgang F. Stolper and Paul A. Samuelson, "Protection and Real Wages," *Review of Economics Studies*, Vol. 9 (1941), pp. 58–73.

[23]This is documented for the United States by Robert Z. Lawrence and Matthew J. Slaughter, "International Trade and American Wages in the 1980s: Giant Sucking Sound or Small Hiccup?" *Brookings Papers on Economic Activity: Microeconomics 2* (1993), pp. 161–226; for the four largest countries of the European Union, by Damien Neven and Charles Wyplosz "Relative Prices, Trade and Restructuring in European Industry," Centre for Economic Policy Research, Working Paper No. 1451 (August 1996); and for a broad group of 13 OECD countries, by Steven S. Saeger, "Globalization and Economic Structure in the OECD" (unpublished Ph.D. dissertation; Cambridge, Massachusetts: Harvard University, May 1996). Jeffrey D. Sachs and Howard J. Shutz, "Trade and Jobs in U.S. Manufacturing," *Brookings Papers on Economic Activity: 1* (1994), pp. 1–84, suggest that falling prices of computers account for the declines in the prices of skill-intensive goods. For a review of the literature, see Matthew Slaughter and Phillip Swagel, "The Effect of Globalization on Wages in the Industrial Countries," *Staff Studies for the World Economic Outlook* (IMF, forthcoming).

[24]See Edward E. Leamer, "In Search of Stolper-Samuelson Effects on U.S. Wages," NBER Working Paper No. 5427 (Cambridge, Massachusetts: National Bureau for Economic Research, January 1996).

[25]See Ana L. Revenga, "Exporting Jobs? The Impact of Import Competition on Employment and Wages in U.S. Manufacturing," *Quarterly Journal of Economics* (February 1992), pp. 255–84, and Neven and Wyplosz, "Relative Prices, Trade and Restructuring."

prices have been found to have only small effects on wages and employment. For Germany, France, Italy, and the United Kingdom, there is no systematic pattern of effects of import competition on wages and employment. In Germany, wages and employment do appear to have been adversely affected by imports from developing countries but the magnitude of the effects has been small. In Italy and the United Kingdom, imports from developing countries have had no statistically significant effects on wages or employment, although imports from other industrial countries do seem to have had a significant influence.

The apparently small effects of developing country imports on industrial countries' domestic product and labor markets is not surprising given the relative magnitudes involved in terms of import shares. Despite the growing importance of developing countries in the world economy, merchandise imports from them range from around 20 percent to 40 percent of total merchandise imports in advanced economies, which corresponds to between 3 percent and 8 percent of total output. Low-wage imports are simply not that important for most advanced economies, in terms of either quantity or their impact on domestic prices. Increased trade with developing countries therefore most likely accounts for only a small part of the increase in wage dispersion and the shift in demand toward high-skilled workers.[26] Of course, for those workers affected, namely, those at the lower end of the income distribution, the effects may nonetheless be significant. And the overall effects of trade on wages and employment are not zero. But they are significantly less than other influences. Thus estimates of the proportion of the increased wage dispersion in the industrial countries in the 1980s and 1990s that can be accounted for by trade range approximately from zero to one-third, with the most convincing results in the range of 10 to 20 percent. Rather than by competition from low-priced imports, the increase of wage inequality in the 1980s and 1990s appears to have been driven principally by advances in technology that favor skilled labor.[27]

[26]Import competition could play a larger role in affecting wages if it leads firms to adopt technologies that supplant low-skilled workers. However, it is not clear that trade has led to such changes in technology rather than technological advances affecting patterns of production and thus trade flows. Moreover, if trade makes unskilled-labor-intensive goods relatively cheaper and skilled-labor-intensive or capital-intensive goods more expensive, it would be expected to raise the relative prices of skilled labor and capital and thus increase incentives for the development of technologies that replaced these rather than unskilled workers. See Rowthorn and Ramaswamy, "Deindustrialization: Causes and Implications" for further discussion.

[27]For instance, the growth of information technology has significantly enhanced the productivity and earnings of workers able to utilize such technology. See in this context the discussions in Paul Krugman, "Technology's Revenge," *The Wilson Quarterly* (Autumn 1994), pp. 56–64, and Ramana Ramaswamy and Robert E. Rowthorn, "Efficiency Wages and Wage Dispersion," *Economica*, Vol. 58 (November 1991), pp. 501–14. Trade could increase the spread of new technology, and thus indirectly hasten the shift in favor of high-skilled workers.

Capital Mobility and Labor Markets

Wages can also be affected by movements of capital and labor. Concerns have been expressed in a number of advanced economies that outflows of capital—particularly foreign direct investment, the related "exporting" of jobs, and outsourcing by domestic firms—have lowered domestic wages and employment. For example, the phenomenon of "*Standortwettbewerb*" (locational competition) under which German firms have been increasingly outsourcing production in recent years, especially to eastern European countries, has received much popular attention. Production and job creation abroad may clearly substitute for production at home, depending upon relative costs, competitiveness, market access, and other considerations. However, the limited evidence so far on the effects of outsourcing on labor markets in advanced economies indicates that workers in the home ("parent") country and workers employed in foreign subsidiaries either are only weak substitutes for one another in the production process or might even be complements, so that employment tends to rise or fall together in the parent and subsidiaries. In either case, although there may be some adverse effects in some industries, it does not appear that firms have substituted foreign for domestic workers on a large scale.[28]

Another effect might be that enhanced capital mobility might increase the degree to which workers bear the costs of adjustment to terms of trade shocks. Increased capital mobility narrows the range of variation of returns to capital within a country, because as a country integrates its capital market with the rest of the world, risk-adjusted rates of return increasingly match "world" rates. The effects of terms of trade movements cannot then be absorbed by all factors of production, so that labor, both more skilled and less skilled, must absorb more of the impact of any product price changes. Increased capital mobility may thus result in increased volatility of wages in response to external shocks. This would lead to greater wage dispersion if wages of low-skilled workers adjust downward more readily than those of high-skilled workers. In countries (such as in Europe) where variations in returns to capital are closely constrained by capital mobility and wages for low-skilled workers are downwardly inflexible in real terms owing to structural

[28]For evidence on the labor market effects of multinationals, see Matthew J. Slaughter, "Multinational Corporations, Outsourcing, and American Wage Divergence," NBER Working Paper No. 5253 (Cambridge, Massachusetts: National Bureau for Economic Research, September 1995); Robert C. Feenstra and Gordon Hanson, "Foreign Investment, Outsourcing, and Relative Wages," in *Political Economy of Trade Policy: Papers in Honor of Jagdish Bhagwati*, ed. by Robert C. Feenstra, Gene M. Grossman, and Douglas A. Irwin (Cambridge, Massachusetts: MIT Press, 1996); and Robert C. Feenstra and Gordon Hanson, "Globalization, Outsourcing, and Wage Inequality," *American Economic Review*, Vol. 86 (May 1996), pp. 240–45.

rigidities, the impact of terms of trade shocks will tend to fall on the number of workers employed rather than on wages. Increased capital mobility can thus potentially magnify the effect of external shocks on unemployment.

Immigration and Wages

In recent years, some advanced economies have experienced increased inflows of low-skilled workers, raising concern about the potential adverse effects of immigration on wages and the job prospects of low-skilled native workers. Empirical research, however, finds only very small effects of low-skilled immigration on wages and employment in the advanced economies in general, although effects in particular regions may be greater.[29] Mirroring the transatlantic difference in labor markets, immigration to European countries has typically led to some increased unemployment while immigration to the United States affects wages. Moreover, rigidities in European labor markets limit the speed of adjustment to changes such as migration and import competition, so that any adverse effects may tend to be longer lasting than in the United States. In both cases, the effect of low-skilled immigration falls most heavily on low-skilled workers, while wages and employment of high-skilled workers actually rise.

Immigration can also lead to increased growth, particularly if, as in the case of the recent influx of high-skilled migrants from the former Soviet Union to Israel, immigrants bring with them human capital that offsets the initial decrease in the per capita stock of physical capital that results from the immigration. In this case, the immigration potentially leads to increased investment as the higher levels of human capital raise the return to physical capital. The increase in investment would then be expected to lead to both higher wages and higher output. In recent years, however, immigrants to most advanced economies have had on average lower levels of skills than natives, suggesting that economy-wide growth effects from recent flows of immigration will be less immediate.

Public Policy Responses to Globalization

Globalization has been viewed with concern in many advanced economies, with the belief common that it harms the interests of workers, especially unskilled workers, either directly through immigration or indirectly through trade and capital outflows. Particularly with respect to trade, these beliefs appear to be at odds with the evidence that import competition has generally had only modest effects on wages, employment, and income inequality in the advanced economies.

One explanation for this is that even though the advanced economies as a whole benefit from increased economic integration, the gains are typically distributed unevenly between groups within countries, with those adversely affected likely to experience adjustment costs and social dislocation. While policymakers might be tempted to allow their countries to forgo some gains from globalization in order to improve the welfare of particular constituents such as producers in certain sectors or less-skilled labor, restrictions on trade flows and capital movements are second-best policies compared with measures that directly compensate parties who do not share in the gains from globalization. Policies that seek to limit or delay the effects of globalization will dilute its benefits, which come in the form of lower prices for imports, as well as the increased flow of capital and technological innovations across countries. Rather than attempting to limit globalization, the appropriate policy response is instead to address the underlying structural rigidities that prevent labor markets from adjusting to technological change or external competition. In this respect, education and training are essential, since these are important means by which workers in advanced economies can upgrade their skills to match the demands of the changing global economy. It is also important to have in place well-targeted and cost-effective social safety nets that provide assistance to those displaced and ensure that they do not become marginalized.[30] Such safety nets, however, should not weaken incentives for workers and firms to make the adjustments to changes in the economic environment that form an essential and inevitable part of economic progress.

Capital Market Integration and Implications for Policy

The growing interdependence of national financial markets has significantly altered the environment in which monetary and fiscal policy are conducted. This section explores some of the implications for national policy autonomy, including the implementation and transmission of monetary policy, the conduct of fiscal policy, and the implications for tax competition and tax systems.

[29]See Rachel M. Friedberg and Jennifer Hunt, "The Impact of Immigrants on Host Country Wages, Employment and Growth," *Journal of Economic Perspectives*, Vol. 9 (Spring 1995), pp. 23–44, and Klaus F. Zimmerman, "Tackling the European Migration Problem," *Journal of Economic Perspectives*, Vol. 9 (Spring 1995), pp. 45–62.

[30]See Dani Rodrik, *Has Globalization Gone Too Far?* (Washington: Institute for International Economics, 1997) for a discussion of social dislocations that have accompanied changes in the global economy.

Table 13. Cross-Border Transactions in Bonds and Equities[1]
(In percent of GDP)

	1970	1975	1980	1985	1990	1995	1996[2]
United States	2.8	4.2	9.0	35.1	89.0	135.3	151.5
Japan[3]	. . .	1.5	7.7	63.0	120.0	65.1	82.8
Germany	3.3	5.1	7.5	33.4	57.3	169.4	196.8
France	. . .	. . .	8.4[4]	21.4	53.6	179.6	229.2
Italy	. . .	0.9	1.1	4.0	26.6	252.8	435.4
United Kingdom	. . .	. . .	. . .	367.5	690.1	. . .	. . .
Canada	5.7	3.3	9.6	26.7	64.4	194.5	234.8

Source: Bank for International Settlements (BIS).
[1]Gross purchases and sales of securities between residents and nonresidents.
[2]January to September.
[3]For 1996, data are based on settlement.
[4]The figure is for 1982.

Capital Flows and Interest Rates

Starting largely in the early 1970s, the relatively tight restrictions on international capital movements still in existence in many industrial countries began to be dismantled. The process of liberalization proved to be gradual, stretching well into the 1990s. The dismantling of capital and exchange controls coincided with an intense period of deregulation of domestic financial markets and of extensive financial innovations. The liberalization of financial markets together with the decline in transactions costs and the emergence of new financial instruments resulted in a dramatic growth in cross-border financial transactions.[31]

[31]See Morris Goldstein and Michael Mussa, "The Integration of World Capital Markets," IMF Working Paper 93/95 (December 1993), also published in *Changing Capital Markets: Implications for Monetary Policy*, Federal Reserve Bank of Kansas City (August 1993), and Richard C. Marston, *International Financial Integration: A Study of Interest Differentials Between the Major Industrial Countries* (Cambridge, England; New York: Cambridge University Press, 1995).

Gross capital flows have grown enormously since the early 1970s and especially in the past decade. For instance, cross-border transactions in bonds and equities in the major advanced countries were less than 10 percent of GDP in 1980 but were generally well over 100 percent of GDP in 1995 (Table 13). Gross flows of portfolio investment and foreign direct investment in the advanced countries more than tripled between the first half of the 1980s and the first half of the 1990s (Table 14). Foreign direct investment flows mainly represent the expansion of the international activities of multinational enterprises, so that the surge in foreign direct investment is a reflection of the globalization of business that has taken place in recent years. Worldwide flows of foreign direct investment began to surge in the mid-1980s, with the total flow of direct investment outward from the industrial countries more than quadrupling between 1984 and 1990 (Chart 27). In 1990–92, foreign direct investment fell as growth slowed in the industrial countries, but it subsequently recovered strongly. Three factors

Table 14. Gross Foreign Direct Investment plus Portfolio Investment[1]
(In percent of GDP)

	1970–74	1975–79	1980–84	1985–89	1990–95
Belgium-Luxembourg	. . .	3.4	5.1	14.3	41.5[2]
Canada	1.7	3.4	3.6	6.1	7.2
Denmark	. . .	0.6	0.9	3.5	7.2
France	. . .	1.3	2.1	4.1	7.2
Germany	1.2	1.3	1.7	5.2	6.3
Italy	0.9	0.3	0.6	1.7	5.7
Japan	. . .	0.6	2.6	5.9	3.7
Netherlands	7.3	4.7	6.0	10.9	11.1
Norway	. . .	5.6	0.4	6.6	2.1
Portugal	. . .	0.4	1.0	3.6	6.3
Spain	. . .	0.7	1.2	3.1	6.7
Sweden	1.0	1.2	1.7	5.0	7.0
Switzerland	. . .	4.5	9.4	14.7	12.8
United Kingdom	3.6	4.0	5.4	14.4	11.9
United States	1.0	1.5	1.4	2.9	3.3

[1]Sum of the absolute value of inward and outward foreign direct investment and portfolio investment.
[2]The figure is for 1990–94.

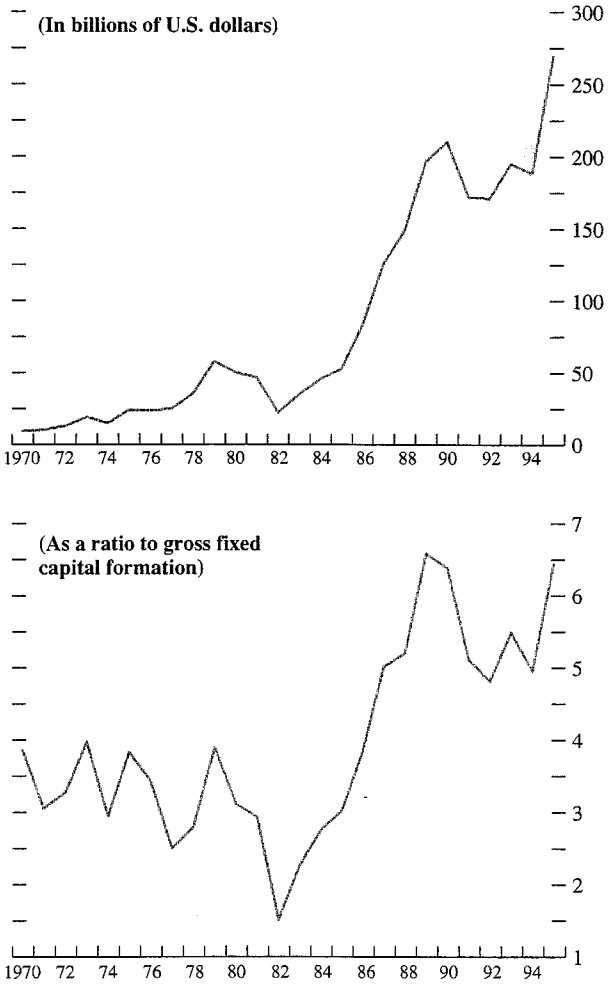
have been behind the recent rapid expansion: foreign direct investment is no longer confined to the largest firms, as an increasing number have become multinationals; the sectoral diversity of foreign direct investment has broadened, with the share of the service sector rising sharply; and the number of countries that are outward investors or hosts of foreign direct investment has risen considerably.[32] The benefits to the host country of foreign direct investment have in recent years been illustrated by the case of Ireland (Box 8).

By any measure, the volume of international financial transactions has been extraordinary. To single out one other measure, which is particularly relevant to the ability of monetary authorities to influence exchange rates through official intervention, average daily turnover in the foreign exchange market has grown from about $200 billion in the mid-1980s to around $1.2 trillion, equivalent to approximately 85 percent of all countries' foreign exchange reserves (Table 15).

The degree of capital market integration is much more limited, however, than gross flows would seem to suggest. First, it is interesting to note that net international capital flows do not show the explosive growth of gross flows. The current account imbalances of the advanced economies have remained rather small, both as a share of GDP and as compared with the levels experienced in the pre-1914 gold standard era (see Annex). In the 1990s, the absolute value of the advanced economies' current account imbalances relative to GDP has averaged around 2 percent. As regards foreign direct investment flows, although outward direct investment of the major advanced economies has increased more than twice as fast as output, it is still only a small proportion of domestic investment (see Chart 27). Furthermore, empirical evidence shows that domestic investment is financed mostly by domestic saving. This has been interpreted by some as implying that international capital mobility is low.[33] Others have argued, however, that the observed high correlation between domestic saving and investment rates need not be inconsistent with a high degree of capital mobility if, inter alia, goods markets are imperfectly integrated, if countries target current

Chart 27. Selected Advanced Economies: Foreign Direct Investment Outflows[1]

Foreign direct investment flows have formed an important element in globalization.



[1]Countries included are Belgium, Canada, France, Germany, Italy, Japan, the Netherlands, Sweden, Switzerland, the United Kingdom, and the United States. These countries account for over 80 percent of the total outward stock of foreign direct investment. Data prior to 1971 exclude Germany; 1975, France and Belgium; 1977, Japan; and 1983, Switzerland.

[32]OECD, *Financial Market Trends*, No. 64 (Paris, June 1996), and Edward M. Graham, "Foreign Direct Investment in the World Economy," in *Staff Studies for the World Economic Outlook* (IMF, September 1995), pp. 120–35.

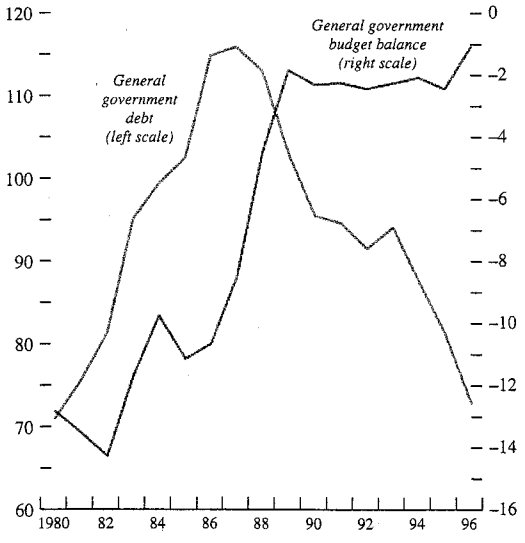
[33]Following Martin Feldstein and Charles Horioka, "Domestic Saving and International Capital Flows," *Economic Journal*, Vol. 90 (1980), pp. 314–29, a number of studies have found savings and investment rates highly correlated—for a review see Goldstein and Mussa, "The Integration of World Capital Markets," and Alan M. Taylor, "International Capital Mobility in History: The Saving-Investment Relationship," NBER Working Paper 5743 (Cambridge, Massachusetts: National Bureau for Economic Research, September 1996).

Box 8. Ireland Catches Up

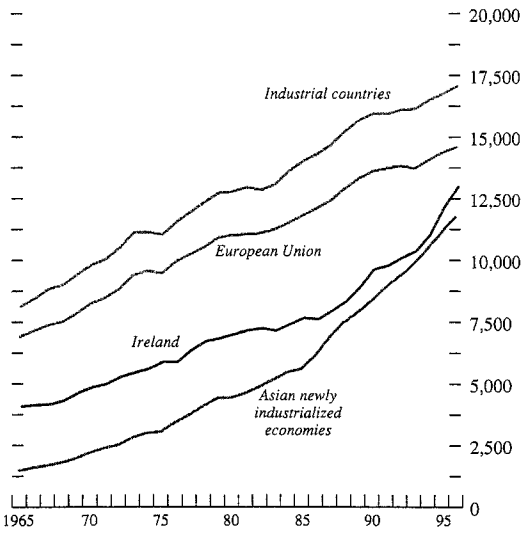
During the 1990s, Ireland has ranked as the fastest growing economy in the European Union (EU). Growth peaked at about 10 percent in 1995, with inflation remaining well below the average for the EU. This strong growth performance—comparable with that of the newly industrialized countries of Asia—has accelerated Ireland's convergence toward the average level of per capita income in the EU (*see chart at right*). Financial discipline, improved international competitiveness, outward-looking policies, the successful attraction of inward investment in fast-growing activities, a skilled and growing labor force, and substantial EU transfers have been the underpinnings of Ireland's impressive economic performance.

In contrast to the recent period, the early 1980s were characterized by a rapid increase in government indebtedness, modest economic growth, and higher inflation. Double-digit budget deficits (in percent of GDP) raised the debt-to-GDP ratio to almost 120 percent by 1987 (*see chart below*). Real interest rates remained high, exacerbating the mounting debt burden. Recognizing that the economy was at the edge of a financial precipice, the authorities set targets for a sharp reduction in the deficit. Strict adherence to deficit targets—mainly achieved through expenditure restraint—combined with a monetary policy oriented toward price stability and the exchange rate anchor offered by the ERM, produced a solid foundation for economic recovery in the 1990s. The turnaround in economic performance has placed Ireland in a strong position to be one of the initial members of the planned Economic and Monetary Union (EMU).

Ireland: General Government Budget Balance and General Government Debt
(In percent of GDP)



Per Capita GDP
(In 1987 U.S. dollars; purchasing power parity terms)



In the early 1990s, domestic demand was depressed owing to weak consumer demand and sharply declining investment. The main source of growth in the economy during this period was the largely foreign-owned, high-tech export sector, which expanded during 1990–93 at an annual rate of 9½ percent. Stronger gains in labor productivity in Ireland relative to trading partners steadily reduced unit labor costs. The resulting real effective depreciation of the Irish pound in turn provided a boost to the export sector (*see chart at right*). During 1994–96, however, overall growth rebounded, averaging about 8 percent. A number of factors contributed to this remarkable surge in economic activity. First, declines in interest rates and improved consumer confidence sparked a rebound in domestic demand from its depressed levels in the early 1990s. Second, fiscal policy did not restrain domestic demand. Third, and most important, the improved external environment combined with further improvements in competitiveness associated with growth in productivity contributed to an even better export performance. During 1994–96, export revenues for goods and services increased at an annual rate of about 15 percent, led by the high-tech manufacturing sectors.

Exports have played a significant role in supporting and boosting growth in Ireland, reflecting the substantial changes that have taken place in the manufacturing sector. Output and productivity in the sector have risen largely owing to the increasing importance of foreign direct investment in a number of dynamic high-tech sectors, which include office equipment, electrical engineer-

Ireland: Competitiveness Indicators
(1980 = 100)

[1]Based on consumer price index.
[2]Based on normalized unit labor costs.

ing, instrument engineering, and pharmaceuticals. As a result, the Irish manufacturing sector has two fairly distinct parts: a modern sector, which is export oriented, efficient, and dominated by large foreign-owned firms, and a traditional sector, which tends to be less dynamic and more likely to produce for the local market. The increasing importance of the modern manufacturing sector is partly a result of policies designed to attract foreign direct investment. Domestic and foreign manufacturing firms and certain international financial services are subject to a preferential corporate tax rate. In addition, as elsewhere, many firms qualify for grants to defray start-up costs and research and development expenses. Ireland's increasingly skilled workforce and its membership in the EU are also factors in attracting foreign investment—most notably from the United States and Japan—and enhancing the competitiveness of the modern manufacturing sector.

Net transfers from the EU—which declined from their peak in the early 1990s to about 4½ percent in 1996—have also contributed to Ireland's strong economic performance (*see table*). Structural fund transfers to Ireland, amounting to 2¼ percent of GNP in 1996, have supported public investment especially in infrastructure, training, and education. Eligibility for these funds is determined by how per capita income of Ireland compares with the EU average. With Ireland's progress in improving its per capita income position relative to the EU average, structural fund transfers may be reduced beginning in 1999 when the current program of transfers ends. An even larger source of EU transfers, however, has been subsidies received under the Common Agricultural Policy (CAP) through the Fonds Européen d'Orientation et Garantie Agricole (FEOGA). These payments are mainly based on agricultural prices and output in Ireland. In the longer term, further CAP reform, which is likely to be needed with the expansion of the EU, would result in cutbacks in such transfers.

Ireland's strong and broad-based growth performance during 1994–96 contributed to an unprecedented pace of job creation, with employment rising at an annual rate of nearly 4 percent, mainly in the service sector. Unemployment fell from 16½ percent in 1993 to 12 percent in 1996, still about 1 percentage point above the EU average. Long-term joblessness—which is concentrated among the unskilled and accounts for about half of total unemployment—remains a major problem, although recent employment programs to increase the attractiveness of hiring the long-term unemployed appear to hold some promise.

The scope for further increases in productivity arising from continued improvements in workforce skills, relatively rapid growth in the working age population (owing to demographics, rising female participation rates, and the return of Irish workers from abroad), and additional foreign direct investment point to annual growth in potential output of about 4 to 5 percent. This should allow Ireland to continue to catch up with average living standards in the rest of Europe, albeit probably at a more moderate pace than in recent years.

Net EU Transfers
(In percent of GNP)

	1990	1991	1992	1993	1994	1995	1996
FEOGA	5.3	5.3	4.2	4.6	3.8	3.4	3.7
Structural funds[1]	1.9	3.4	3.3	3.4	2.2	2.6	2.3
Contributions to EU	1.2	1.4	1.3	1.6	1.7	1.6	1.5
Net EU Transfers	6.0	7.3	6.2	6.4	4.4	4.4	4.6

Source: Ministry of Finance, *Budget*, various years.
[1]Includes payments under the FEOGA guidance fund, the European Social Fund, the European Regional Development Fund, the Cohesion Fund, and miscellaneous funds.

Table 15. Foreign Exchange Trading

(In billions of U.S. dollars and in percent)

	1986	1989	1992	1995
Global estimated turnover[1]	188	590	820	1190
As a ratio of:				
World exports of goods and services	7.4	15.8	17.4	19.1
Total reserves minus gold (all countries)	36.7	75.9	86.0	84.3

Sources: Bank for International Settlements; and International Monetary Fund.

[1]Daily average turnover, on spot, outright forward, and foreign exchange swap transactions, adjusted for local and cross-border double counting and for estimated gaps in reporting.

Figures are based on surveys of activities in the three largest exchange market centers (London, New York, and Tokyo) in 1986, and markets in 21 countries in 1989 and 26 countries in 1992 and 1995. The London, New York, and Tokyo markets accounted for 57 percent of global turnover in 1989, 54 percent in 1992, and 56 percent in 1995.

accounts, or if financial and real assets are not perfectly substitutable.[34]

In any event, the extent of financial market integration cannot be inferred from the volume of capital flows alone. In fact, international financial markets could be highly or even perfectly integrated, with asset prices adjusting in anticipation of capital flows, but with little or no arbitrage flows actually taking place. To assess the degree of financial market integration, it is also necessary to examine the extent to which asset prices are equalized.

This can be done at various levels. At one level, the integration of international financial markets requires that onshore and offshore yields on the same instruments, denominated in the same currency, are equalized. Since no currency risk is involved, yields can diverge only because of transaction and information costs and impediments to mobility, such as capital controls, political risk, and default risk. In keeping with the rapid decline in transactions costs and the dismantling of capital controls, onshore/offshore interest rate differentials have declined markedly during the past fifteen years and are now minuscule for most advanced economies, suggesting a very high degree of integration.

The trend toward closer integration is revealed also by the decline in deviations from covered interest parity (CIP).[35] With barriers between national markets greatly diminished, and not inhibiting potential arbitrage flows between national markets, and with currency risk eliminated by forward cover, departures from CIP have on average become much smaller.[36] Divergences from CIP for domestic short-term interest rates declined in the early 1980s in response to the financial deregulation and liberalization of capital movements undertaken by many countries (Chart 28). Since then the dispersion seems to have stabilized at a lower level, except for the temporary widenings associated with large disturbances, such as the 1992 European Monetary System (EMS) crisis.

Even with perfect capital mobility and no transaction costs, domestic nominal interest rates can of course still differ because of "currency premiums," comprising expected exchange rate changes and risk premiums. For countries maintaining fixed exchange rates, however, nominal interest rates can be expected to converge. Indeed, the dispersion of both short-term domestic interest rates and short-term Euromarket interest rates for European countries tended to decrease during the 1980s, a trend that was disrupted by the 1992 exchange market turbulence and the exit from the ERM of some major European currencies (Chart 29). Not surprisingly given the flexibility of their exchange rates, it is harder to detect a marked tendency for interest rates to converge among the three major industrial countries. Tests of uncovered interest parity (UIP) have generally concluded that UIP does not hold and that assets denominated in different currencies are imperfect substitutes.[37] Both time-varying, exchange rate risk premiums and systematic exchange rate forecast errors have been found to underlie deviations from UIP.[38]

[34]See, for instance, Michael Artis and Tamim Bayoumi, "Saving, Investment, Financial Integration, and the Balance of Payments," IMF Working Paper 89/102 (December 1989), and Jeffrey A. Frankel, "Quantifying International Capital Mobility in the 1980s," *On Exchange Rates* (Cambridge, Massachusetts: MIT Press, 1993), pp. 41–69.

[35]When CIP holds, the difference in interest rates on comparable instruments denominated in different currencies should equal the cost of cover in the forward exchange market.

[36]These departures, except for the wedge introduced by transactions costs, reflect "country premiums," that is, current capital controls or the expectation of future controls, and perceptions of default risk.

[37]UIP states that expected returns on investments in different currencies are equal when measured in a single currency. UIP is equivalent to the combination of CIP and the assumption that the forward exchange rate equals the expected future spot exchange rate.

[38]See Peter Isard, *Exchange Rate Economics* (Cambridge, England; New York: Cambridge University Press, 1995).

A deeper level of integration requires that capital flows equalize real interest rates between countries. Real interest rate parity is a more stringent condition than UIP because it requires in addition that expected changes in exchange rates equal anticipated inflation differentials. Thus, it also requires a close integration of goods markets. Nominal exchange rates have in fact departed considerably from the predictions of relative purchasing power parity (PPP), especially in the short run. It is only over long spans of years that there is more of a tendency for relative PPP to hold (Chart 30). The dispersion of real short-term interest rates declined in the 1980s but widened in the early 1990s in connection with various shocks, in particular, German unification and the EMS crises (Chart 31).[39]

In the case of long-term interest rates, lack of data prevents detailed analysis of parity conditions: no forward exchange rates or reasonable estimates of expected inflation are available for long horizons in most cases. The dispersion of nominal bond yields seems to parallel the dispersion of inflation rates. The supply shocks of the 1970s, combined with different policy responses, resulted in large cross-country differences in inflation rates and a corresponding increase in the dispersion of nominal bond yields. The decline in the dispersion during the 1980s was equally steep and is largely attributable to developments in Europe, where both inflation rates and policy fundamentals converged rapidly in preparation for EMU (Chart 32). For the three major advanced economies, there does not appear to have been any marked tendency for the dispersion of nominal bond yields to decline over time.

In summary, financial markets have become increasingly integrated, but they are far from forming a single global market. Still, the degree of integration is high enough to strongly affect the conduct and effects of macroeconomic, regulatory, and prudential policies.

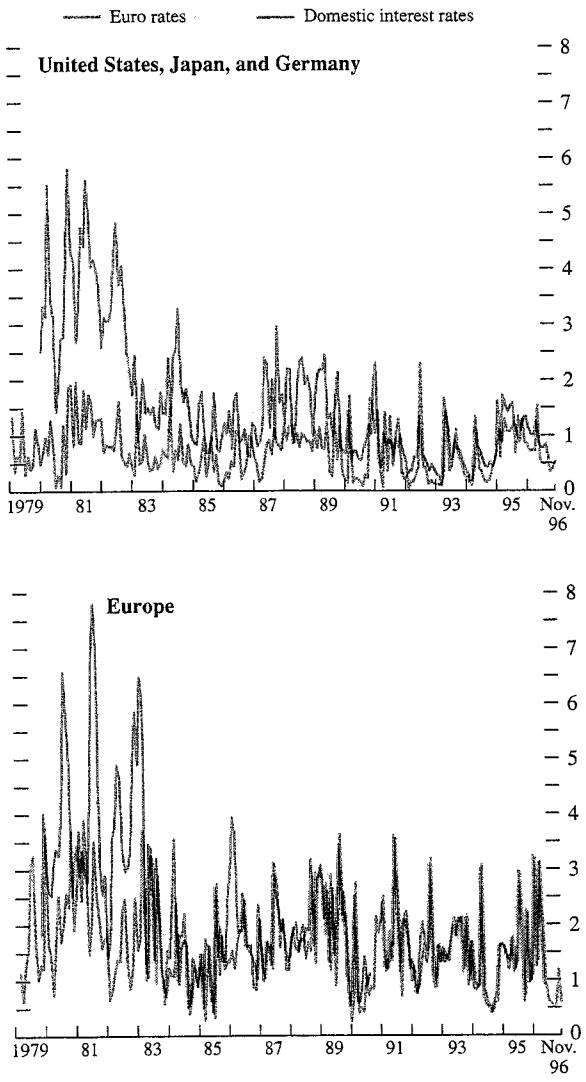
Implications for Macroeconomic Policy

The issue of monetary policy autonomy arises mainly in the context of floating exchange rates. National monetary policy autonomy under fixed exchange rates is at best limited to the short run, when prices are sticky and exchange rates can move within relatively narrow bands; in the longer run, domestic monetary policy is determined by the anchor country. But the difference between fixed and floating exchange rate arrangements is in practice probably less sharp than may appear. The reason is that, irrespective of the exchange rate regime, reasonable price stability is now widely accepted to be the principal goal of

Chart 28. Selected Advanced Economies: Dispersion of Covered Interest Differentials[1]

(In percent a year; three-month rates)

Divergences from covered interest parity narrowed in the 1980s as financial markets became more integrated.

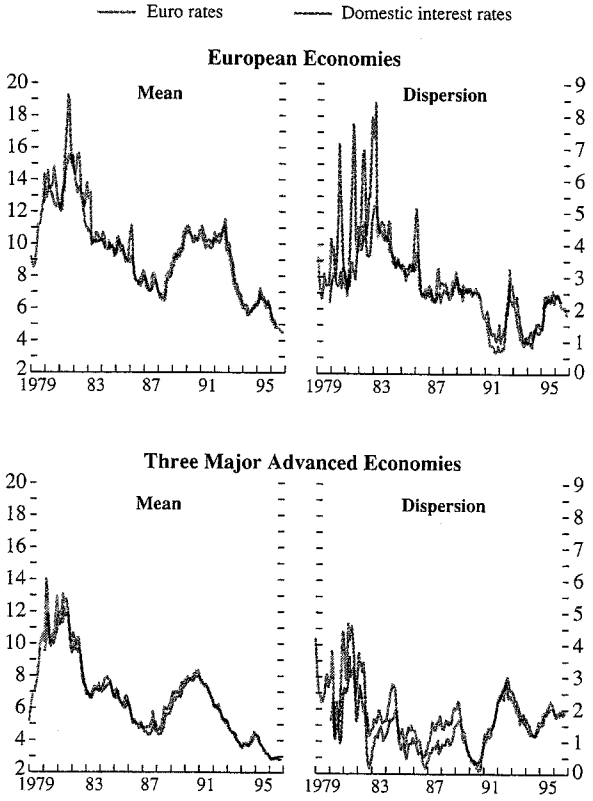


[1]Standard deviations of covered interest differentials between U.S. three-month rates and corresponding rates whose dollar returns are covered in the forward exchange market. In the bottom panel, the differential is with respect to German three-month rates. Europe comprises Germany, France, Italy, the United Kingdom, the Netherlands, and Switzerland. Data are monthly averages.

[39]Pravin Krishna and Bart Turtelboom, "The International Linkage of Real Interest Rates Revisited," IMF Working Paper (forthcoming) find that the comovement of real interest rates within Europe rose from the mid-1980s but find no evidence that the U.S.-Germany real interest rate link became stronger.

Chart 29. Selected Advanced Economies: Mean and Dispersion of Nominal Short-Term Interest Rates[1]
(In percent a year; three-month rates)

The dispersion of nominal interest rates declined in the European economies in the 1980s.



[1]Dispersion is defined as the standard deviation from the appropriate cross-country mean. European economies comprise Germany, France, Italy, the United Kingdom, the Netherlands, and Switzerland; the three major advanced economies consist of the United States, Japan, and Germany. Data are monthly averages.

monetary policy. The means chosen to achieve that goal, however, depend on the extent of capital market integration.

One of the main implications of high capital mobility is that it has made adjustable exchange rate pegs more difficult to sustain in the absence of strict policy convergence and appropriate economic fundamentals.[40] Also, asymmetric real shocks that require real exchange rate adjustments may cause difficulties, especially in countries with rigid labor and product markets. That is why it may be preferable for countries to adopt either permanently fixed (as in a monetary union or currency board arrangement) or fully flexible exchange rates. The vulnerability of fixed-but-adjustable exchange rate systems to changes in investor sentiment was most recently illustrated by the 1992 and 1993 ERM crises and the 1995 Mexican financial crisis.

With floating exchange rates, national monetary authorities have greater independence in choosing their inflation objective. Although monetary policy is strongly influenced by international financial markets, increased financial market integration does not appear to have diminished its effectiveness. Closely linked capital markets have, however, changed the monetary transmission mechanism by enhancing the role of the exchange rate. Domestic interest rates may have to adjust less to achieve the monetary policy objective because more adjustment comes through the exchange rate. The implications may be favorable for the distribution of demand across sectors, in that the burden of adjustment is not borne mainly by the domestic interest-sensitive components of expenditure. It may also have favorable fiscal effects as, in episodes that require monetary tightening, for instance, the burden of government debt service may be smaller when the adjustment in monetary conditions comes through both interest rates and the exchange rate, than when it comes mainly through interest rates.[41] The opposite can also occur, however, as market concerns about the appropriateness of domestic macroeconomic policies exert downward pressure on the exchange rate and may augment risk premiums in national interest rates. The experiences of Italy, Sweden, and some other European countries during 1993–95 demonstrate this latter point. But as those experiences also show, international financial markets can serve to "discipline" governments (either by raising default premiums or by forcing adjustments in exchange rates), encouraging the adoption of appropriate policies, and ultimately rewarding good policies.

[40]Lars E.O. Svensson, "Fixed Exchange Rates as a Means to Price Stability: What Have We Learned?" *European Economic Review*, Vol. 38 (April 1994), pp. 447–68.

[41]Any favorable fiscal effect would be muted in countries where a large proportion of the national debt is denominated in foreign currency.

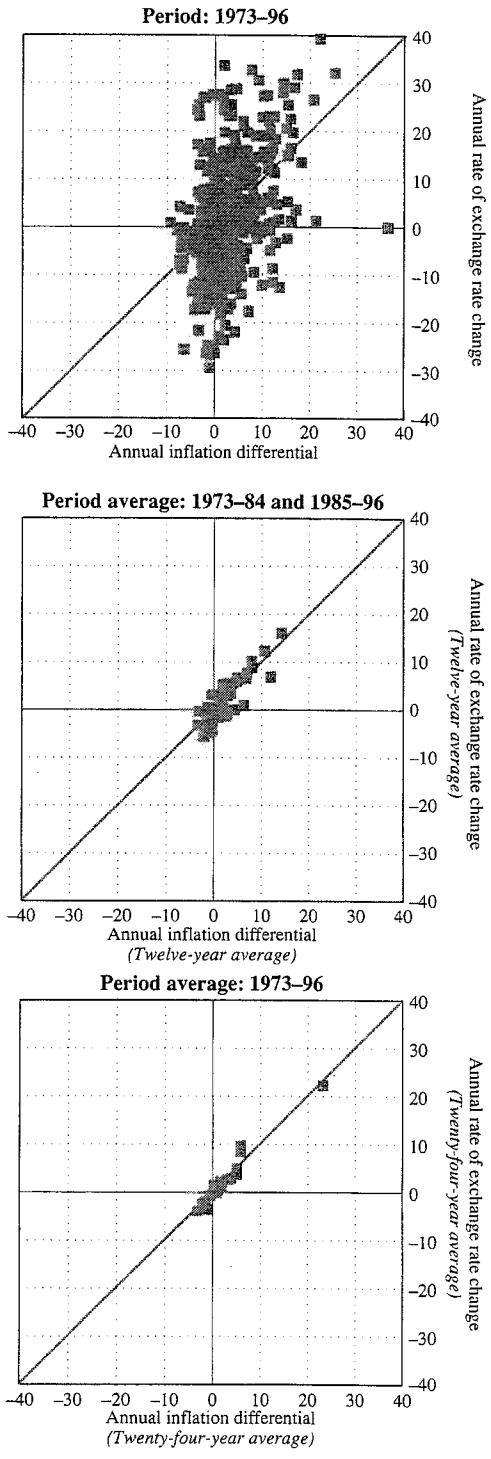
Internationally integrated financial markets can pose challenges to policymakers if, as some believe, financial markets generate "excessive" volatility of assets prices. What constitutes excessive volatility is debatable. The evidence does not point to a rise in financial asset-price variability in recent decades.[42] Nor are there analytical grounds for believing that financial market integration increases volatility. However, the short-term volatility of asset prices, in particular exchange rates, can at times appear excessive, when compared with the volatility of their fundamental determinants. The crucial issue is whether or not the volatility of asset prices reflects the efficient functioning of financial markets. In this respect, it is not so much short-term volatility as significant and sustained misalignments of asset prices from values consistent with fundamentals that are of concern, because of the macroeconomic imbalances and economic distortions to which they can give rise.

Financial market prices can at times become misaligned, as exemplified by the overvaluation of the U.S. dollar in 1984–85, the rise in the stock market before the crash of 1987, and the appreciation of the yen in early 1995. Apart from the problems caused by the misalignments themselves, the eventual corrections can be disruptive and pose substantial risks for financial stability. Misalignments are often hard to identify because of the difficulty of assessing the level of asset prices consistent with macroeconomic fundamentals. And even when monetary authorities can identify a misalignment, say in the exchange market, the large volumes of private market flows may make it difficult for them to bring about a correction. Exchange market intervention by individual central banks may be insufficient for the task. Coordinated intervention may be more effective but may still be unable to match the resources of the private sector. Coordinated intervention may be far more effective, however, if it serves as a signal to markets of international macroeconomic policy cooperation and of a mutual commitment to the adoption of sustainable policies. The "quality" of intervention—in the sense of a signaling mechanism—may thus be even more important than the quantity of intervention. This was most recently illustrated in the summer of 1995, when coordinated intervention by the major central banks helped to bring about a correction of the yen/U.S. dollar rate from its excessively appreciated level.[43]

The opposite may also occur. Markets may become convinced that a particular exchange rate is unsustainable, making it impossible for official exchange mar-

Chart 30. Advanced Economies: U.S. Dollar Exchange Rate Change and Inflation Differential

Deviations from relative purchasing power parity can be large in the short run and significant even in the longer run.

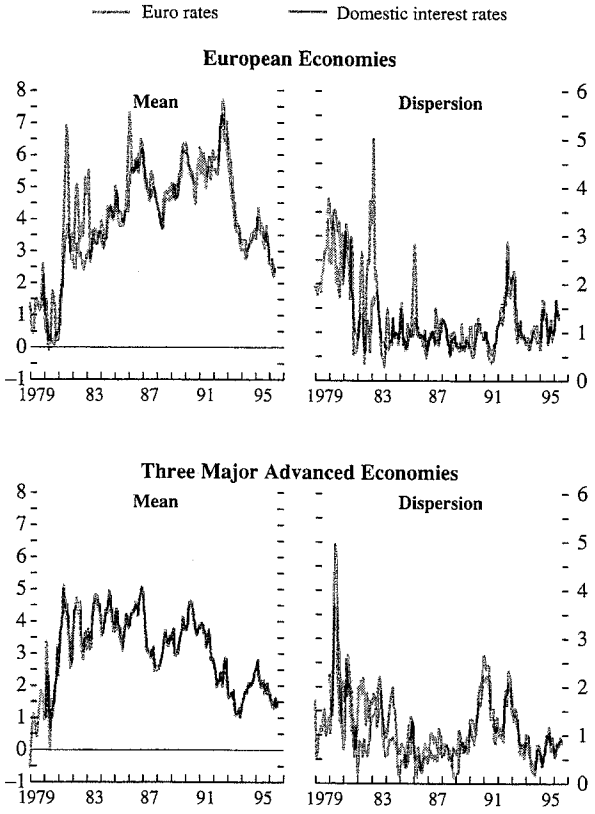


[42]See Bank for International Settlements, *Financial Market Volatility: Measurement, Causes and Consequences*, BIS Conference Papers, Vol. 1 (Basle: Bank for International Settlements, Monetary and Economic Department, March 1996).

[43]For a discussion of this episode, see the October 1995 *World Economic Outlook*, pp. 32–37.

Chart 31. Selected Advanced Economies: Mean and Dispersion of Real Short-Term Interest Rates[1]
(In percent a year; three-month rates)

The dispersion of real short-term interest rates declined in the 1980s.



[1]Real interest rates are nominal rates deflated by the ex post 12-month change in the consumer price index. Dispersion is defined as the standard deviation from the appropriate cross-country mean. European economies comprise Germany, France, Italy, the United Kingdom, and the Netherlands; the three major advanced economies consist of the United States, Japan, and Germany.

ket intervention to support it effectively. The pressures against a parity may then be so intense that even extraordinarily large increases in interest rates may be ineffective, as experienced during the September 1992 ERM crisis.[44]

Another consequence of highly integrated financial markets is that shocks that occur in one market may be more easily transmitted to other markets. Shocks to asset prices in one country have at times spread quickly to similar assets in other countries, but generally they have not spilled over on a comparable scale into markets in other assets, so that the systemic consequences of disruptions in any one market have been limited. Nonetheless, the possibility cannot be dismissed that effects in different markets can interact to magnify shocks, thus increasing macroprudential or systemic risk. Increased integration also makes it possible, however, for disturbances to be absorbed by a bigger market, thus dampening the effects on any particular national market. In any event, the continuing globalization of financial markets will increasingly demand a broad multilateral approach to maintaining a sound and efficient international financial system.[45]

The enormous growth of financial markets has also increased the tendency for countries with open capital markets to experience large inflows of foreign capital. While not uncommon in the advanced economies, in recent years this has been most marked in some rapidly growing emerging market economies with developing financial markets. Capital inflows can ease a country's external financing constraint; but large inflows can also adversely affect macroeconomic stability by fueling inflation and raising real exchange rates to unsustainably high levels. The latter is more likely to be the case when the inflows are temporary, driven, for instance, by international interest rate movements or by shifts in market sentiment not supported by changes in the host country's fundamentals, rather than by improved longer-term investment opportunities. In some cases, the capital inflows may be attracted by high domestic interest rates required for domestic stabilization and may pose difficulties when the capital inflows are too large to be sterilized. Depending on the nature and the cause of the capital inflows, and depending also on institutional factors such as the structure of prudential regulations and supervision and the robustness of the domestic banking system, authorities have various instruments in addition to sterilized intervention for dealing with large

[44]The above discussion has focused on foreign exchange markets, the core of the international financial system, but similar considerations apply to other asset markets, in particular, equity and real estate markets. Recent examples include the run-up and subsequent collapse of equity and real estate prices in several countries in the latter half of the 1980s and the 1994 drop in bond prices.

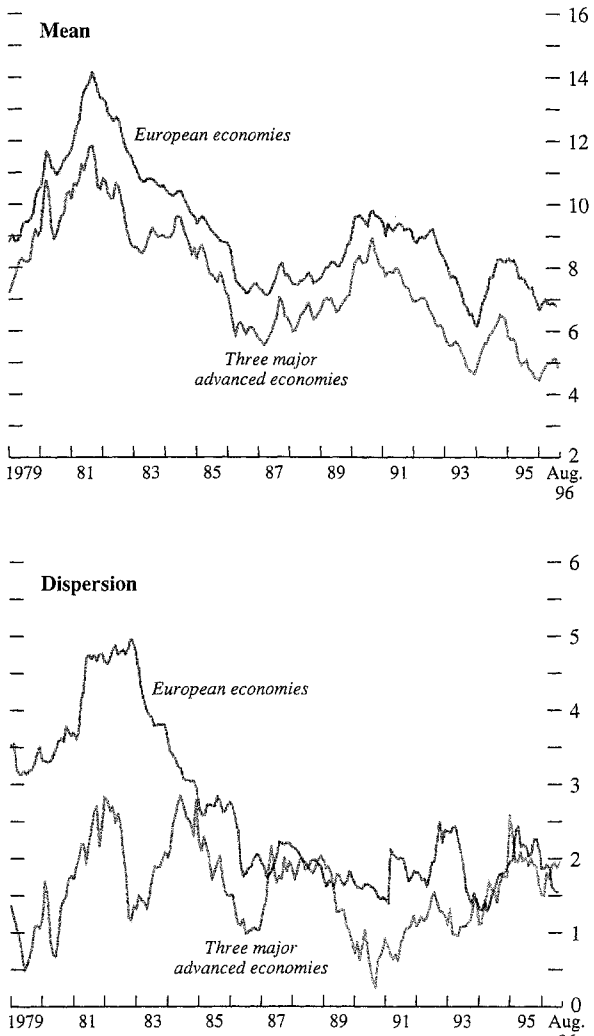
[45]For a discussion of the issues involved, see *International Capital Markets: Developments, Prospects, and Key Policy Issues* (IMF, September 1996 and August 1995).

capital inflows. These include exchange rate, fiscal, and monetary adjustments, as well as financial regulatory measures and price-based capital controls (i.e., various types of financial transactions taxes, stamp duties, and fees).[46] The effectiveness of controls, though, is likely to be limited, and the inflows are likely to persist until policies are adjusted to address the factors providing the incentives for the inflows.

The increased integration of financial markets in recent years has made even more evident the well-known proposition that of the three objectives of independent monetary policy, fixed exchange rates, and open capital markets, policymakers can simultaneously adopt not more than two. Recognition of this constraint has induced some to advocate throwing "sand in the wheels" of the international financial market by taxing cross-border financial transactions.[47] The argument rests on the notion that a transactions tax will naturally tend to discourage short-term capital flows, which are assumed to be destabilizing and undesirable but not affect long-term capital flows, which are assumed to be desirable and based on fundamentals. On the whole, short-term capital flows are not socially undesirable, however, and, in any event, there is no clear way of discriminating between socially desirable and undesirable, or between stabilizing and destabilizing, short-term financial transactions. Nor is there any strong evidence that lower transaction costs are associated with higher asset-price volatility.[48] Moreover, from a practical perspective, unless the tax were implemented globally and across a broad range of financial instruments, its effect would simply be to shift the location of the trading and the instruments used. Governments have more and more come to recognize that the constraints imposed by financial market globalization are best addressed not by imposing restrictions on the free flow of capital, but rather by adopting sound, transparent, and sustainable macroeconomic policies that reduce the risk of sudden changes in market sentiment, and by engaging in international policy cooperation. At the "micro" level such cooperation can help to establish and to ensure the observance of a set of core regulatory and supervisory standards, and at the "macro" level it can help in the pursuit of policies that lead to the convergence of inflation at low

Chart 32. Selected Advanced Economies: Mean and Dispersion of Nominal Bond Yields[1]
(In percent a year)

The dispersion of long-term interest rates declined steeply in the 1980s, especially in Europe.



[1]Dispersion is defined as the standard deviation from the appropriate cross-country mean. European economies comprise Germany, France, Italy, the United Kingdom, Belgium, the Netherlands, and Switzerland; the three major advanced economies consist of the United States, Japan, and Germany.

[46]For a discussion of the causes of large capital inflows to some developing and transition countries and the design of appropriate policy responses, see Annex IV in the October 1996 *World Economic Outlook*.

[47]For example, James Tobin, "A Proposal for International Monetary Reform," *Eastern Economic Journal*, Vol. 4 (1978), pp. 153–59.

[48]For instance, despite declining transactions costs, U.K. asset-price volatility (for treasury bills, ten-year gilts, equities, and sterling versus dollar exchange rate) has tended to decline since the late 1970s—see Nicola Anderson and Francis Breedon, "U.K. Asset Price Volatility Over the Last Fifty Years," in Bank for International Settlements, *Financial Market Volatility*, pp. 396–428.

rates and that avoid unwarranted fluctuations in exchange rates.

Implications for Tax Systems

In addition to the implications for the conduct of monetary and fiscal polices, globalization also has implications for countries' tax systems. The origins of national tax systems and the current structure of government spending can be traced back to a period with substantially less open economies and lower factor mobility. Correspondingly, taxation is largely based on the "territoriality principle," that is, the right to tax incomes and activities within the territory of the jurisdiction. In an increasingly global environment, this principle loses efficiency and can prove to be a potential source of conflict.[49]

Globalization may be expected increasingly to constrain governments' choice of tax structures and tax rates, especially in smaller countries. Internationally mobile factors of production—financial capital and some highly trained segments of the labor market—can more easily avoid taxes levied in particular countries. The scope for tax evasion by individuals and corporations has also been enhanced. Indeed, many countries have experienced an erosion of the capital income tax base. Some governments have responded to the erosion by establishing favorable tax regimes. This "tax competition" may affect the average tax level of some countries by obliging them to lower tax rates for certain taxes. To the extent that the allocation of capital will be driven by tax considerations rather than by pretax rates of return, the allocation of capital will be less efficient. In a similar vein, personal income taxes and expenditure policies related to social spending are likely to become a more important factor in labor migration. Presumably, globalization will increasingly tend to cause tax systems to converge either through tax harmonization or via tax competition across jurisdictions.

Implications for the Cycle and Inflation

Finally, the increased integration of national economies raises two other macroeconomic issues: Have output fluctuations become more synchronized across countries? And is globalization a force for lower inflation? Cyclical variations in output do not appear to have become more correlated internationally, as indicated by divergent movements in output gaps among the major advanced economies in recent years. The correlations were higher in the 1970s, because of the large supply shocks that affected all countries simultaneously. Also, although fluctuations in the growth of industrial production for the major advanced economies are strongly correlated with the "world business cycle" (i.e., the common component of international fluctuations), there have been no systematic differences in these correlations over time.[50] Country-specific shocks and common shocks account for most of the variability in output in the major advanced economies—from 75 percent to 95 percent according to one recent estimate.[51] The transmission of country-specific shocks through trade links is rather limited, except for those originating in the United States, which, because of that country's economic size, are felt more strongly abroad than those of other countries. Moreover, on the basis of correlations between trade and output, it does not appear that the international transmission of country-specific shocks through trade flows has increased in the past two decades or so.[52] Thus, apart from the influence of common disturbances, such as commodity price shocks or technology shocks, it is still mainly nonsynchronous domestic disturbances that drive business cycle fluctuations.

As for inflation, its decline in recent years is mainly the result of determined policy actions to bring it under control. But the increased openness to trade and capital flows may also have played a role in some cases. Foreign competition, outsourcing, and the increased internationalization of production may have served to suppress wage demands or raise productivity growth, thereby reducing cost pressures. These effects of globalization will tend, however, to result in one-time downward shifts in the price level rather than ongoing restraints on the rate of inflation. The aspect of globalization that is more likely to have a long-lasting influence on inflation is the discipline on domestic financial policies imposed by increased financial market integration.

* * *

Does globalization make it more difficult to achieve the legitimate and desirable aims of economic policy? On the whole, it would seem not, even though at times large short-term capital flows can adversely affect macroeconomic stability, and asset prices, including exchange rates, can as a result become misaligned. What globalization does, rather, is limit the scope for countries to pursue policies that are incompatible with medium-term financial stability. The disciplining effect of global financial and product markets applies

[49]For a detailed discussion of these issues see Vito Tanzi, "Globalization, Tax Competition and the Future of Tax Systems," IMF Working Paper 96/141 (December 1996), and *Taxation in an Integrating World* (Washington: Brookings Institution, 1995).

[50]Robin L. Lumsdaine and Eswar S. Prasad, "Identifying the Common Component in International Economic Fluctuations" (unpublished; IMF, December 1996).

[51]Stefania Fabrizio and J. Humberto Lopez, "Domestic, Foreign or Common Shocks?" IMF Working Paper 96/107 (September 1996).

[52]Manmohan Kumar and Eswar Prasad, "International Trade and the Business Cycle," IMF Working Paper (forthcoming).

not only to policymakers, via financial market pressures, but also to the private sector, by making it more difficult to sustain unwarranted wage increases and price markups. If markets adopt too sanguine a view of a country's economic policies and prospects, however, this could relax policy discipline for a time and result in a high adjustment cost when market perceptions change. Rather than acting as a constraint on the pursuit of appropriate policies, globalization can provide added leverage to such policies. It may also provide added flexibility. The greater international mobility of private capital, by easing financing constraints, can extend the time period over which countries can implement needed adjustments. Markets will be willing to provide this leeway, however, only if they perceive that countries really are making adjustments that fundamentally address existing and prospective imbalances. Otherwise, markets will eventually exert their own discipline, in such a way that the time period for adjustment may be brutally shortened.