

Dollar, D., and Wolff, E.N.: *Competitiveness, Convergence, and International Specialization*. IX, 228 pp. MIT Press, Cambridge, MA London, 1993. Hardcover US \$ 47.25.

In the most advanced industrialized countries, the public debate about the future economic performance has been intense during the past decade. It continues unabatedly in, for example, Germany, where there is a pervasive fear that the country will lose its economic position in Europe and the world. However, the debate in the US on its future economic position is just as intensive, and even the Japanese are suffering from considerable self-doubt about Japan's economic future. Keeping these economic anxieties in mind, David Dollar and Edward N. Wolff present some interesting insights into the development process of the OECD economies as well as some selected newly industrialized countries (NICs). For example, they investigate why and how Japan and Germany caught up to the US, in terms of productivity and standard of living, within the last thirty years. One of their main findings is that this catching-up can be interpreted as a "natural" development and that therefore the Americans should not consider themselves as having been left behind in terms of economic performance.

Although "economic competitiveness" is often applied to countries when describing their economic status, it is often done inappropriately. In the case of enterprises "economic competitiveness" is used to describe firms producing high-quality but low-cost products which can be sold worldwide, so the firms can realize high exports and high market shares. Following this line of

thought, an aggregate economy would be competitive if it consists of numerous competitive firms that achieved a trade balance surplus. However, economists agree that, at least in the long run, a look at trade balances gives no indication of the competitiveness of a particular country. For instance, a trade surplus achieved by low real wages or a heavily devaluated domestic currency does not raise the welfare of a nation and is thus not a meaningful measure of competitiveness.

For Dollar and Wolff, a competitive nation is one "that can succeed in international trade via high technology and productivity, with accompanying high income and wages" (p. 3). Their book is primarily a comparison of productivity performances across countries and across sectors or industries within countries. These comparisons constitute a contribution to the convergence debate. The convergence argument deals with interregional development comparisons and has its roots in Gerschenkron's "advantage of backwardness thesis" on the one hand and Solow's neoclassical growth model on the other. According to this framework, it is not surprising that leading industrial economies do not maintain their productivity advantage over time. Rather it should be expected that different countries in the world economy will become more equal in terms of productivity and prosperity over time.

This view has been seriously challenged in recent years by some models of the so-called new growth theory. These models assume production conditions which allow for persistent endogenous growth and diverging productivity levels across regions. Since the mid-1980s, a considerable amount of research has been conducted by economists who have tried to establish empirical evidence on whether or not poorer countries are able to catch-up to the per-capita income of the richer ones. So far, the evidence seems to show that there is no convergence of labor productivity among all countries in the world economy in absolute terms, but there may be an absolute convergence among the more advanced economies within the OECD. Among larger samples of countries a kind of conditional convergence may arise, i.e., convergence of productivity levels after controlling for some important factors of growth like investment, human capital, and international trading relations. It should be noted that almost all available convergence studies deal with productivity comparisons on the most aggregate level.

In their book, Dollar and Wolff set out to provide further insights into the growth and convergence process. They investigate whether there may be convergence not only on the aggregate but also on the sector and industry level. This question arises out of the fact that poorer countries may be able to catch-up to the productivity leaders in two different ways: first, by shifting the labor force of so-called low-productivity sectors and industries into high-productivity ones and second by realizing high productivity growth in basically all sectors and industries within the country. The former possibility means that countries could have the same labor productivity at the industry level but nevertheless show different levels of aggregate productivity, because the distribution of employment in high- and low-value-added sectors is different across countries according to factor endowments. Convergence results when the initial employment mix shifts toward high-productivity industries. This process



is induced by gradually changing factor endowments. The second possibility, that productivity advances are realized in all sectors, states intercountry differences in productivity exist on the disaggregate level, but they will decline simultaneously in all industries and sectors. If poor countries are catching up on the disaggregate level, economic progress cannot be seen as a successful fight for market shares in specific high-value-added sectors. Dollar and Wolff find a clear evidence for convergence on the micro level and evidence against convergence of the employment mix in the OECD and some of the NICs. Their book therefore provides a strong contention to the familiar trade and industry policy argument that claims the existence of strategic sectors.

Dollar and Wolff aim to refute the so-called "deindustrialization thesis," which has received widespread attention in the US. Proponents of this thesis proclaim the loss of industrial cores accompanied by a decline in manufacturing output and export shares. Comparing American output and export shares of industrial products with that of other advanced economies, they find that the US, as the most advanced economy in the postwar period, has not experienced a significant decline in its relative economic position. Moreover, in 1985, the year the authors focus on, the distribution of manufacturing output across countries broadly mirrors the distribution of population.

With respect to the terms "competitiveness" and "convergence" these results are somewhat misleading. Of course it is inappropriate to look at absolute values of output or export shares when comparing the competitiveness or the state of productivity among countries. However, it is also not fully satisfying to view per-capita output as an appropriate method of measurement, since population is not a proper measure of the labor force. In fact, as shown in the more advanced sections of the book, labor productivity, i.e., output-per-worker, was far from being equal in the OECD countries in the focus year 1985.

The main part of Dollar's and Wolff's book examines the convergence hypothesis. To this end, the authors deal extensively with the manufacturing sector and its industries. Concentration on manufacturing is due to data availability and this sector's overwhelming importance for international production and trade. A closer look at the relative labor productivity levels within the manufacturing sectors of thirteen OECD countries shows that during the period of 1963 to 1986 the economic performance of the countries converged. The unweighted average of twelve follower countries' value-added per hour worked amounted, relatively to the US, to 47% in 1963 and 60% in 1986. In order to make the process more transparent, Dollar and Wolff look at the sources of the observed aggregate convergence. This analysis is conducted in two steps.

First, Dollar and Wolff test to what extent catching-up was initiated by a shift in the employment mix or by a convergence of productivities on the industry level. They find that the coefficient of variation of value-added per hour worked in manufacturing declined not only at the aggregate level but also in almost all individual industries. Moreover, accounting for different output and employment mixes shows that their variation cannot be taken as an explanation for declining disparities of labor productivity. The US' capital abundance, for example, has not led to employment concentration in capital intensive industries. Nevertheless, Dollar and Wolff show that the convergence

process was still more pronounced at the aggregate level than at the industry level. Follower countries converged in basically all industries, but each country had a few specialized industries in which it did particularly well.

Second, the authors investigate the relative importance of capital-labor ratio convergence and the diminishing variation of technological sophistication for the diminution of inter-country productivity differentials at the industry level. Their growth accounting approach shows that, between the early 1960s and the mid-1970s, productivity convergence was primarily a result of technology transfers measured by the catching-up of total factor productivity. In Gerschenkron's spirit, Dollar and Wolff find that the most backward countries within the OECD sample exploited their advantage of backwardness during this period. Although the convergence process slowed down in the mid-1970s, it still continues. In recent years, convergence must be interpreted more as a consequence of converging capital-labor ratio than of technological catching-up. Dollar and Wolff also continue to find evidence of a strong interaction effect between capital accumulation and technological change among manufacturing industries. They explain this interaction on the one hand by the familiar embodiment effect and on the other hand by the stimulation of new capital formation by total factor productivity growth.

When applying the same methods to sectors other than the manufacturing sector and also to aggregate economies, the authors were able to confirm their earlier line of argument. It is particularly remarkable that convergence took place in all sectors, and that convergence was stronger on the aggregate level than within sectors, hinting again at the international specialization of the respective countries.

The country-specific total factor productivity advantages on the industry level are then used to explain trade patterns. Since the 1980s, these productivity advantages have been reflected in unit costs, meaning that real wage differences became a less dominant factor in explaining unit cost differences than the total factor productivity. Hence, it is not surprising that if a country's total factor productivity in a single industry is growing rapidly compared with other countries, the country becomes more competitive and expands its share of world trade. Therefore trade patterns reflect total factor productivity advantages. Moreover, the authors show that the change in a country's revealed comparative advantage is closely tied to the relative total factor productivity growth of its industries. As cross-country gaps in productivity growth rates are more severe on the industry level than on the aggregate level, the trade patterns of the industrial countries are not converging.

In the last chapter of their book, Dollar and Wolff use their results to derive some policy recommendations. Since they show that "strategic sectors" do not exist, they argue that there is no reason to protect special industries. The authors do not find out industries that generate especially strong technological spillovers and therefore induce high productivity growth in other sectors and industries. Different countries have achieved high productivity levels by specializing in very different industries. That does not stop others, mostly politicians, from proposing industry policy as a growth strategy. In fact, the US Department of Defense plays a role similar to the one MITI (Ministry of



International Trade and Industry) plays in Japan, and in the European Union the governments are also not abstinent in this respect.

Since technological progress is the engine of growth, Dollar and Wolff recommend R&D policy that creates incentives for private firms to engage in research and that also produces basic scientific advances in the public sector. Public engagement in research and development may be necessary since market failure characterizes this field of production. Further growth enhancing activities by governments would be, as Dollar and Wolff argue in a more intuitive way, a solid provision of education and an improvement of public infrastructure. The diminishing demand of the military sector after the Cold War is seen by the authors as a financial source of productive public investment open to Western industrialized nations. In addition, the reduced demand for public spending may also have a positive effect on private investment as public deficits and therefore capital absorption shrink.

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