From Learner to Teacher

Alice H. Amsden (Contributor Webpage)
DOI:10.1093/0195076036.003.0013

Abstract and Keywords
Late-industrializing countries such as Japan and South Korea appear to challenge existing economic powers such as the U.S.A. precisely in those areas in which the challengers excel by virtue of their recent histories as learners. Consequently, the book concludes with the major lessons that the learning paradigm of late industrializing offers to countries wishing to reindustrialize. In addition to illuminating the path of late industrializers, the paradigm's reflection also suggests where innovators might change their rules of behavior to compete in a world that now includes a generation of latecomers reared on the learning tradition.

Keywords: innovation, Japan, late industrialization, learning, market competition, reindustrialization, South Korea, USA

Back-Door Competition
Late-industrializing countries such as Japan and Korea appear to challenge existing economic powers such as the United States precisely in those areas in which the challengers excel by virtue of their recent histories as learners. Consequently, this book concludes with the major lessons that the learning paradigm of late industrializing offers to countries wishing to
reindustrialize. In addition to illuminating the path of late industrializers, the paradigm's reflection also suggests where innovators might change their rules of behavior to compete in a world that now includes a generation of latecomers reared on the learning tradition.

The competition in the late twentieth century between Japan, the quintessential learner, and the United States, the greatest economic power, unmistakably parallels a competitive relationship of the past. The United States has been challenged by Japan just as Great Britain was challenged a century earlier by the United States—on a new competitive front, using a new institutional framework. Neither Great Britain nor the United States could be said to have been attacked on its own turf, in its own area of preeminence— inventiveness in the case of Great Britain, innovation in the case of the United States.

Great Britain's inventiveness went unchallenged long after its economy had succumbed to competition from abroad. In the late nineteenth century, although England was responsible for path-breaking inventions such as chemical dyes, it was Germany that gained dominance in the international dye-making industry. At the same time, and assuming Nobel Prize laureates in chemistry, physics, and physiology/medicine may reasonably be considered an indicator of inventiveness, Great Britain prevailed in that arena until at least 1960 (United States Department of Commerce, various years). Today, U.S. innovativeness probably remains preeminent even as Japan continues to take market share from it in high-technology industries.\footnote{p.320} In terms of Britain's former province and one component of innovation— inventiveness—the United States is now indisputably master at the world technological frontier (forty of sixty-two Nobel Prizes in chemistry, physics, and physiology/medicine in 1976–1985 were awarded to Americans; only one was awarded to a Japanese) (United States Department of Commerce, various years). Moreover, in terms of the other component of innovation—the commercialization of inventions—the United States probably remains supreme. Nevertheless, although the United States was first in bringing to market such high-technology products as semiconductors, audio equipment like videocassette recorders and stereos, robots, flexible manufacturing systems, computer numerically controlled
machine tools, and continuous casting in steel-making, Japan took leadership in the areas of production and growth. At the micro level, American industry appears less capable than does its Japanese equivalent of producing high-quality products efficiently and bringing new generations of the same product to market quickly. These are precisely the areas in which learners, lacking novel technology, have built their competitive advantage and excel. The macroeconomic consequence is a weaker than otherwise association between innovation and growth.

Thus, where challenge comes from a new paradigm, the new paradigm, to be contained, must be understood by its own logic rather than by the logic of the paradigm that it is upstaging. It is therefore to a summary of the lessons of late industrialization that attention is now turned.
The most elementary lesson from late industrialization is that Japanese competition is not a unique, culturally specific phenomenon. There exists a much larger set of countries that include Japan, Korea, India and Brazil, each having similar institutions that have evolved in response to the exigencies of industrializing late through learning. These institutions include an interventionist state that deliberately distorts relative prices to stimulate economic growth, business groups that diversify widely to compete initially at the lower end of many markets, a strategic focus on shopfloor management, where respected engineers strive to achieve incremental productivity and quality improvements, and a politically and economically weak labor movement (motivated in Korea by high real wage increases).

Culture and history enter into this paradigm by determining how well it operates in particular countries. As already suggested in several (p.321) chapters, the paradigm operates especially well in Japan and Korea because the state in both countries is willing and able to exact performance standards from big business in exchange for trade protection and subsidies. Moreover, although the modern industrial enterprise and managerial hierarchies are dominant in the industrial sectors of all late-industrializing countries, Korea and Japan have been unusually successful in keeping overhead in check by allocating responsibility to engineers rather than to administrators, and in stressing the importance of shop floor management. The essential features of the learning paradigm, however, are shared by enough late-industrializing countries that the world economy can expect the arrival of more like Japan. Moreover, most European countries have spent much of their industrial lives as learners, trying to catch up with either England or the United States. They, too, share many of the institutions of late industrialization, because these institutions are first and foremost a function of catching up. Therefore, if the United Kingdom and the United States have found it difficult to adopt some of these characteristics of their erstwhile followers, it is not because the institutions of these followers are especially exotic, as they believe them to be. Rather, it is because their own institutions are the exception to the general rule.
There appears to exist, therefore, a discontinuity along the continuum connecting innovating and learning, and it is unidirectional. It stops innovators from becoming learners rather than the reverse. Successful learners appear to slide easily into the role of innovator, propelled forward by large investments in R&D and habituated to scanning the world for new technology and mastering it in-house. Innovators, however, appear to find it difficult to cultivate the role of learners, because of neglect of the shopfloor and of other innovators as sources of new ideas, as well as hostility toward the state.

In the following, references to “late-industrializing countries” are restricted to Korea and the other high performers, Japan and Taiwan. References to innovators are restricted to the leading firms against which the high-performing learners have had to compete. The contest has occurred so far in mature industries or in the mature segments of high-tech industries that the innovators established. The innovators’ country tends to be the United States because the mass-production industries that American firms created to compete against Britain at the turn of the century have been more susceptible to competition from late-industrializing learners than the engineering-intensive industries that German firms pioneered.

The deep ideological commitment of the United States to the market mechanism is widely recognized. In a 1965 book that comes close to predicting the U.S. economy’s subsequent decline, Shonfield observed (p.322) “The hostility to public initiative has deep roots in American traditional mythology” (pp. 298–9). What is less recognized is just how deep the ideological commitment of late-industrializing countries like Japan and Korea also is to the free market. The Korean president who masterminded industrialization under state initiative in the 1960s and 1970s apologizes in his autobiography for introducing planning and for intervening to control the necessarily “mammoth” big businesses of industrial growth (C. H. Park, 1963). Moreover, a commitment to market ideology in Korea was reinforced by the continuous monitoring of the Korean economy by the Bretton Woods institutions. It was stiffened further with neoclassicism by Korean graduate students returning from economics departments in American universities.
What distinguishes the United States from Korea is not economic ideology. Rather, the difference lies in how the two states define free market in practice. Because the productive forces in Korea have never been developed according to free market principles, Korea's workable definition of the free market is loose, satisfied by the existence of private property and intense rivalry among the big business groups. The divergence between theory and practice has been disguised by two rites of liberalization (in the early 1960s and then in the early 1980s), which left, in practice if not in theory, the fundamental relations between business and government and the institutions of economic growth unchanged. The United States, on the other hand, adheres to a much more orthodox definition of the market, despite its having been one of the most protectionist countries in the past. Ignoring its own history, the United States credits the free market with having developed the productive forces. The limits to the influence of this ideology in the United States are few. Nevertheless, late industrialization suggests that four aspects of the market mechanism have become dysfunctional and are in need of rethinking.

The first relates to allowing private rates of return rather than social rates of return to determine investment behavior. Proponents of the market view place unconditional faith in the capital market profit rate in making decisions about how much should be invested in which projects. They believe that because this rate is determined by market forces it is inviolate. Yet there is nothing sacred about it. It reflects the sociopsychic view of financiers about what rate of return they require in order to accept risk. Late-industrializing countries tend to operate with social rates of return that are much lower than the capital market profit rates that are in effect in innovating countries. Consequently, late-industrializing countries are prone to invest more, run a trade surplus, and thereby outcompete innovating countries in an ever-widening range of industries, many of which are interrelated and benefit (suffer) from each other's growth (decline). (p.323) In a global economy where learners abide by social discount rates, innovative economies would be ousted from one industry after another if they left their investment decisions wholly to capital markets.
The second area in need of rethinking relates to two intersecting ideals of classical liberalism—that the state acts in the best interests of the entire nation and not those of any one group, and that the pursuit by firms other than monopolies of their private interests redounds to the benefit of society at large. *These ideals have been turned inside out in late industrialization.* Even in a democracy like Japan (and certainly in what was once a dictatorship like Korea), the state has acted unabashedly in favor of business. At the same time, the state has acted on the premise that the interests of business, even non-monopolistic business, do not necessarily overlap with those of society at large. Hence, the support of business by the state on the one hand, and the discipline of business by the state on the other. Nevertheless, the United States persists with the two liberal market ideals that together are self-defeating: Business cannot be singled out for support, yet the economy must coast on the accomplishments of business.

The third aspect of the market mechanism that is in need of rethinking relates to productivity. The growth models of the market paradigm equate higher productivity with technological change, and then take technological change as exogenously determined. As suggested in earlier chapters, these models are irrelevant for learners because they make productivity improvements exclusively dependent on innovation, whereas learners by definition do not innovate. In practice, and in the theory of the economics of late industrialization developed in earlier chapters, the growth rate of output increases as the growth rate of productivity increases, and in closed-loop fashion, depending on institutional constraints, the growth rate of productivity increases as the growth rate of output increases—through investments that embody foreign designs, economies of scale, and learning-by-doing. While the closed-loop growth-productivity dynamic describes economic behavior in late-industrializing countries especially well, its applicability also extends to innovators. The dynamic has the virtue of drawing attention to the dependence of productivity improvements on institutions, firm size, managerial hierarchies, learning-by-doing, and so on, not just myopically on R&D, or on high wage levels that are insufficient in themselves to motivate high productivity among the workforce.
The fourth aspect of the market paradigm that is especially in need of rethinking relates to the law of comparative advantage, or the idea that countries should specialize in a limited number of industries, the choice depending on resource endowment. The law rationalizes (p.324) the tendency of many American firms to withdraw from competition in “mature” industries (say, consumer electronics or steel, each of which requires significant amounts of production labor), once these markets are challenged by countries industrializing late.

Withdrawal, however, may be defeatist rather than discrete. The experience of late-industrializing countries suggests a wide latitude for improvement in such industries, in terms of productivity, quality, and service. Cumulative incremental improvements may prove decisive in winning over competitors in the areas of delivery, price, and product performance.

The potential of the mature industries is also suggested by the investments of learners in R&D. In 1983–1984, for example, the standard deviation across industries from the national mean of industrial R&D as a percent of sales was almost identical in the United States, Japan, and Korea (standardized for absolute mean differences). But the inter-industry pattern of deviation from the national mean differed. In Japan and Korea, R&D in most mature industries (food, textiles, chemicals, and nonferrous metals) fell below the all-industry average but by less than it did in the United States, and R&D in most machinery branches exceeded the all-industry average but by more than it did in the United States (World Bank, 1987). This gives some indication that in comparative terms, R&D in mature industries in the United States is lackluster.

The rate of innovation worldwide appears to be accelerating, making growing segments of high-tech service and manufacturing industries “mature” overnight. Countries unwilling or unable to compete in mature industries may discover specialization in high-tech too limiting, particularly since the social returns to investments in high-tech are higher when the new technology is applied in mature sectors.

Labor Relations
Of all the characteristics of late industrialization, labor relations show the least consistency across countries. Repression of labor dissidents and hostility toward trade
unions are quite general among late-industrializing countries, but contentiousness and adversarialism between management and labor differ in degree and kind.

The Korean government has a policy with respect to every conceivable aspect of economic development except labor relations. Responsibility for labor relations within the government bureaucracy has largely been left to the Korea Central Intelligence Agency or to the police. Economists who have worked for the government, particularly for the dictatorship that came to power in 1980, have limited their labor policy to calls for wage restraint.

(p.325) Korea's big diversified business groups have also treated the function of labor relations differently from other functions such as production, marketing, finance, and so on. These other functions have largely been arrogated to salaried managers, whereas that of labor relations has been retained under the personal control of the owner/chief executive. The personnel function in general, and the labor relations function in particular, are almost nonexistent as a staff responsibility, whether at the group or subsidiary level. Whatever professionalism creeps into the exercise of this function in Korea comes indirectly through the production function, in the form of quality control circles. Otherwise, labor relations are left to the charisma and paternalism of group chairmen to energize or smooth.

Paternalism in Korea since the military coup in 1961 has witnessed almost three decades of relatively peaceful labor relations. The causality between paternalism and peace is unclear because both operated in conjunction with state repression of labor, on the one hand, and rapid increases in real wages, on the other. Moreover, labor peace in the 1970s and 1980s in Korea was in keeping with international practice. The 1970s and 1980s were decades of relatively quiescent labor relations worldwide. In the United States, labor relations were quiescent despite the failure of real earnings to rise beginning in 1973 and despite the local upheavals associated with plant closings.

Nevertheless, the labor peace that has characterized both Korea and the United States may be misleading from the viewpoint of each country's capability to compete, assuming that labor peace is vital to sustaining competitiveness. In
Korea, labor peace has been interrupted by explosions of unrest, as workers have demanded not merely better working conditions but also greater democracy at the work-place (as well as at the national level). In the United States, labor peace has been accomplished in conjunction with a decline in the growth rate of productivity. Although the causes of this productivity decline extend beyond labor relations, there is undoubtedly some connection between the two.

The entry of the late-industrializing countries into the world economy has resulted in an intensification of competition across markets. Competition has increased as the flow of technology across international borders has increased and the once gargantuan gulf in technological capabilities among nations has narrowed. With the notable exception of Japan, late-industrializing countries, including Korea—and many of the early-industrializing countries as well—have a long way to go before their labor relations can be described as conducive to sustained economic development. Yet, as the technological gap narrows further, one may venture to guess that competitiveness will increasingly depend on the achievement of such labor relations and of industrial peace. (p.326)

Notes:
(1) See, for example, Brooks (1985, p. 334).