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Industrial and Financial Policy in China and Vietnam:

A New Model or a Replay of the East Asian Experience?

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From the beginning of their economic reforms, China and Vietnam have labored to become part of the East Asian economic success story. The Asian financial crisis that began in 1997 led some of the leadership of the two countries to have second thoughts, but the basic goal of achieving rapid economic growth with an economic system something like that of their neighbors did not really change. China and Vietnam, however, began at a very different starting point from that of their neighbors. Both countries for a period of three decades had followed an economic development model patterned on the Soviet-style system of a command economy run by a central plan. The effort to move toward an East Asian economic system, therefore, involved much more than a few changes in policy from import-substituting industrialization to export-led growth or from distorted prices to market-determined prices. To become more like the rest of East Asia, China and Vietnam had to fundamentally change the way their economies were organized from top to bottom. The Chinese and Vietnamese economic stories of the past one to two decades, therefore, involve two different, but closely related, strands. There was the transition away from a command to a market economy, but there also was the effort to learn from, and to some degree to pattern themselves after, their conception of what made their East Asian neighbors economic successes.

By the end of the 1990s, however, it was no longer clear whether what made other East Asian economies successful had much relevance to what would determine the success of China and Vietnam in the future. The international economic environment in which China and Vietnam operated at the turn of the century was very different from the environment that existed in the 1950s and 1960s, when Japan, Korea, and the other East Asian early developers conceived their industrial policies. The Uruguay Round and the rapid globalization of the economy had changed the rules of the game. What was possible in the middle of the twentieth century was no longer acceptable at the beginning of the twenty-first. In the 1950s through the 1970s, for example, the economic managers of Japan, the Republic of Korea, and Taiwan Province (China) could use tariffs and quotas widely to promote particular industries. The role of foreign direct investment (FDI) was severely circumscribed. Japan and the Republic of Korea were welcomed as members of the General Agreement on Tariffs and Trade (GATT) even though much of what they were doing violated the free trade principles of GATT.

In contrast, China's negotiations to join GATT and its successor, the World Trade Organization (WTO) dragged on through the 1990s, and China was still negotiating with the European Union in 2000. As China's trade agreement with the United States indicated, to become a member of the WTO, China would have to open to trade and foreign investment to a degree never dreamed of in the 1950s through the 1970s. Quantitative restrictions on trade, domestic content requirements, and other such instruments of industrial policy were to be eliminated quickly. Foreign investors were to receive “national treatment” in sectors that previously had been wholly closed to foreign ownership. Vietnam could not even get most favored nation or normal trading relations without agreeing to similar conditions. Vietnam initially refused to sign the agreement it had negotiated, but that could not be a long-term solution for either Vietnam or China. The two economies, as a number of studies have shown, had too much to gain from normal trading relations with the United States, in the case of Vietnam, and from membership in the WTO, in both cases.

The question facing Chinese and Vietnamese policymakers is to learn from the economic development experience of their East Asian neighbors. The earlier East Asian model is still very

appealing to the former planners who now preside over economic policy in the two countries. The Asian financial crisis of 1997–99 led many leaders in China and Vietnam to doubt the applicability of the Korean or Japanese model of industrial policy, but did not kill the idea. A decade of stagnation in Japan in the 1990s, a stagnation that is widely perceived to result from the industrial and financial approaches of the past, has also led some to rethink their views. Many hope, nevertheless, that an activist industrial-financial policy model can be reconciled somehow with the demands of the global trading system and the rules of the WTO. But that may not be realistic. Complete laissez-faire on the Hong Kong model probably is not realistic either. Clearly, China and Vietnam will have to develop their own approach to industrial and financial development over the coming decades, but just what is that approach likely to look like? What are the real choices facing the two countries?

It is not just the new external environment that is forcing China and Vietnam to come up with a new approach. The simpler parts of the transition to a market economy have been accomplished. Agriculture and commerce have been reorganized into small competitive units that are, for all practical purposes, private and that respond mainly to market forces. Many of the so-called township and village enterprises in China and some of the joint ventures with foreign firms in both China and Vietnam also behave in accordance with market rules. But the large and medium state-owned enterprises together with the state-owned banks remain in a twilight zone between a command and a market system. In both China and Vietnam, this failure to complete the reform appears to have contributed to the slowdown in economic growth in 1998 and 1999. Just continuing with the policies of the past decade, therefore, is likely to exact a higher and higher economic cost. A new approach is needed.

DEVELOPMENT STRATEGY AND INDUSTRIAL POLICY CHOICES

When the transition to a market-based system began, several components of the East Asian approach to economic development were not controversial within the leadership of China and Vietnam, and these components were put in place at the beginning of the reform period in both countries. Foremost among these elements was an outward orientation with a particularly strong emphasis on the growth of exports. Exports in the Chinese case, as in the cases of the four East Asian tigers (Hong Kong, Korea, Singapore, and Taiwan Province) plus Japan, meant the export of manufactures rather than of minerals and agricultural products. In the Vietnamese case, the goal was to expand manufactured exports, but the immediate reality was that export expansion depended more on the growth of agricultural exports and petroleum. Over the longer run, however, Vietnam will have to rely increasingly on manufactured exports for much the same reason as China will. Both countries have 0.1 hectare of cultivated land per capita, and countries with limited land endowments of this sort usually become net importers of food and other agricultural products, not net exporters.

Nations with huge populations relative to their total land area generally become net importers of minerals as well. During the first years of rapid industrial growth, natural resource-based products may make up a substantial share of exports, but as per capita incomes rise, the domestic demand for these products soon outstrips supply. In China, primary products of all kinds (agriculture plus minerals) still constituted 50 percent of all exports in 1980, but this percentage fell rapidly to 26 percent in 1990 and 11 percent in 1998. In 1995, for the first time, China became a net importer of primary products. In Vietnam, primary products made up more than 90 percent of all exports as late as 1992, but manufactured exports rose from 9 percent of total exports in 1992 to 29 percent in 1996.

The turn outward in China and Vietnam involved more than just a rejection of the Soviet-style autarchic policies of the past. The emphasis on the export of manufactures meant that the whole industrial system had to be reoriented. An inward-looking system could produce low-quality goods for a captive market, but an outward-oriented industry had to compete in both quality and cost with the most able manufacturers around the world. Marketing skills are almost unknown in an autarchic system with central planning and are not very important in the export of minerals, but they are an essential part of any manufactured export strategy. An inward-focused system also had to produce its own machinery and

steel, because development required producer goods and the system did not generate enough foreign exchange to pay for the import of these items. An outward-oriented industry could export consumer manufactures and import many of the producer goods required, at least in the early stages of rapid growth.

Chinese and Vietnamese enterprise managers did not suddenly acquire the marketing and quality control skills needed to compete in international markets. Success in expanding manufactured exports was achieved by relying on people outside of China and Vietnam who already had the necessary skills. In China's case, turning mainly to the skilled trading companies of Hong Kong solved the marketing problem. The share of Chinese exports that went first to Hong Kong and then were re-exported rose steadily throughout the 1980s, and most of these re-exports were manufactures (for a detailed discussion of the role of Hong Kong, see Sun 1991). Foreign direct investment also played a central role both in marketing and in the restructuring of Chinese and Vietnamese industry to produce quality products for international markets. Most of this foreign direct investment came from ethnic Chinese in Hong Kong, Taiwan, and Southeast Asia. Not only was FDI from the United States, Europe, and even Japan small relative to that of the Chinese, but also much of that FDI went to offshore petroleum development or to large import-substituting efforts such as automobiles.

It is interesting to speculate whether China and Vietnam could have sustained a manufactured export drive if overseas Chinese had not been willing to play such an active role. Conceivably, China and Vietnam could have relied directly on help from buyers in the United States and Europe or on the big trading companies of Japan. In effect, that was how Korea and Taiwan learned what foreign markets required, doing so for the most part without much foreign direct investment. If FDI from the industrial countries had been necessary for rapid export development, China and Vietnam would have had to move more quickly to create an environment satisfactory to industrial-country investors. That would have required making far more progress toward establishing an economic system based on the rule of law than what in fact occurred.

The overseas Chinese community, in contrast, had long experience using family and more extended personal relationships to provide a secure environment for their investments and had little trouble transferring those skills to the Chinese mainland. American and European investors relied instead on contracts and a strong legal system to stand behind those contracts. If China had been forced to develop its legal system more rapidly, it would have had considerable difficulty doing so. A Confucian tradition followed by the outright abolition of China's legal system during the Cultural Revolution (1966–76) left China at the beginning of the reform era with little foundation on which to build. China could and did pass volumes full of new laws after the reform period began in 1978, but a Communist Party and government used to making decisions only partially constrained by law did not surrender that discretionary authority easily. Much the same could be said about Vietnam. China's and Vietnam's turn outward forced the two nations to make fundamental changes in the way they approached industrial development. In one respect, however—the creation of a system based on the rule of law—these two countries did not have to make as much progress as many western analysts frequently argued was necessary.

The decision to turn outward was not an inevitable result of the decision to move toward a market economy, particularly in the case of China. China, after all, has a huge domestic market, and many analysts have argued that China will have to rely mainly on that market if it is to grow rapidly. China, like all very large countries, which typically have low foreign trade ratios, could not expect export growth to pull the whole economy along indefinitely. Exports between 1978 and 1998 did grow at nearly 16 percent a year in nominal U.S. dollars and 25 percent a year in current Chinese renminbi, to some degree pulling the rest of the economy along with them (China, State Statistical Bureau 1998: 620). But by 1999, total exports had reached US\$194.9 billion and could not be expected to continue rising at the rates of the past. China would have to rely more on domestic demand for its products. Even at a 10 percent annual rate of growth, Chinese exports would total more than US\$700 billion in less than 15 years, and there are serious doubts that the rest of the world could absorb Chinese exports of this magnitude in such a short time span.

Could Chinese gross domestic product (GDP) continue to grow at 8 or 9 percent a year if exports did not make a major contribution to that growth rate? The years 1998 and 1999 provided a partial answer

to this question. Exports grew only 0.5 percent in 1998, then fell during the first part of 1999, in large part because of the Asian financial crisis, before ending up with a 6.1 percent rate of growth for the year as a whole (China, National Bureau of Statistics 1999b: 19; 2000:21). Private consumption and public and private enterprise investment also grew slowly, leaving government expenditure on domestic infrastructure with the task of maintaining a high rate of growth in aggregate demand and hence in GDP. China, as a result, struggled to keep GDP growth above 7 percent, and many feel that the official rate of almost 8 percent in 1998 was inflated by false reporting from the provinces. GDP growth in 1999 was reported to be 7 percent. For reasons that are poorly understood, but that probably have something to do with the productivity-enhancing influence of foreign competition, growth based mainly on domestic demand may not be able to sustain the high GDP growth rates enjoyed while exports were surging. Clearly, China needs to keep exports growing as rapidly as possible, but it also needs to generate a more rapid increase based on domestic demand.

Vietnam is still a very small exporter, and a high growth rate of exports from Vietnam could be sustained for a long time without facing markets unable to absorb what Vietnam could produce. The problem for Vietnam is to initiate the boom in manufactured exports. The lack of export growth in Vietnam in 1998 and 1999 was due to the Asian financial crisis, together with Vietnamese policies that discouraged foreign investors, the main exporters of manufactures. That slowdown was not due to the long-term saturation of Vietnam's export markets.

Industrial Organization and Industrial Policy

Given the importance of exports and foreign investment to the economic development of China and Vietnam, it becomes all the more important for those two economies to abide by the rules of the international economic system, as embodied in organizations such as the WTO. Since the WTO rules explicitly disallow many critical aspects of government interventions to restrict imports and control foreign investment, it would seem to follow almost automatically that China and Vietnam will have to forgo any attempt to direct the development of industry and the financial sector along lines pioneered by the government planners of Japan and Korea from the 1950s through the 1970s.

But rules imposed by an external body, even an international body such as the WTO that is led by the economically most powerful nations in the world, are not as compelling as a nation's own internal logic. Nowhere is that more true than in China and Vietnam, with their long history of resistance to foreign domination. If China's and Vietnam's economic decisionmakers are persuaded that an activist Korean- or Japanese-style industrial policy would not work even if it were allowed, they are likely to focus systematically on making a less interventionist, more market-dominated system work. If they are not so convinced, they are more likely to circumvent the strictures of the global economic rules, just as Japan and Korea did in the 1970s and 1980s.

It is not just a country's orientation toward the rules of the international marketplace that shapes how its industrial sector should be organized and led. In the cases of both China and Vietnam, the inherited structure of industry and the financial sector itself has considerable bearing on how industry should be organized and the role that the government should play in the direction and control of industry and finance. China, in particular, experienced nearly three decades of industrial development before the reform era began—nearly nine decades, if one goes back to the first modern factories established during the 1890s. Vietnam in 1986 or 1989 had a much smaller industrial sector than did China, but there was some industry, and that industry had been developed in the context of war and a Soviet-style economic system.

The nature of the issue that faces industrial policymakers in China irrespective of the rules of the WTO is illustrated by the data in table 7.1 and figure 7.1. To begin with, the industrial sector is large. Industrial value added in 1999 was a sizable RMB3.5 trillion (US\$427 billion). Any industrial policymaker inclined to rely on government directions over market forces had to direct an industrial sector larger than that of France and roughly three times the size of industry in the Republic of Korea in the mid-1990s.

SEE TABLE 7.1 and FIGURE 7.1 (SEPARATE DOCUMENT)

Size of output was only the beginning of the problem. China in 1998 had nearly 8 million industrial enterprises. Of these, 6 million were individual proprietorships with at most a few workers. Only 506,000 enterprises (in 1996) were classified as being “independent accounting units,” a term that is roughly equivalent to an incorporated enterprise in the industrial world.¹ It is easy to dismiss the 7.48 million industrial units that were not independent accounting units as being small and therefore unimportant, but these firms produced 37 percent of all industrial output (measured in gross value terms) in 1996. It made no more sense to attempt to direct this portion of industrial activity through nonmarket channels than to attempt to control farm households in that way. No policymaker in Beijing or even in the provincial capitals could possibly have enough timely information to give meaningful guidance to the daily activities of small industrial firms.

The 506,000 enterprises that were independent accounting units also presented a problem for prospective industrial policy activists. A total of 43,000 of these firms, producing 19 percent of the gross output of independent accounting units and a much larger share of exports, were owned by foreign firms or firms based in Hong Kong or Taiwan. Another 352,000 were the more developed of the township and village enterprises (TVEs) or the urban, collectively owned firms. These collective independent accounting units taken together accounted for another 30 percent of the gross value of output of all industrial independent accounting units.

There is now a large literature on the nature of the ownership of TVEs, but one point on which almost everyone agrees is that these firms are not owned or controlled by the central government or by provincial governments. Local governments, townships, and occasionally counties have a major role in TVEs, but these governments do not behave primarily as taxers and regulators with respect to the TVEs. In the regions where TVEs have enjoyed the greatest success, governments actively promote their local enterprises. It is not much of an exaggeration to say that many local governments behave like small business conglomerates. Property rights are reasonably well defined in the sense that the locality clearly controls the activities of the enterprise, receives the benefits, and does not share these benefits with higher-level government units, except that the TVEs do pay taxes. TVEs face hard budget constraints, buy their inputs on the market, sell their output on the market, and enter into contractual relationships with other firms, including both state-owned and foreign-owned firms.

Thus 114,000 state-owned enterprises in 1996 only produced 50 percent of the output of independent accounting units and 29 percent of total gross industrial output. This contrasts with the state enterprise share of 78 percent in 1978 and 65 percent in 1985, although the 1978 figure is not precisely comparable to that for either 1985 or 1996.² In these calculations, the state enterprise share has been reduced to less than a third of industrial output, and there are still more than 100,000 firms. This number is still far too large to be efficiently directed by the central government, especially given the weak accounting systems of many of these enterprises.

In China, 7,000 industrial firms are classified as large-scale. The majority of these enterprises are state-owned, but the figure includes some foreign joint ventures and even a few township enterprises. Together, these large firms produce 25 percent of all industrial output, less if only large state-owned firms are included in the total. From 1996 on, there was much talk in Beijing of the government only playing an active role in the management of 1,000 to 2,000 state-owned enterprises. After the Fifteenth Party Congress in 1997 and the National People’s Congress in early 1998, the figure being bandied about was only 500 state-owned enterprises. In addition to strategic military industries, this figure presumably included many, but not all, of the largest industrial firms in China, but it is unlikely that these firms accounted for more than 10 to 15 percent of industrial output.³

Whatever the intentions of China’s industrial policymakers—whether they want to comply with the rules of the global economic system or not—they are not in a position to duplicate the kind of control over industrial development that President Park Chung Hee exercised in Korea in the 1970s. In Korea in the early 1970s, the 46 largest industrial conglomerates (*chaebol*) accounted for 37 percent of value added in manufacturing and 19 percent of all nonagricultural GDP. The top five *chaebol* alone accounted for 15

percent of manufacturing value added. State-owned enterprises in Korea at that time accounted for another 13 percent of nonagricultural GDP (Jones and Sakong 1980: 148, 260–66). Therefore, more than half of all manufacturing was in the hands of fewer than 200 firms. President Park and his ministers could meet regularly with the heads of these firms and could personally keep track of their progress in implementing national industrial policy.

The problem facing industrial policymakers in China is one facing policymakers in any number of areas—the huge size of the Chinese nation. The number of enterprises needed to account for half of Chinese industrial output is in the hundreds of thousands. If China were to try to reduce this number to a few hundred that accounted for a third or more of manufacturing value added, these consolidated enterprises would have to be 10 to 20 times the size of the Korean *chaebol* in the 1970s.

It is difficult to see how China could possibly carry out an activist industrial policy along the lines of the Korean heavy and chemical industry drive of the 1970s. In that Korean drive, the president's office designed how the entire heavy industry sector was to be developed, down to and including the scale of individual factories. The president's office then negotiated with the leaders of the *chaebol* to determine who would carry out the government's plans. In this manner, the Korean president, working with a committee of a few dozen specialists, was able to provide hands-on direction to the development of what soon accounted for more than half of all Korean manufacturing output and a comparable share of exports.⁴

If China's industrial policymakers were to attempt a similar effort, they would have to deal with several thousand firms, not several dozen. A small committee located in the office of the Chinese prime minister would be overwhelmed. Instead, China would have to create a large bureaucracy and give that bureaucracy the power to order firms to carry out its plans.

The industrial policy of Park Chung Hee's Korea was an extreme case of centralized decisionmaking. The Ministry of International Trade and Industry (MITI) in Japan played a similar role but relied somewhat less on centralized direction and more on coordination of and cooperation with a wide variety of private industry associations. This system is widely seen today as being a major contributor to the economic stagnation experienced by Japan throughout the 1990s, but a nation such as China that is at a much earlier stage of growth conceivably could make the system work as it did in Japan in the 1960s and 1970s. Thus it is possible that the MITI version of a government-led industrial effort would have worked better in China than the Korean version did or better than it worked in Japan itself in the 1990s. It is more probable, however, that the industrial policy bureaucracy in China would revert to China's own past and would operate in many ways like the old State Planning Commission. Certainly that would be the likely outcome if the implementers of Chinese industrial policy were mostly made up of officials from the old planning bureaucracy.

Vietnam's industrial policymakers did not and do not face China's problem of overwhelming numbers of industrial firms. The total number of state-owned firms fell from 3,020 in 1989 to 1,958 in 1995, largely because the Vietnamese closed many inefficient state firms managed by local governments. The number of firms directly controlled by the central government did not change much during the reform period, totaling 549 firms in 1995 (World Bank 1997: table 8.1; Vietnam, General Statistical Office 1994: 79). Even these figures somewhat overstate the total, because joint ventures between foreign and Vietnamese firms are mostly included in the state sector. The number of private enterprises came to just over 1,000; there were just over 5,000 industrial cooperatives (down from 21,900 in 1989) and an additional 368,000 household industrial establishments (in 1992). The state sector's share of gross value of industrial output, however, was much higher in Vietnam than in China. The state share of gross industrial output in 1992 was 71 percent, and this share rose during the reform period of the 1990s. Most of the rest of industrial output was accounted for by the household sector (24 percent in 1992).

The Vietnamese central government, therefore, had direct control of most industrial output even after a decade of reform. By controlling a few hundred enterprises, the government policymakers in Hanoi could, in principle, direct and supervise most of the industrial development that mattered. This small number of modern industrial enterprises, when compared with the situation in China, was due in part to the fact that Vietnam's population was only 6 percent of that of China and in part to Vietnam's

much more limited industrial development as of the mid-1990s. Does it follow that Vietnam was in a position to carry out a 1970s Korean- or Japanese-style industrial policy?

Neoclassical economic purists assert that an efficient activist industrial policy is a contradiction in terms, and so their answer to the question posed is an unequivocal “no.” The recent experience of Japan in the 1990s and Korea in the late 1990s also makes clear that an activist industrial policy can go awry. Long before the Asian financial crisis, economic decisionmakers in both Korea and Taiwan Province were expending considerable time and energy attempting to dismantle much of what they perceived to be the excessive regulatory overhang of the earlier activist era. But Asians, among others, also look at the experience of Korea and Japan in the 1960s and 1970s and conclude that those countries must have been doing something right. Economic historians have long pointed out that the state typically plays a much larger role in economic development in follower countries than in leading industrial countries. One of the “advantages of backwardness” is that a follower can learn from the leaders, and government officials are sometimes well placed to do the necessary learning (this view is stated most clearly in the works of Alexander Gerschenkron; see Gerschenkron 1962). Could Vietnamese government officials learn from the experience of Korea and Japan, adopting what worked in their industrial policies and revising or avoiding Korea’s and Japan’s more obvious mistakes? For that matter, could China do the same, provided that it confined government’s role to a scope that was manageable?

There are three reasons, arising out of the recent past and current situation, why Vietnam and China would have great difficulty making a Korean- or Japanese-style industrial policy work efficiently even if the rules of the international economic system allowed such actions. The first is that the economic bureaucracy in both countries was built and trained to carry out a Soviet-style system of central planning, not the kind of strategic planning that existed in Korea and Japan. The latter system relied heavily on “guidance,” market forces, and the private sector when it came to planning implementation. Soviet-style central planners rely on orders backed up by direct control of most inputs to enforce the plan. Vietnam and China could, of course, disband their current economic bureaucracy and, to a degree, already have done so. In 1998 China began a major reduction in the size of government. The two countries could then rebuild a new economic bureaucracy on the Korean or Japanese model. Such a restructuring is possible, but not very likely. Far more likely is that the decision to create a Korean- or Japanese-style strategic planning system would become an excuse to retain as much of the old planning bureaucracy as possible. Some of these people could be retrained for the new approach, but many would stick as well as they could to the old ways they know best.

The second and third reasons why it would be difficult to operate an efficient Korean- or Japanese-style industrial policy have to do with politics and with corruption. Korea and Japan in the 1960s and 1970s certainly had experience with corruption and with economic decisions that were made more on political than economic or technical criteria. But politics and corruption were not an important part of industrial policy decisions in the 1960s and 1970s. President Park Chung Hee in Korea insulated his Blue House heavy and chemical industry team from politics so that decisions could be made on technical criteria alone. When individual *chaebol* received a major task from the government, the main reason was that President Park thought they could do the job. Korean state enterprises were also expected to perform well in economic and financial terms, and that is the main reason why the giant steel firm POSCO did as well as it did. When politics did play a major role in economic and industrial decisions in Korea, as was the case in the 1990s, the result was the Hanbo steel bankruptcy and the debt crisis of 1997–98.

Japan’s MITI, in its heyday, was also insulated from politics and corruption.⁵ Politicians heavily influenced public works spending, but bureaucrats who were experts in the relevant industries made industrial policy; trade and financial policies were used to back up those technical decisions. The technical criteria used were not always the ideal or correct ones for achieving efficient industrial development, but the industrial policymakers were trying to do what was best for the country. They were not generating rents for themselves or for their political masters.

Politics and corruption were a frequent element in how economic decisions were made and implemented in both Vietnam and China in the 1990s. The international services that attempt to measure

the degree of corruption affecting business decisions generally put China and Vietnam at the lower end of lists where the top is occupied by nations such as Singapore that are largely free of corruption in business.⁶

The customs services in both countries regularly require payoffs to get imports into the country. Politically based decisions that do not involve corruption can be just as damaging. A petrochemical plant placed in Central Vietnam far from sources of supply and far from markets can become an enormous drain on the country's limited investment resources. The Three Gorges Dam project in China was driven as much by political as economic criteria. If the costs of building that dam escalate well above initial estimates, the project could contribute to a slowdown in growth.

Political criteria are not suddenly going to be eliminated from government decisions affecting the economy in either China or Vietnam. Politics play a major role in most decisions by most governments around the world. The government of Korea's Park Chung Hee and Japan's MITI of the 1960s and 1970s are the outliers, as is the government of Singapore. Public works projects all over the world are built to get votes or other forms of political support as well as to provide needed infrastructure. In the United States, these are known as "pork barrel projects." China and Vietnam have authoritarian political systems, but the politicians who run those systems must build political support from various constituencies in order to make decisions. President Park Chung Hee relied mainly on a modern combat army plus rural farmers for his political support, and he had no need to buy the support of other politicians or industrialists. They were completely dependent on him.

There are ways of reducing the role of politics in economic decisionmaking. The most obvious way is to have the private sector make most of the decisions without government interference, but in China and Vietnam that is not likely to solve the problem of how to build the large amount of infrastructure needed. For both political and economic reasons, the government is likely to play the dominant role in infrastructure development for at least the next decade or two. Most infrastructure investments elsewhere in Asia, including in Japan in the first half of the twentieth century, were carried out by the state.⁷ Efforts to minimize the political impact on efficiency in these projects will depend on measures such as the greater use of tendering procedures (open competitive bidding for projects) and greater transparency (for example, allowing the press to cover mistakes as well as successes).

A wide variety of measures can be used to keep corruption and rent seeking under control, but the most important measures involve reducing the opportunities for corruption and rent seeking. With fewer opportunities, it then becomes possible to police a more limited number of targets. Most opportunities for rent seeking come from government efforts to regulate the economy through licensing and similar procedures. When a business must obtain permission from an official, and that official has discretionary authority to give or withhold permission, an opportunity is created for an informal and usually illegal payment. Discretionary authority to negotiate taxes or to determine the classification of imports subject to duties also creates such opportunities. This list can be readily extended, but the main point is a simple one. To control rent-seeking behavior, a government needs to reduce its regulatory interventions to the minimum necessary to achieve important national goals. Where regulatory and tax interventions are necessary, discretionary authority on the part of government officials must be kept to a minimum.

Within East Asia, Singapore is as good a model as any of how to control corruption. Hong Kong has been equally effective. Both allow the market to govern most decisions and have law-based rules backed up by reasonably independent courts to oversee the regulation that remains. They also have vigorous anticorruption commissions, whose success is due in part to their ability to concentrate their efforts on the few remaining areas where opportunities for corruption continue to exist.

An activist industrial policy is the antithesis of an effort to reduce rent-seeking behavior. The tools used to enforce government industrial policy initiatives involve and even require various kinds of licenses, government control over critical imports, and government-directed loans at subsidized rates. Generally the officials who administer these interventions must be given a high degree of discretionary authority. Sometimes industrial policy subsidies can be made available across-the-board to whoever applies, but that is not the norm.

The implication of this discussion of politics and rent seeking for the industrial policies of China

and Vietnam is straightforward. Barring a miraculous return to the revolutionary spirit of the 1950s in China or the 1960s and 1970s in Vietnam (and the very tight surveillance system), government decisionmaking in the two countries is going to be heavily influenced by politics. Rent-seeking behavior will also be widespread where opportunity allows. If the two nations attempt to introduce a MITI-style industrial policy, the results will frequently lead to investment and other economic decisions that are far below the optimum. Economic growth, as a result, would probably slow down, and rent seeking would undermine the very credibility of the government.

Something like this has already been occurring, not because China and Vietnam have introduced a version of the Korean and Japanese systems, but because many of the interventionist policies of the old command system have not yet been eradicated. The danger is that the appeal of the Korean and Japanese approaches will lead to decisions that effectively leave industrial development policy stuck in this twilight zone between a planning and a market system. The alternative is for China and Vietnam to eliminate most of the procedures that interfere with the operation of the market.

Does it follow that China and Vietnam must leave all industrial development decisions to market forces and confine government's role to the provision of roads, electric power, and a few other infrastructure investments that have traditionally been provided by government?⁸ Certainly, the leaders of both China and Vietnam do not see it this way. Their approach remains highly interventionist, but they have not articulated where this approach is heading. Enthusiasm for the Korean and Japanese industrial policy models has waned a bit, and critics of these models have been emboldened by the perceived connection between these approaches and the Asian financial crisis of 1997–99.

Vietnam's industrial policymakers remain stuck to a significant degree in strategies based on import substitution and continued state dominance of all but the smallest firms and those controlled or managed by foreign investors. Many foreign investors began to withdraw from Vietnam in 1998 and 1999, in part because of crises at home, but also because of the difficulty of getting through the red tape of the government bureaucracy. As long as Vietnamese growth rates remain high—averaging roughly 9 percent a year from 1992 through 1997 before falling to between 4 and 5 percent a year in 1998 and 1999—a fundamental change in this approach to industrial development is not likely. If growth rates fall markedly, however, or even if they stay at the level achieved in 1998 and 1999, the debate over the future of industrial policy will become more active.

China is much further along in the debate over the appropriate role for government in industry than is Vietnam. The decision to push ahead vigorously with negotiations to enter the WTO is the best single piece of evidence that many Chinese economic leaders recognize the need to move decisively to implement the rules of the global economic system. The decision by the central government to directly control only 500 state-owned enterprises, or even 1,000, similarly can be seen as the abandonment of a broad-based direct role for the state in industrial development along Korean lines of the 1970s. The role of the centrally directed industrial intervention that remains in China has two more limited goals. One goal is to pick a single industrial sector, or at most several, and to use government support to bring that sector up to an internationally competitive position. The other goal is to provide time for the loss-making state enterprises either to return to profitability or to go out of business in a way that is not politically disruptive. The issue of loss-making state enterprises will be taken up in the next section of this chapter.

The Chinese government's efforts to develop one or several key industries can be seen as an infant-industry strategy, although some of these firms have been in existence for decades. Or the effort can be seen as a narrower version of MITI-style strategic planning. The automotive sector received most of the attention in the 1990s. Producing more than 1 million vehicles of all kinds a year, China had a large enough market to achieve economies of scale, and that market is growing rapidly. Many of the hundreds of Chinese firms in the industry are small and backward, and even the few large firms are struggling with high costs, usually in joint ventures with German, Japanese, or American companies. It took more than a decade for the automobile firms of Korea and Japan to become internationally competitive, and Malaysia's Proton is not yet internationally competitive after more than a decade since startup. China's automobile industry, therefore, may require state support for some time to come. It is all the more remarkable, therefore, that China went ahead with the trade agreement with the United States even though

that agreement set a timetable for the relatively rapid opening of the Chinese automobile market. Formal trade treaties on paper and actual implementation on the ground, to be sure, are not the same thing, and Chinese trade negotiators do not always have an easy time getting local authorities to comply with what they have agreed to. Still, there is little doubt that the push to join WTO signifies that many of China's leaders recognize the need to develop China's strategic industries in a way that is consistent with the rules of an open trading system, as spelled out in the international agreements governing the global system.

There are compelling reasons why China will remain under great pressure to move toward a full market economy with greatly reduced government intervention in development of the industrial sector. The sector is too large and made up of too many thousands of firms to be efficiently controlled from Beijing. There are too much politics and rent seeking in Chinese economic decisionmaking for industrial development decisions to be made mainly on the basis of appropriate economic and technical criteria. And the rules of the world trading system—rules on which China depends to continue developing its exports—are clearly in conflict with mercantilist policies similar to those pursued elsewhere in East Asia in the past.

Do these compelling reasons mean that China will abandon its efforts to maintain an activist industrial policy patterned on Korea and Japan or on some other model? However compelling these arguments may be to an economist-observer outside of China, it will be a long time before such arguments are fully accepted within China, particularly at the local level, where many of the decisions concerning implementation of the global rules will be played out. Many of the people running China today have experience in the central planning bureaucracy. On top of that, China has had centuries of centralized bureaucratic rule. Attitudes and ways of doing things that are as deeply embedded as these do not disappear overnight. But the forces of tradition do not determine everything. When tradition and personal experience conflict with the requirements of the present, tradition and experience usually give way. This process takes time, first to understand the nature of the problem and then to implement the changes necessary to make the problem disappear.

Many of these same arguments apply to Vietnam. The difference is that Vietnam has not yet committed itself to an export strategy based on manufactures and continues to rely heavily on an import-substituting path to industrialization. Vietnam's industrial sector and the number of its industrial firms are also much smaller than they are in China, so a policy of control from Hanoi is not as obviously impossible as in the case of China. Vietnam's initial refusal to sign a trade agreement with the United States, an agreement that its own officials had negotiated, is clear evidence of the reluctance of many officials, even in the top leadership, to accept the kind of industrial policy that is likely to be the most appropriate for their country.

The Path toward the Reform of State-Owned Enterprises

Up to this point, the discussion has focused on the role of government industrial policy in shaping the development of industrial enterprises in China and Vietnam. What choices face the individuals deciding how the enterprises themselves should be organized?

Most of the issues here deal with how China and Vietnam should go about completing the reform of state-owned enterprises. There are, to be sure, issues in this area that do not involve the state-owned enterprise problem. There is the question, for example, of whether the TVEs are the wave of China's industrial future, and, if so, how they will have to change in order to remain competitive. This issue, like a number of others, is likely to be determined first by market forces and only second by rules set in Beijing. The Chinese TVEs are also the subject of chapter 8 in this volume.⁹ The state-owned enterprise problem, however, is not one that can be left to market forces for a solution. Put differently, market forces alone could "solve" the state-owned enterprise problem if the Chinese and Vietnamese governments allowed them to, but both governments are unwilling to allow an unfettered market to impose a solution, for political and social reasons, among others.

There are many dimensions to the problem of state-owned enterprises. For years both China and Vietnam saw the issue as one of giving these enterprises limited autonomy. Bonuses were geared to the

performance of the individual units, goods produced above government allocation quotas could be sold at higher prices on the market, and inputs could be bought on the market if they were not available through the state allocation system. As the state allocation system gradually disappeared, the government introduced what it called the “enterprise responsibility system,” patterned in a vague way on the household responsibility system that had proved so successful in agriculture. But the degree of autonomy allowed state enterprises was always much less than that enjoyed by rural households. In critical respects, state-owned enterprises were still subunits of the central or provincial government bureaucracies that supervised them.

Some economists reject the notion that a state-owned enterprise can ever operate efficiently, but there are a number of highly efficient state enterprises in Asia. POSCO, the giant Korean steel producer, has already been mentioned. Singapore has established a great many successful state-owned enterprises, and these enterprises had total sales of S\$9.2 billion and profits of S\$2.1 billion in 1990 (Swee 1992). Singapore airlines—one of the best airlines in the world—is state-owned. Much of Taiwan Province’s heavy industry in fields ranging from petrochemicals to steel was dominated initially by state firms, and many of these firms have yet to be privatized. These state firms were oriented mainly toward the domestic market and were not the source of Taiwan’s dynamic export performance, but neither were they a major drag on that performance.

Stringent conditions were needed to achieve success with these state firms elsewhere in Asia. All enjoyed a high degree of autonomy. Management’s performance was judged mainly or even solely on its ability to generate long-term profits for the company. The multiple objectives—so often imposed on state enterprises elsewhere in the world—were mostly absent. Autonomy and profit orientation were difficult to achieve. POSCO was run by an individual politically more powerful than most government ministers at the time. Singapore was able to isolate these enterprises completely from local politics.

What must China and Vietnam do to make their large state-owned firms successful, and is what is required feasible in the Chinese and Vietnamese contexts?¹⁰ There is no secret as to what needs to be done. State-owned enterprises must be made fully autonomous and responsive primarily to market forces. The steps required to achieve that aim have been discussed at length in China and to a lesser degree in Vietnam. The critical issues involve the following.

First, these enterprises must stand on their own feet financially and face a hard budget constraint. Money borrowed should be paid back at market interest rates, and the failure to do so should lead to bankruptcy. Taxes should be based on fixed rates and rules and not subject to negotiation between the firm and the tax collector. Inputs should be paid for at market prices. Output should be sold on competitive markets where market entry is as easy as scale and financing requirements allow. China and Vietnam have gone most of the way to making state enterprises buy and sell on competitive markets. It has proved to be much more difficult to harden the soft budget constraint. Bankruptcy laws were passed in China in the latter half of the 1980s, but they were not applied with any vigor until the late 1990s. The government, as part of its campaign to control inflation, did make it much more difficult for state firms to get credits from the banking system, but firms simply forced their suppliers to extend them credit. In the absence of a willingness to force these firms into bankruptcy, the accounts receivable on enterprise books continued to pile up. Vietnam did close down many local state enterprises as part of its efforts to control inflation in the early 1990s, but then the effort to impose a hard budget constraint stalled. Many Vietnamese state firms are profitable only because they operate behind high walls of protection from imports and equally high walls of protection from a domestic private sector that is unable to get the licenses required to operate in fields where the state sector is heavily involved.

Second, management of state enterprises must be chosen by people whose sole or primary concern is with the profitability of the enterprise. In both China and Vietnam, managers are picked instead by government and party officials who apply a wide variety of criteria, only one of which is profits. One solution to this problem would be to privatize state enterprises, and, in the end, that may be the solution chosen. Formally, however, both countries have rejected outright privatization. In contrast, China’s decision to remove the central government from responsibility for the fate of all but 500 of 2,000 state firms essentially allows extensive privatization in some form. The TVEs also enjoy most of the property

rights that are enjoyed by private firms, although the owner who exercises those rights is often a township or village. Vietnam has not decided to privatize all but its larger state firms.

Both China and Vietnam have experimented with a shareholding system, or corporatization as distinct from privatization. In Vietnam, as of 1998, only a dozen state firms were corporatized, while the number in China was in the many thousands. Shareholding could become the vehicle for creating boards of directors who would ensure that plant managers concentrated mainly on making profits rather than on pleasing their government and party superiors. The shareholders would not necessarily even have to be private individuals or organizations. Other state enterprises and institutions such as public pension funds might serve as profit-oriented members of company boards of directors. In Vietnam, boards with the power to hire and fire management are possible, in principle, and that is one reason why managers of Vietnam's state firms are so reluctant to corporatize. In China there is no such problem because the government has retained majority control and the power to hire and fire management. Shareholding, in its present form in China, is mainly a way of raising capital.

Third, if a fundamental restructuring of state enterprises is to succeed, the political cost of that restructuring must be kept at an acceptable level. One political cost is the loss of power and control by the government bureaucracy and the Communist Party. Conceivably both the bureaucracy and the party will decide that giving up control is too high a price, but both have surrendered considerable power in the past. The decollectivization of agriculture in China and Vietnam is the most dramatic example of a surrender of control. The government and party also gave up considerable power when they converted from an administrative system for the allocation of key inputs to a market system, and there are other examples. Thus there is no reason to believe that cutting the umbilical cord that attaches state enterprises to the government and the Communist Party will be resisted at all costs because of the fear of a loss of control.

Other kinds of social and political costs also are connected with state enterprise reform, however. The one that worries the Chinese leadership the most is that bankruptcy will lead to large-scale unemployment and social unrest. Millions of workers were laid off in 1997 through 1999, and there was some unrest. An unemployment insurance system did exist, but it was not yet nationwide in scope. The Vietnamese do not face a similar problem, in part because the government, once inflation was brought under control, ended the downsizing of state enterprises. In addition, state sector industrial employment in Vietnam involves only 700,000 workers as contrasted to the 42.8 million workers in state-owned industrial enterprises in China.

The political problems of state enterprise reform in China are compounded by the fact that these enterprises provide most of the housing, the pensions, and all of the health insurance to their employees. Overly generous pension liabilities are one reason why so many state enterprises are losing money. Health insurance was also more generous for state employees than for anyone else in China. Enterprise bankruptcy threatens these employees' health, their pensions, and their housing. Experiments designed to lead to national health and pension systems have been under way in China for many years. Subsidized housing is also being eliminated gradually, either through privatization or by charging commercial rents on state property. But the process in China has been painfully slow.

For all of the political problems surrounding China's efforts to substitute a national welfare and pension system for an enterprise-based system, those problems are small compared to the lavish national welfare systems found in Eastern Europe. In 1996, for example, social insurance and welfare funds for all state retirees in China, not just in industry, amounted to 2.2 percent of GDP.

Two other issues connected with industrial enterprise organization and ownership in China and Vietnam should be noted. First, both China and, to a lesser degree, Vietnam have been much more open to foreign direct investment than was ever the case in Japan, Korea, or even Taiwan Province. FDI started modestly in the early 1980s in China but averaged US\$40 billion in the late 1990s. FDI is an integral and important part of China's industrial development strategy.¹¹ FDI firms are the source of a large share of the rapid rise in exports, and these enterprises also play a central role in the reform of industrial organization, technology, and management in key sectors such as automobiles. Joint ventures with both state and private firms have set standards of quality that have spread rapidly throughout Chinese industry. The gradually improving Chinese legal system also owes much of its progress to the need to provide a

better legal framework for foreign investors.

Vietnam's support of FDI is more restrained than that of China, in part because Vietnam has not decided how it wants to deal with private enterprise more generally. For all of the problems of foreign investors in Vietnam—problems that led to declining FDI in 1998 and 1999—a case can be made that foreign investors are still treated better than private domestic firms. Vietnam's manufactured export sector, small as it is, is completely dependent on FDI.

Neither China nor Vietnam relies as heavily on FDI for development as Singapore and Hong Kong, nor will they even if they were to give unfettered national treatment in all sectors to foreign firms. There simply is not enough FDI in the world to do for a nation of 1.2 billion people what it has done for a nation of 2.8 million or a territory of 5.8 million. Hong Kong is part of China, and Hong Kong's economic system has had a large influence on the way business is handled in neighboring Guangdong Province and beyond.

Although China and Vietnam have not followed the Japanese or Korean approach to foreign direct investment, many in both China and Vietnam remain enamored of the large Japanese and Korean conglomerates (*chaebol* in Korea and *keiretsu* in Japan). Governments in both China and Vietnam, as a result, have set about creating large conglomerates of their own. Generally this involves bringing a number of enterprises together into one large unit. In some cases, government offices connected to these firms are also included in the new conglomerate. These larger units, it is believed, will be better able to compete internationally as well as domestically. Their brand names, it is hoped, might someday become as well known as Hitachi or Samsung.

There are serious problems with this approach to creating conglomerates. The government-directed approach, as it has been applied in Vietnam, often appears to be little more than a repackaging of existing arrangements. In Vietnam in the past, for example, the firms involved in the new, larger units worked closely together under the supervision of the relevant industrial bureau. The new arrangement simply formalizes these connections; it does not necessarily change behavior. Without a change in business behavior, it is hard to see what contribution these new, larger units will make to Vietnam's international competitiveness.

Initially, there was reason to believe that China's fascination with the Korean *chaebol* would also lead to government-directed reorganizations that would leave the government planning bureaucracy very much in tact and in control. But China's size, the decentralized nature of so many of its economic decisions, and the very diversity of enterprise forms of ownership, have led to mergers and acquisitions driven, more often than not, by the interests of particular firms or groups of firms. Almost all of the larger firms now appear to be part of one *jitian* (group) or another, but there are so many thousands of *jitian* that in no way do they resemble the Korean *chaebol* or the Japanese *keiretsu*; nor are they simply the Chinese planning bureaucracy in disguise. The mergers and acquisitions process in China, therefore, has begun to take on some of the characteristics of similar processes in market economies, although the government's role remains large.

There is nothing necessarily wrong with large conglomerates in either the Chinese or the Vietnamese context. The existing state enterprise structure was a product of the central planning system adopted from the Soviet Union and, in many instances, probably makes little sense under the current market-driven system. The question is whether government officials are the right people to decide to create a particular conglomerate or whether that decision should be left to market forces. But, if the process is left to market forces, are the state enterprises in a position to take the steps required in order to merge with other firms? A partial answer in the case of China is that the large state and nonstate firms are already well into the mergers and acquisitions process. If the process is to proceed smoothly and efficiently, however, the government will have to create the rules under which one firm can merge with or acquire another. As of the late 1990s, in both China and Vietnam, the governments' role is more that of a discretionary decisionmaker than of a creator of the rules of the game. If the government does become mainly a setter of the rules, however, and the enterprises, both state and private, are run by able profit-oriented managers, the resulting new conglomerates are likely to be more effective than ones directly engineered by government officials.

China's structure of industrial organization and ownership is still evolving. The same is true of Vietnam, although Vietnam has barely started along the restructuring path. Neither country is likely to end up as a carbon copy of any other single Asian industrial economy. In terms of foreign ownership, China and Vietnam will be halfway along a spectrum with Japan and Korea at one end and Singapore at the other. Both China and Vietnam are likely to rely more heavily on this state ownership of industrial firms than other countries in Asia, but not all that much more heavily than Korea or Singapore in an earlier period. The dominant form of industrial enterprises will behave like privately owned firms, whatever their nominal mode of ownership.

Two related questions have to do with the size of industrial firms in the two nations and the degree of concentration in the various industrial sectors. Given China's enormous size, it is probably inevitable that the degree of concentration in particular industrial sectors will be substantially less than in a much smaller country at a similar stage of development. China, with an income per capita of US\$2,000 in purchasing power parity terms, produced 124 million tons of steel in 1999, enough to allow China to have six 20-million-ton plants without taking exports into account. China had far more steel enterprises than this, but many of them were small. Korea's domestic market at the same stage of development could only support one plant of 2 million to 4 million tons.

Still, China's structure of industrial organization appears to be much less concentrated than China's size alone can explain. China is not a land of giant conglomerates on the model of Korea or of conglomerates supported by thousands of small dependent supplier firms, as in Japan. The TVE boom, together with tens of thousands of urban collectives and private firms, not to mention thousands of small joint ventures with firms from Hong Kong and Taiwan, has altered China's industrial structure probably for a very long time. If it had continued its Stalinist-style industrial development of the 1950s, with its emphasis on large heavy industries in the Northeast, China might have a very different organizational structure today. China instead deliberately set out on a different kind of development path, relying much more on small manufacturers scattered across the country. This small-scale industrialization program got off to a disastrous start with the "backyard" iron and steel program, but major adjustments were made, and these small firms have served China very well over the past two to three decades. China's experience has no precise analogy in Asia. The closest is Taiwan Province, which also built up its manufacturing sector by relying heavily on small producers, except in a few producer goods industries where large state enterprises dominated, at least at the outset.

Vietnam's structure of industrial organization is much less developed, and that makes it much harder to speculate about what that structure might look like in the future. The current structure is made up of a few large state firms—large relative to the size of Vietnam's market—a few thousand other state industrial enterprises, FDI firms producing mainly for export, and a small scattering of private industrial enterprises. There is nothing comparable to the TVE industries of China. If Vietnam stays with the institutions and policies that have created this structure, it may gradually become an inefficient version of the Singapore model of state enterprises together with an FDI-dominated industrial sector. Alternatively, Vietnam could free up the private sector, in which case it might get rapid development of small-scale domestic industrial firms not unlike what happened in Taiwan during the first decades of that island's development.

How China and Vietnam deal with these issues of industrial organization will have a large influence on whether their two economies continue to grow rapidly. One way or another, the two countries need to transform their enterprises into dynamic units that can compete both domestically and internationally. Enterprises that operate along bureaucratic lines or are weighed down by extensive government controls will not be able to provide the necessary leadership.

Financial Reform and Macroeconomic Policy

The problems facing reform in the financial sectors of China and Vietnam are in many ways similar to those facing the state-owned industrial sector. In fact, it is not possible to reform the financial sector unless one also does something about the state industrial sector; the reverse is also true. Similarly,

it is not possible to move to a market-based macroeconomic policy unless China and Vietnam reform the state financial and industrial sectors.

The problems facing the Chinese and Vietnamese financial sectors also have many features in common with the crisis-hit financial sectors of Southeast Asia and Korea and for some of the same reasons. Both in China and Vietnam and in Southeast Asia and Korea, the weakness of the banking systems was a direct result of decades of government-directed bank lending. The banks themselves had little autonomy and did pretty much what their governments asked them to do. When government efforts led to healthy firms, the banks had strong loan portfolios. When government lent support to efforts that ended in failure, bank loan portfolios filled up with nonperforming assets.

The financial sector in China and Vietnam is dominated by a few large state-owned commercial banks. China also has a growing nonbank financial sector, but it is not discussed here. The state banks have the standard state enterprise problems, including soft budgets and management picked by higher-level government and party officials. In certain respects, the problems of the banks are worse than those of the state industrial enterprises. The banks are too large and too important to the national economy to be allowed to fail. These banks also face very little competition, except from a few small private banks and from the nonbank financial sector. Historically, under the Soviet command system, these banks were an integral part of the central bank, and their main role was to monitor compliance with the central plan. The normal service functions of a modern commercial bank were at best a sideline and were generally carried out in a highly bureaucratic manner. This inherited behavior has been slow to change.

If nonperforming loans were properly accounted for in their balance sheets, all of these banks would probably be classified as bankrupt.¹² Since most of the debt is owed domestically, however, the government can always step in and refinance these banks by using general revenues, by selling government bonds to the public, or by printing money. Bailing out the banks without reforming their behavior, however, will encourage those banks to continue making loans that will be classified as nonperforming, a problem that economists refer to as moral hazard. But, if the banks do not lend to state industrial enterprises, these firms will have to close down or stop paying their suppliers. Since many of these state industrial enterprises would be profitable if other enterprises paid their bills, simply cutting off bank loans to those who do not repay may lead to the bankruptcy of many potentially viable enterprises. Any real solution thus involves simultaneously sorting out the nonperforming assets of the banks and the accounts receivable that will never be received of industrial enterprises. Simultaneity in solving the problems of both sectors does not mean that the process has to be achieved overnight, but there has to be a concerted effort to change behavior in both sectors at the same time. Sequencing, where one deals first with only one sector and then the other, is not realistic in this context.

China in 1998 and 1999 began to come to grips with this complex problem of joint reform. One part of the solution was as much political as economic or administrative. Pressure on the banks to lend to losing state enterprises generally came from powerful political figures in the provinces. Provincial political leaders did not have to be concerned with the macroeconomic implications of excessive bank lending, so they used their power to support local firms. Bank officials in China traditionally were far down the ladder of political power and hence were in a weak position to resist these local political pressures. China, therefore, took steps to weaken the influence of politicians on the bankers. Earlier in the 1990s, when inflation was accelerating, this involved placing a powerful figure at the head of the banking system for the first time (Zhu Rongji). In the late 1990s, the jurisdiction of bank branches was made broad enough so that bank officials were not beholden to or under the thumb of only one local group of politicians. One way or another, China will have to get politicians out of the banking business if it wants to modernize the system.

The solution to the problem of the low quality of bank services in both China and Vietnam will probably only come through competition. Conceivably, domestic private banks could provide the necessary competition, but competition is more likely to be effective if it comes from established international banks. China's policy of allowing foreign banks first to set up full-service branches only in Pudong across the river from Shanghai and then to expand those privileges to a few other cities will have only a limited effect on the state banks. When China joins the WTO, however, one of the conditions of

entry is the gradual movement of China to national treatment for all financial services, including banks.¹³

Reform of China's and Vietnam's banking system involves more than the improvement of commercial banking services or the efficient allocation of investment. Until the banking system is reformed, it will be difficult for China and Vietnam to implement a modern market-based system of macroeconomic management.

On paper, China and Vietnam appear to have a modern banking system much like that in the industrial nations. Both have central banks and a number of separate commercial banks, unlike the unitary banking system characteristic of the Soviet command system. The commercial banks lend to enterprises and charge interest, and the enterprises are required to pay back their loans. The problem with this picture is that it implies that the banks and enterprises behave the way they do in a market system. However, due to soft budgets and other reasons, neither the banks nor the enterprises behave in the appropriate manner.

As a result, the banking and monetary system runs in reverse. In a typical modern banking system, monetary policy begins with the central bank attempting to control the growth of high-powered money by buying or selling government bonds on the domestic market or by some other similar method. The high-powered money or the money base, together with the commercial bank reserve ratio, determines the money multiplier, which in turn determines the potential lending capacity of the commercial banks. The interest rate then brings the demand for credit in line with the actual or potential supply of credit. When the growth of the money supply threatens to accelerate the rise in prices, the central bank cuts back on the growth of high-powered money, and the rest of the process follows more or less automatically.¹⁴

In China and Vietnam, however, higher interest rates do not easily deter lending because enterprises in many cases have no intention of paying back the loan in the first place. Backed by politicians, these enterprises pressure the banks to lend, and the banks often are too weak to resist. When the banks no longer have the funds to make further loans, they simply ask the central bank to provide them with whatever money they require. In the past, more often than not, the central bank complied.

When inflation accelerated, however, the top government leadership realized that something had to be done to rein in the growth in the money supply. Rather than try to control money growth indirectly by using market mechanisms to restrict the increase in the money base, the government simply set quotas on lending by the commercial banks. Each commercial bank was allowed to lend up to a certain limit and no more. As a method of controlling inflation, this procedure worked reasonably well. Twice in the case of China, first in 1990 and then again in 1995–96, price increases that had accelerated to more than 20 percent a year were brought down into the low single digits. But the procedure was also very inefficient. Any pretense of lending on the basis of commercial profitability criteria went out the window, and loans were allocated in accordance with administratively set quotas. This procedure did nothing to eliminate the underlying cause of inflationary pressure: the soft budget constraint of both the state enterprises and the commercial banks themselves.

The decisions to deal with both state enterprise and banking reform, therefore, are essential ingredients in China's efforts to move to a modern system of macroeconomic management based on indirect market mechanisms. Some of these mechanisms, a domestic government bond market for example, are already in place, at least in China. If the enterprise and commercial bank budget constraints can be hardened, open market operations on the government bond market should work in China, much as they do in other industrial countries.

The discussion to this point has assumed that macroeconomic policy in China would not have to deal with the problem of having complete capital account convertibility of the Chinese currency. Even in the face of the Asian currency crisis of 1997–99, it is likely that China could move to complete capital account convertibility without generating a run on the Chinese renminbi. China's huge foreign exchange reserves in 1998 and 1999 (US\$154.7 billion at the end of 1999) and its large current account surpluses make it unlikely that China would default on its foreign loans, most of which are in long-term credits in any case. Even Vietnam, which had a large current account deficit and low foreign exchange reserves, did not feel the full brunt of the Asian financial crisis. One reason was that Vietnam had relatively little short-term foreign debt. The other reason was that the Vietnamese *dong* was not convertible on the capital account.

But if China at some future date had lower reserves, more short-term debt, and a substantial current account deficit, the danger of capital flight could be very real. In that context, the weaknesses of the Chinese banks and state enterprises could well support a full-fledged financial panic. The Chinese banking system has followed a path of government-directed lending and the accumulation of large portfolios of nonperforming assets, much like its counterparts in Korea and Southeast Asia. In many respects, reform of the Chinese banking system is little, if any, further along than was the case in Indonesia on the eve of the crisis. Reform of the Chinese banks and the state enterprises, therefore, is a prerequisite for full convertibility of the renminbi. Reforms of this sort are necessary in Vietnam as well, but Vietnam will also have to strengthen its current account situation before any consideration of capital account convertibility is possible.

The Impact of Reform on Economic Growth and Structure

Economic reform is not carried out for its own sake. The purpose of these reforms is to change the growth rate and structure of the economy. What can one say about the impact of reforms in China and Vietnam on the growth and structure of those two nations' economies? The data available make it possible to begin to answer this question for China. Data limitations and the relatively short reform period in Vietnam make judgments about the impact of the reforms more speculative.

The impact of the reforms on China's industrial structure can be seen from the data in figure 7.2. The Chinese decision to follow the Soviet model led to a rapid rise in the share of heavy industry in the 1950s, a far greater rise than occurred elsewhere in East and Southeast Asia at a comparable level of per capita income. The mistakes of the Great Leap Forward (1958–60) and the withdrawal of Soviet technical support in 1960 led paradoxically to an even larger rise in the share of heavy industry.

SEE FIGURE 7.2 (SEPARATE DOCUMENT)

With recovery from the Great Leap Forward completed, light industry recovered some its pre-Great Leap share, and this share continued to rise slightly during the disruption of the Cultural Revolution in the late 1960s. Heavy industry's predominant position was then restored during the calmer 1970s and lasted until the beginning of the reform period. At the beginning of the reforms, a conscious effort was made to shift more investment to light industry. During the first years of the reform period, the light industry share rose again, but then leveled off. From 1985 or 1986 onward, the shares of the two sectors fluctuated only mildly, and the balance between the two presumably reflected the influence of shifting market forces more than a centrally directed effort to push one sector over the other. By 1998, when China's per capita gross national product (GNP) reached or surpassed about US\$2,000 in purchasing power parity terms, the shares of light and heavy industry were similar to the shares found elsewhere in the region at per capita income levels of US\$2,000.¹⁵

As the country shifted toward a market economy, therefore, China's industrial structure changed to one much like that found in other market economies in the region. Correlation does not prove causation, but the increasing role of market forces in China is the most logical explanation for this result. In a market economy, it no longer made sense to produce steel and machinery for the main purpose of producing more steel and machinery. Ultimately, the consumer was supposed to benefit, and that meant more light industry products.

What was the impact of reform on efficiency? This chapter deals mainly with the modern industrial and service sector, but it is useful to begin a discussion of the impact of reform on productivity by looking at the whole economy. One important reason for beginning at this aggregate level is that available statistics allow one to say something reasonably systematic at this level, whereas more disaggregated figures are frequently not available. The relevant data are presented in table 7.2.

SEE TABLE 7.2 (SEPARATE DOCUMENT)

The underlying capital and labor series used in the calculations in table 7.2 are from the same

sources and are more or less the same as the series used by Lau and Park in chapter 4 of this volume. The capital stock growth rate used in this chapter is slightly higher than that in Lau and Park, but generally the difference is well under 1 percent a year. Minor differences in the deflators and in the rate of depreciation used in the two chapters probably account for the differential, because both sources derive their estimates from the same official series on gross capital formation. The GDP figures used here are also different because this chapter recalculates Chinese GDP into 1990 market prices rather than using the distorted planning prices of the earlier years. This recalculation mainly affects the data for the 1950s and 1960s, and Lau and Park do not deal with this earlier period.

The results of the growth-accounting calculations in the two chapters appear so different because of differences in the methodology used. This chapter uses the conventional Solow approach to growth accounting that assumes constant returns to scale. Lau and Park, in contrast, estimate econometrically what they call a meta production function that allows for economies of scale. Without oversimplifying very much, what shows up as total factor productivity (TFP) in this chapter appears as economies of scale and a much higher weight for capital in the Lau and Park's chapter. However, little is known about economies of scale at the aggregate production function level. Presumably, they reflect the many external economies or agglomeration effects that occur as a country's per capital income rises. Put differently, whether it is the TFP of China that has risen with the reforms or the agglomeration effects that are somehow connected to the capital stock growth rate, the main point is that reforms brought about a major positive change.

The other difference between the growth-accounting calculations in this chapter and those of most others who do calculations of this sort is that, here, an effort has been made to divide the periods into ones that reflect fundamental differences in policy and approach. In particular, I look at the performance of the economy in various prereform periods and then divide the post-1978 reform period into two separate decades. The first reform period begins with the agricultural and foreign trade reforms and includes the first efforts at industrial reform up through the onset of inflation in 1988. The second reform period starts with the conservative reaction to inflation and the Tiananmen student demonstrations and carries the story up through the first phases of the Asian financial crisis, with a major economic boom in between.

At the aggregate level, the post-1978 reforms had a dramatic and immediate impact on productivity growth. Total factor productivity rose from negative numbers to account for more than 4 percent of the annual increase in the GNP growth rate. As market-oriented reforms took hold, TFP continued to rise, particularly in the 1990s, when China's leaders finally committed themselves to creating a market economy. This result, obvious as it is from the data, is sufficiently controversial to warrant going behind these crude estimates to try to understand why one gets these results.

It has become conventional wisdom in some circles to argue that the East Asian experience was built not on productivity growth but on the rapid increase in inputs of capital and labor.¹⁶ The extreme form of this argument is to state that East Asian growth is much like that of the Soviet Union in an earlier period and is likely to experience a similar fate. Is China the exception, or is China's experience much like that of the rest of East Asia? It is best to start with a review of what we know about possible refinements in these estimates for China that could moderate the conclusion reached about the impact of productivity on growth.¹⁷

To begin with, my estimates do not include improvements in the quality of the labor force. The data are available for estimating the growth rate of labor force quality, but such a task is well beyond the scope of this chapter. Education levels clearly have improved in China over the years, but much of the quantitative improvement occurred prior to 1978. The number of students enrolled in secondary school, for example, was the same in 1996 as in 1978 (the age cohort also declined as a result of the family planning program). Primary school enrollment tells a similar story. Only university-level enrollments expanded rapidly in the reform period, but such enrollments still accounted for less than 5 percent of the relevant age cohort in the mid-1990s. Any effort to attribute growth to improvements in labor force quality, therefore, must be based on an argument about improving educational quality. Such quality improvements clearly did occur, and in many respects they were the direct result of the economic reforms,

but it is hard to measure quality improvements of this type.

The shift of labor from low-productivity jobs in agriculture to much higher-productivity work in urban areas and in township and village enterprises also can be seen as either an improvement in the quality of labor or, following the practice of Edward Dennison, as an explanation for the rise in TFP. In the two decades beginning in 1978 and ending in 1998, employment in agriculture fell from 71 to 50 percent of total employment.¹⁸ Put differently, of the total increase in China's labor force of 298 million workers between 1978 and 1998, more than 230 million found jobs outside of agriculture. These industrial and service jobs may not appear to be high-productivity occupations to the casual observer. The alternative for these workers, however, was to share extremely low-productivity activities in agriculture, where there were already 100 million or more workers than were needed to maintain farm output.¹⁹

There is little question that there were major improvements in the quality of the capital stock, and some of these improvements may not be captured in the estimates used to calculate the figures in table 7.2. One clear improvement was the switch to far greater reliance on imported machinery and equipment than was the case during the period of "self-reliance" prior to 1977. It is unlikely that the impact of these imported capital goods is fully captured because many such imports not only were of higher quality but also cost less to purchase once China had the necessary foreign exchange. But the great increase in imported capital goods was a major object of and a direct result of the reforms. It is at least as plausible to speak of these improvements as a source of productivity improvement than simply as an accumulation of more input.

Total factor productivity, with or without the adjustments, therefore, explains much of the rise in China's GNP growth in the reform period. The continual rise in the TFP rate is also notable and is different from the experience of either Korea or Taiwan Province. In Korea and Taiwan Province, the period of high growth began with a five- to seven-year spurt in productivity. TFP growth then fell, however, and much of the high growth in these two economies over the next decade or two is explained by the steady rise in the rate of gross capital formation.²⁰ Why was the Chinese experience apparently so different? China, Taiwan Province, and Korea did not conduct much research and development (R&D) in the first decades of rapid growth. Differences in the pattern of R&D expenditures, therefore, cannot be the explanation. One plausible explanation for the difference is that China during the period of Stalinist development had strayed far from the most-efficient development path. There were, therefore, far more opportunities for productivity improvement than was the case in Taiwan Province and Korea. TFP growth in China during the first six years of reform (1979–84) was carried by the spurt in agriculture that followed decollectivization. After 1984, agriculture slowed down, but efforts to reform industry began and resulted in a dramatic rise in the output of township and village enterprises. Beginning in 1992 with Deng Xiaoping's famous trip to Guangdong Province, China fully committed itself to completing the move to a market system. The reforms that followed sustained the growth in TFP at least until the onset of the Asian financial crisis and the overall slowdown in Chinese growth in 1998.

A different perspective on the same phenomenon begins from the fact that the rate of gross capital formation as a share of GDP was already extremely high in China in the decade prior to reform. In the years 1970 through 1978, China's rate of gross capital formation as a share of gross domestic product averaged 35 percent each year (China, National Bureau of Statistics 1999a: 6). The average gross capital formation rate over the next decade (1979–88) was 36 percent. Thus China, unlike Taiwan and Korea, through state efforts to hold down incomes and consumption, achieved very high rates of investment prior to beginning reform, but much of that investment was wasted. Taiwan and Korea, in contrast, had low rates of investment both before and immediately after the beginning of reform. Reforms led to higher productivity growth, which then stimulated a rise in the rate of investment.

Studies of the industrial sector based on more disaggregated data also suggest that at least part of the rise in TFP in the economy as a whole was explained by a rise in TFP in industry itself.²¹ The weakness of all of these studies, from the point of view of this chapter, is that they deal only with the post-1978 reform period, largely because the required disaggregated input data do not exist for earlier periods. There is also a significant difference in the findings of at least two of the studies with respect to the performance of state-owned industry.

The main finding of Jefferson, Rawski, and Zheng (1992) is that all industrial sectors (classified by ownership) enjoyed positive TFP growth throughout the 1980–92 period. TFP growth among the TVEs and other collective enterprises, however, was much higher, more than double, the rate of TFP growth in state-owned industrial enterprises. Woo and others (1994) agree that TFP was high in the collective sector, but dispute the finding that state industrial enterprise TFP was positive.²² Li's data only cover the years 1981–87, but they are disaggregated by industrial sector rather than by ownership (Li and others 1993). In these estimates, TFP for 18 of the 24 industrial sectors was positive, with machinery and transport equipment enjoying the highest rate of TFP growth.²³ The industries with sharply negative TFP growth included electric power, post and telecommunications, and tobacco products. The mining sectors experienced either no significant productivity growth or, in the case of petroleum and nonferrous metals, sharply negative rates. Finally, Xiao Ceng and his coauthors use a large survey of enterprises done in 1995–97 to measure TFP by both ownership and industrial sector categories (Geng and others 1998). Their survey shows that a higher percentage of foreign-invested and private enterprises had high TFP than either state-owned or collective enterprises, but in comparing sectors, the best-performing sectors were those dominated by large state monopolies such as petroleum and gas or tobacco.

These studies of industrial performance lend weak support to the view that reforms led to improvements in industrial performance. The best evidence for this view is the high productivity growth in the collective ownership sector as contrasted with that in the state-owned enterprises. Unfortunately, one cannot say anything about the change in productivity that came with the shift away from the Stalinist development strategy of the pre-1979 period because data at the necessary level of disaggregation do not yet exist.

Vietnam's reform period is much briefer than that of China, and the data needed to come up with reliable estimates of capital stock growth and total factor productivity growth are not available. The limited data that are available have been used to make the estimates reported in table 7.3. As the data in the table suggest, despite large-scale aid from the Soviet Union, Vietnamese economic growth in the period before the reforms was very slow, and total factor productivity growth was negligible. In per capita terms, with population growing at 2 percent a year (1976–90), real growth was barely over 1 percent a year, and that estimate may well be too high since it depends on the questionable reliability of the relatively high growth rates reported for the early 1980s. In the 1990s, as is well known, GDP growth accelerated to East Asian levels, but the larger share of this increase was accounted for by the even more rapid increase in the growth rate of capital stock. Total factor productivity growth did rise, as one would expect given the opening up of the economy and the greater reliance on market forces, but by a lesser amount than was the case during the first phase of reform in China.²⁴ If the analysis in this chapter is accurate, even this level of productivity growth might not be sustainable unless Vietnam moves much more decisively to reduce the barriers to investment outside of the state-owned sector. The growth rate in Vietnam in the years 1998 and 1999 was sharply lower than in the first years after reform, and it is likely that total factor productivity fell, but we do not have the necessary capital formation data with which to estimate TFP.

SEE TABLE 7.3 (SEPARATE DOCUMENT)

Productivity data, therefore, lend weak support to the qualitative analysis of economic reform in the modern industrial and service sectors of China and Vietnam. The reforms did make a large measurable difference. In China that difference shows up mainly as a rise in total factor productivity. In Vietnam, the opening of the economy to the hard-currency world led to higher investment levels from both domestic and foreign sources, but the improvements in efficiency, particularly outside of agriculture, were more modest.

Neither country, however, is in a position to rest on their past accomplishments if they want to maintain the high growth rates of the 1990s. In Vietnam's case, the period of easy increases in national product may already be over. The period of easy increases in productivity may be over in China as well. The large spurt in agricultural productivity growth was a one-shot affair that ended after 1984. The TVEs

then played the dominant role in sustaining high GDP growth over the next decade, and there was a further boost from the rapid acceleration of foreign direct investment in the early 1990s and very high rates of growth of exports. The acceleration of market reforms after Deng Xiaoping's trip to the South in 1992 may have temporarily boosted productivity growth even further. If many of these productivity-inducing reforms have largely spent their force, as is likely, where will the next burst in high productivity and GDP growth come from? It is not likely to come from state-led infrastructure development programs like those in 1998 and 1999, however desirable that new infrastructure may have been. It will have to come from within the enterprises themselves, but it is not clear whether China's industrial and financial sector enterprises are ready to take on this role.

CONCLUSIONS

Both China and Vietnam have made remarkable economic progress over the past decade or two, but a successful past does not ensure an equally successful future. If high rates of growth are to be sustained, it is likely that both countries will have to carry out a series of major reforms in how they develop their industrial and financial sectors. I would like to propose the following policy and institutional reforms:

1. Both countries should resist the temptation to adopt a Korean- or Japanese-style industrial policy and should continue to reduce government intervention in industrial development, recognizing that government intervention will remain much larger than would be the case in some ideal free-market economy.
2. They will have to complete the process of transforming state-owned enterprises into fully autonomous firms facing hard budget constraints and no longer responsible for a wide range of worker housing and social welfare activities.
3. The state should abandon its role in the selection of enterprise managers and should turn that role over to enterprise shareholders and their elected representatives on company boards of directors.
4. They will have to complete the process of creating a modern independent banking system where government is not involved to any significant degree in lending decisions.
5. In the case of Vietnam, there should be recognition that the private sector is a vital part of any future development program and not just a sector to be vigilantly regulated and controlled. China has accomplished much in this regard, but still has a way to go.
6. While letting mergers and acquisitions happen in response to market considerations of enterprises themselves, government should do more to set the rules governing mergers and acquisitions.
7. Vietnam will have to make the economic changes required to get a trade agreement with the United States and eventual membership in the World Trade Organization.

This list could be extended without difficulty, but the main point is clear. Even ignoring issues such as rural poverty, uneven regional development, and much else that is well beyond the scope of this chapter, China and Vietnam have a lot to do in the area of reform if they want the next decade or two to be as successful as the previous decades have been. Although both countries can learn from the experiences of their East Asian neighbors and from others, China and Vietnam face a situation that is different from that of their neighbors in several fundamental ways. First, the structure of their economies is different in important respects from that of their neighbors at a comparable stage of development, which inhibits or precludes the duplication of Korea's or Japan's industrial and financial policies of the 1960s and 1970s. Similarly, China and Vietnam do not have the political and social underpinnings of an efficient industrial policy that eschews politics and corruption. And, finally, the global economic system has changed from what it was as recently as the 1970s. The current rules of the international economic system as established in the 1990s give China and Vietnam a choice between adopting an activist industrial and financial policy on the model of Japan or Korea or participating fully in the WTO and the global economy. There is little doubt which of those choices is most likely to provide long-term benefits to the economies of China and Vietnam. If China and Vietnam are to take full advantage of the global economic system, they must devise paths that are consistent with their own conditions as well as with the

requirements of the international economy.

NOTES

1. The formal definition includes requirements such as that they are established legally, are able to take civil liability, possess and use their assets independently, are entitled to sign contracts with other units, and are financially independent and compile their own balance sheets.

2. Village industrial enterprises prior to 1984 were included in agricultural output.

3. A good example of a firm that is likely to remain under state ownership is the Guizhou Aluminum Complex, which I visited in May 1999. The complex produced 1.87 million tons of aluminum products, owned a number of low-cost bauxite mines that provided most of its raw material, and was highly profitable, earning profits plus taxes of 2.5 billion yuan in 1998.

4. The Korean heavy and chemical industry drive of the 1970s was and is controversial. Studies that see the drive as an unqualified success include Amsden (1989). For a more mixed assessment, see Stern and others (1995).

5. The concept of corruption itself evolves over time. The Japanese practice of *amakudare*, whereby a government official, on retiring, often took a job in the industry that he had regulated, was long praised as being one reason for the close cooperation between business and government in Japan. By the late 1990s, Japanese increasingly saw this system as creating serious conflicts of interest among its government regulators, and the practice began to be phased out.

6. Of the 85 countries ranked in Transparency International's Corruption Perceptions Index, China was tied with Zambia in fifty-second place, and Vietnam was tied with Kenya for seventy-fourth place (number one, Denmark, had the least corruption). Indexes of this sort are highly subjective and not very reliable, since few people, if any, are qualified to make the kinds of comparisons called for, except in the crudest possible way. However, they do indicate where a country's corruption stands vis-à-vis the most- and least-corrupt nations.

7. In Japan, as elsewhere, roughly half of all gross capital formation was carried out by the state during the first decades of modern economic growth.

8. These infrastructure projects can also be provided by the private sector and are, in some cases, being provided by private investors in China and, to a much lesser degree, in Vietnam. It is highly unlikely, however, that the private sector will be the major provider of infrastructure in these two countries.

9. There is also, by now, a very large literature on the nature of TVE property rights, organization, and so forth. See, for example, Che and Qian (1998); Hai (1997); Huang and Cai (1998).

10. For a contrast with the way POSCOs run and a discussion of the way in which China runs its large state-owned enterprises in key sectors such as steel, see Steinfeld (1998); Otsuka, Liu, and Murakami (1998).

11. There is by now a very large literature on foreign direct investment in China. For one recent study, see Ishihara (1998).

12. For one discussion of the possible magnitude of nonperforming loans in China, see Lardy (1998).

13. If China were to move to a fully liberalized financial system with private banks and market-determined interest rates, one danger is that it would lose the seigniorage revenue that it now receives, not only from the issuance of currency but also from the below-market rates paid to depositors. One estimate puts this seigniorage revenue as equivalent to 5 percent of GDP in China (Fry 1996). I am indebted to Ronald McKinnon for pointing this out.

14. For a more in-depth study of the way inflation was generated in the banking and financial system of China in the early 1990s, see Yi (1994).

15. The division between heavy and light industry is not identical to the division between consumer and producer goods, but the two concepts are close enough for the purposes of this analysis.

16. World Bank (1993) also stresses the importance of productivity growth to the high rates of

growth in East Asia.

17. There have been other growth-accounting estimates for China. One of the more careful is by Li Jingwen and his associates. Li's periodization is different from this study's, but, with a few notable exceptions, his results are similar to those here. Specifically, he gets a negative rate of TFP for the 1953–78 period (-0.8 percent) and a positive rate for 1979–90 (2.5 percent). His underlying labor force growth series is also very close to the one used in this study. His capital stock growth rate is very different from the one in this study for the 1950s and, to a lesser degree, the 1960s, but the differences in the two estimates are small thereafter. Basically, Li gets very high capital stock growth rates in the 1950s and 1960s. My estimates are much lower, probably because I have deflated the earlier capital stock figures by a price index that, in my opinion, takes better account of the very high relative prices of industrial products in those earlier periods. There may also be some difference between the assumptions made in this study and in Li's about the initial capital stock in 1952, and this would affect capital stock growth rates in the early period, but not in the later years. Li's GDP/NMP growth rate for the prereform period is also higher than the one used in this study, and that difference is mainly due to the fact that earlier year NMP in this study was deflated to take out the bias caused by very high relative industrial prices in the 1950s through the 1970s, whereas Li's figures are closer to the official estimates that retain this bias. Li and others (1993: 52–56).

18. These figures are for employment in the primary sector, which includes mining, but the overwhelming majority of workers in this sector are in agriculture.

19. In formal terms, this statement implies that the marginal product of labor in agriculture was zero, which was not the case. But marginal productivity was extremely low, well below what workers could earn in rural nonfarm occupations.

20. This conclusion is controversial because it appears to contradict the findings of Alwyn Young and Lawrence Lau. But Young does not calculate the sources of growth for the initial years of high growth in Taiwan (1961–65). In Korea, calculations by myself and Lora Sabin suggest that Young may have made assumptions about the initial capital stock, among others, that result in too low a TFP estimate for these early years. Lawrence Lau's very different methodology suggests that TFP in these two economies was negligible, but his estimates also indicate that there were substantial economies of scale at the aggregate level. Scale economies, in an aggregate production function, are not necessarily much different from increases in total factor productivity in a production function with no economies of scale, a finding that also goes back to Edward Dennison. These issues are argued further in a forthcoming study of Taiwan by Hsueh, Perkins, and Hsu (2000).

21. The studies referred to here are Li and others (1993, ch. 3); Jefferson, Rawski, and Zheng (1992); Woo and others (1994). There has also been a subsequent debate between the authors of the last two studies over the sources of differences in their estimates.

22. The difference is due to how the two sets of authors deflate industrial value added.

23. This statement refers to four sectors: machinery, electrical machinery, motor vehicles, and other transport equipment.

24. One can speculate about why the growth rate of TFP in Vietnam was relatively low during the first phase of reforms, but the data are so weak that one cannot put much weight on such speculation. It may have been the case, for example, that Vietnamese agriculture, particularly in the south, was not as distorted by the collectivization effort simply because it did not last long. Thus there were fewer productivity gains to be had from abandoning collectivization than was the case in China. The data are also consistent with a widespread view that much of Vietnam's growth in the 1990s, particularly in the industrial sector, was driven by a large influx of capital from abroad in the form of foreign direct investment and international and bilateral aid. This influx made high growth possible in industry, despite the slow pace of reform in that sector.

REFERENCES

The word “processed” describes informally reproduced works that may not be commonly available

through library systems.

- Amsden, Alice. 1989. *Asia's Next Giant: South Korea and Late Industrialization*. Oxford: Oxford University Press.
- Che, Jiahua, and Yingyi Qian. 1998. "Institutional Environment, Community Government, and Corporate Governance: Understanding China's Township-Village Enterprises." *Journal of Law, Economics, and Organization* 14:1–23.
- China, National Bureau of Statistics. 1999a. *Comprehensive Statistical Data and Materials on 50 Years of New China*. Beijing: China Statistics Press.
- . 1999b. *Statistical Communiqué of the People's Republic of China on the 1998 National Economic and Social Development*. Beijing: China Statistical Publishing House.
- . 2000. *Statistical Communiqué of the People's Republic of China on the 1999 National Economic and Social Development*. Beijing: China Statistical Publishing House.
- China, State Statistical Bureau. 1997. *China Statistical Yearbook 1997*. Beijing: China Statistics Publishers.
- . 1998. *China Statistical Yearbook 1998*. Beijing: China Statistical Publishing House.
- Fry, Maxwell J. 1996. "Can Seigniorage Revenue Keep China's Financial System Afloat (December 18). Processed.
- Geng, Xiao, Liu Fujiang, Xing Junling, He Ping, and Yu Xiaoyuan. 1998. "Performance of China's Core Industrial Enterprises during the Period of Structural and Macroeconomic Adjustments: 1995–1997." (December 9). Processed.
- Gerschenkron, Alexander. 1962. *Economic Backwardness in Historical Perspective*. Cambridge, Mass.: Harvard University Press.
- Hai, Wen, ed. 1997. *Zhongguo xiangzhen qiye yanjiu*. Beijing: China Industry and Commerce Publishers.
- Hsueh, Li-Min, Dwight H. Perkins, and Chen-Kuo Hsu. 2000. *Industrial Development and the Role of the State in Taiwan*. Forthcoming.
- Huang, Yiping, and Fang Cai. 1998. "Myths and Realities of China's Rural Industrial Miracles." Paper presented at the Asia Pacific Economics Seminar, Australian National University, July. Processed.
- Ishihara, Kyoichi, ed. 1998. *Chugoku keizai to Gaishi [China's Economy and Foreign Investment]*. Tokyo: Institute of Developing Economies.
- Jefferson, Gary, Thomas Rawski, and Yuxin Zheng. 1992. "Growth, Efficiency, and Convergence in China's State and Collective Industry." *Economic Development and Cultural Change* 40(January):239–66.
- Jones, Leroy P., and Il Sakong. 1980. *Government, Business, and Entrepreneurship in Economic Development: The Korean Case*. Cambridge, U.K.: Council on East Asian Studies.
- Lardy, Nicholas. 1998. *China's Unfinished Economic Revolution*. Washington, D.C.: Brookings Institution.
- Li, Jingwen, Dale W. Jorgenson, Zheng Youjing, and Masahiro Kuroda. 1993. *Productivity and Economic Growth in China, USA, and Japan [in Chinese]*. Beijing: Social Science Publishers.
- Otsuka, Kenjiro, Deqiang Liu, and Naoki Murakami. 1998. *Industrial Reform in China: Past Performance and Future Prospects*. Oxford: Clarendon Press.
- Perkins and Sabin. *Industrial Development and the Role of the State in Taiwan*. Forthcoming.
- Steinfeld, Edward S. 1998. *Forging Reform in China: The Fate of State-Owned Industry*. Cambridge, U.K.: Cambridge University Press.
- Stern, Joseph J., Ji-Hong Kim, Dwight H. Perkins, and Jung-ho Yoo. 1995. *Industrialization and the State: The Korean Heavy and Chemical Industry Drive*. Cambridge, Mass.: Harvard Institute for International Development.
- Sun, Yun-Wing. 1991. *The China-Hong Kong Connection: The Key to China's Open-Door Policy*. Cambridge, U.K.: Cambridge University Press.

- Swee, Goh Keng. 1992. "Xinjiapo jingji fazhande jingyan ji qianying: zhanlue busho ji shishi qingkuang." East Asian Institute Offprint. Singapore (July 27). Processed
- Vietnam, General Statistical Office. 1991. *Economy and Finance of Vietnam, 1986-1990*. Hanoi: Statistical Publishing House.
- . 1994. *Cong Nghiep Viet Nam*. Hanoi: Statistical Publishing House.
- . 1997. *Statistical Yearbook 1996*. Hanoi: Statistical Publishing House.
- Woo, Wing Thye, Wen Hai, Yibiao Jin, and Gang Fan. 1994. "How Successful Has Chinese Enterprise Reform Been? Pitfalls in Opposite Biases and Focus." *Journal of Comparative Economics* 18(June):410-37.
- World Bank. 1993. *The East Asian Miracle: Economic Growth and Public Policy*. New York: Oxford University Press.
- . 1997. *Vietnam: Deepening Reform for Growth*. Washington, D.C.
- Yi, Gang. 1994. *Money, Banking, and Financial Markets in China*. Boulder, Colo.: Westview Press.