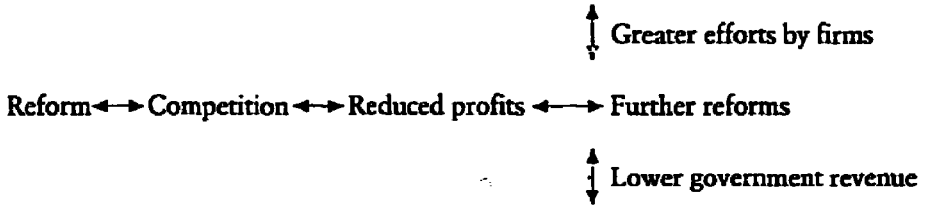
# Comment on "How Industrial Reform Worked in China: The Role of Innovation, Competition, and Property Rights," by Jefferson and Rawski

*Athar Hussain and Nicholas H. Stern*

There are seven propositions in the article by Jefferson and Rawski that embody the authors' description of the process of industrial sector reform in China. Schematically, their contents may be presented as follows:




The central driving force is intense competition between state-owned and town and village enterprises (TVEs) which, by eroding the profits of state enterprises, spurs them to innovate or, in the authors' words, to climb the product ladder. Further, since profits constitute a key element of the tax base, reducing profits lowers tax revenue, thereby hardening the government budget constraint. The government responds by reducing subsidies to enterprises, forcing them to maintain the momentum of innovation. Then by drawing lessons from the success of previous reforms, the government embarks on the next round of reform. The article is silent about the fate of enterprises that are unable, or unwilling, to climb. We argue that such enterprises are too numerous to be left out of the discussion.

We agree with much of the argument of the article, but we have doubts about a number of key parts of the story and the treatment of data. First, we question the strength of empirical evidence provided in support of the analysis, particularly concerning profit and innovative activity. We also question some of the underlying descriptions of TVEs and state enterprises and the interactions between them and between firms and government. Finally, we consider the underlying causes of the rapid growth in China, pointing particularly to decentralization and incentives.

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## Empirical Evidence

We have reservations about taking the falling profit rate as an unambiguous index of competition. Measured profit rates have indeed fallen for all categories of enterprises, but the counterpart has been a sharp rise in the share of value added going to labor. Such a shift seems to be central to the experience of other countries in transition as well. Compared with market economies, the share of wages in value added tended to be low in command economies (Atkinson and Micklewright 1992). The decentralization of wage determination and a relaxation in the rigor of state control seem to have increased the share of labor. Thus, at least part of the fall in profitability is due to rent-sharing rather than competition.

There is also a problem concerning how far the observed trend in profits reflects the actual trend. Compared with firms in a market economy, Chinese enterprises have both greater possibilities and greater incentives to underreport their profits. Independent accounting and auditing are still at a primitive stage, and the underreporting of profits does not carry the same costs for Chinese enterprises as it does for firms in a market economy. For example, Chinese enterprises need not be greatly concerned with the implications of reported profits for stock market valuation or credit rating. Further, a part of the observed decline in profits may be due simply to the hiving off of more profitable activities (and their associated resources) into subsidiary companies, which are private in practice but public in name. This process seems to be widespread and is described by the Chinese as "digging the socialist wall."

The share of new products in total sales, which the authors use as the indicator of product innovation, raises two problems. First, a fall in total sales of old products will be reflected as a rise in product innovation even if such innovation is absent. One would also expect this fall in sales to be accompanied by a fall in profits. Thus the regression results showing a fall in profits apparently driving a rise in innovation may simply indicate a fall in total sales emanating from a fall in sales of old products, which is raising the share of new products and depressing the profit rate. Second, the indicator is susceptible to serious measurement error in the Chinese context. Investment for the production of new goods is treated preferentially in the allocation of investment funds. This preference gives enterprises a strong incentive to repackage, or misrepresent, an old product as new.

## Alternative Perspectives on the Process

The story in the article rests on competition between state enterprises and TVEs and innovation on the one hand and the ability or willingness of the government to subsidize loss-making enterprises on the other. While accepting much of what the authors have to say, we question key aspects of their analysis of both parts of the story. The pervasive government intervention in TVEs, which the authors mention, has implications for the interpretation of TVE entry and exit. The local governments that establish TVEs are fired by the goals of developing their area and of extending nonagricultural employment. The authors cite the higher frequency of closure for

TVEs than for state enterprises as evidence of competition and tighter budget constraints. This link between closure and competition may well be part of the story, but the closures may also indicate that many TVEs are established without due regard for financial viability. Moreover, although the TVEs that are closed are loss-makers, many loss-making TVEs continue to operate.

When assessing the role of competition in product markets we should remember that there may well be as many examples of TVEs operating in semiprotected local markets as there are of dynamic TVEs competing with state enterprises. Aside from trade barriers created by a strained transport system, examples of local protection abound; from time to time the central government has to remind local governments that levying duties and putting up barriers to the entry of goods produced in other areas is illegal. Studies of TVEs suggest that they are highly heterogeneous and that their performance and behavior vary across regions (for example, Byrd and Lin 1990). The competitive role Jefferson and Rawski assign to TVEs does hold for a portion of such firms, but not all.

State enterprises are similarly heterogenous. Some of them may innovate and cut costs, but there is no evidence that this is true for all or even most of them. The virtuous circle of competition and innovation sketched in the article is at odds with the mounting concern in China about the insolvency of a large percentage of state enterprises (and also TVEs). A recent System Reform Commission study of state enterprises in Liaoning (a leading industrial center) found that only 12 percent of 1,200 large and medium-size state enterprises in the province are on sound footing. Another 18 percent are operating well with respect to short-term criteria but still may not be able to survive without government assistance. The remaining 70 percent have major problems, and many of them are financially insolvent (Guo 1994). The Chinese economy has a huge number of nonviable enterprises; it has yet to devise an effective way of dealing with the problem.

The regional diversity of China, which is crucial to understanding industrial reforms, does not play a central part in the argument of the article. State enterprises and TVEs are unevenly distributed, and their performance varies widely across regions. The share of state enterprises showing losses is much higher in old, established industrial centers than in provinces with new enterprises (State Statistical Bureau 1993). Dynamic TVEs are often found in areas where state enterprises are thinly concentrated. Competition among enterprises, central to Jefferson's and Rawski's analysis, is often across government boundaries. Local governments have ways of stifling competition or cushioning its impact when their industrial base is threatened. They also differ widely in their attitudes toward industrial reforms. The description of the attitude of subnational governments provided by Jefferson and Rawski is not representative of the whole country.

Thus the characterizations of competition from TVEs as universally intense and of the response of state enterprises as strongly innovative cannot be accepted without substantial qualification. The potential of further piecemeal reform for state enterprises and TVEs alike is now being questioned, and many in China are calling for drastic measures.

We also question the impression given in the article that subsidies to loss-making firms are being rigorously controlled. Only direct subsidies are reported in table 5, and they constitute only the tip of the iceberg. Much larger are the indirect subsidies operating through loss-making state trading agencies. These are essentially price subsidies. A substantial share goes to essential industrial inputs, such as steel and imported capital goods. In 1991, for example, direct subsidies to loss-making industrial enterprises accounted for 28 percent of the total budgetary outlay on subsidies, while budgetary subsidies to trading agencies accounted for 78 percent (Ministry of Finance 1992, p. 938). The authors mention soft loans from the banking system but diminish their importance by categorizing them as "policy loans" destined for investment projects. An investment loan to a nonviable enterprise is still a subsidy. In addition, the web of interenterprise debt (the so-called triangular debt) ultimately has to be underwritten by the government. Finally, a wide range of implicit subsidies are provided through the tax system. Enterprises may be allowed to offset loan principal repayments from their profits tax or even from indirect taxes, as in the electricity industry.

Circumstantial evidence does suggest that both the government (at all levels) and the banking system are taking a harder line on subsidies and loans to loss-making enterprises. Nevertheless, the budget constraints in China are still very soft by the standards of a market economy. Given the government's reluctance to permit bankruptcies, it does not have the option of calling a stop to subsidies to loss-making enterprises even when they are regarded as nonviable.

The fall in fiscal revenue as a share of GNP is real and is cause for serious concern (Hussain and Stern 1992). However, we have to be careful in drawing the conclusion that the budget constraints are sufficiently hard to sustain the process of competition and innovation outlined in the article. The financial capacity of the government to prop up loss-making enterprises, though it appears to have diminished in recent years, is far greater than indicated by its budgetary revenue. The boundaries of the government in a transition economy are far from clear, and the financial constraint it faces cannot be simply deduced from its budget. Nonbudgetary revenue in China has risen from 31 percent of budgetary revenue to 94.5 percent (Ministry of Finance 1992, p. 924). This change is associated with, among other things, commercial pricing policies in public utilities and more entrepreneurial behavior in public institutions.

## Factors Other Than Competition in China's Reforms

As economists, we are taught to extol the virtues of competition. But it seems to us that the authors exaggerate the role of competition in explaining recent phenomena in China, to the neglect of incentives and decentralization of decisionmaking in stimulating effort and enterprise. Surely what the Chinese have illustrated is something obvious but fundamental: rewarding effort can elicit a substantial response even in the absence of radical institutional change. Decentralized government also has played a crucial role in the dynamics of China's reforms (Qian and Xu 1993). It has allowed local experimentation, letting some regions race ahead. The prolifera-

tion and explosive growth of TVEs owes a great deal to local initiative permitted by decentralization. But decentralization has also delayed reform of the tax system and impeded development of financial regulation and the conduct of macroeconomic policy. These are areas in which centralized decisionmaking has great advantages and can even be essential.

The authors also underplay some other factors that are as important as competition. For example, they attribute to the open door policy a rapid increase in imports of industrial goods, many of which they claim competed directly with domestic goods. In fact, much of China's imports have consisted of capital goods that Chinese industry is unable to produce, such as civilian aircraft, computers, and assembly lines. Imports that "directly compete" with domestically produced goods constitute only a small part of the total. A major contribution of the open door policy has been to upgrade the technology available to Chinese industry. Also, the fact that Chinese economic reforms brought an immediate tangible benefit to a large majority of the population has played a central role in supporting the momentum of piecemeal reforms. Without the popular support that came with these benefits, the process would not easily have been sustained. Notwithstanding the political control of the Communist Party, the Chinese leadership is sensitive to the attitudes of the population.

## China and Other Transition Economies

The Chinese example refutes some of the more simplistic versions of the now familiar argument that the best transition is always the fastest. There are, however, important ways in which China's experience and circumstances differ from those in other transition economies. We highlight five.

1. China has been politically and economically stable. Notwithstanding changes in leadership since 1978, the basic approach to reforms has been remarkably consistent.
2. China's prereform economy differed from the command economies of the Soviet Union and Eastern Europe in some major respects. The economy was already highly decentralized in the sense that local governments had a great deal of discretion. This decentralization has made it possible to introduce piecemeal reforms and allow experimentation without disrupting the whole economy. Moreover, since much of industrial output was distributed outside the centralized supply system, the barriers to setting up new enterprises were comparatively low. Inputs for new activities could be obtained relatively easily.
3. An overwhelming percentage of the labor force was, and still is, located in rural areas and organized largely at the household level. Market-oriented reforms are easier to introduce in such an environment than in an economy dominated by large-scale industry and economic organizations. This rural-community-household structure means that market incentives can be introduced without building entirely new institutions. Much activity can be generated merely by lifting the restraints on economic activities. The flexibility of the rural labor market has been crucial in facilitating the growth of TVEs.

4. China began its reform process with none of the major macroeconomic handicaps that afflicted many other postcommunist transition economies. The inflation rate was low, and government finances were in balance. China had no international debt. Notwithstanding the acceleration in inflation since the mid-1980s, the savings propensity of Chinese households continues to be very high, making it much easier to sustain a high growth rate without runaway inflation.
5. Hong Kong has played a crucial role in the rapid expansion of exports and the large inflow of foreign direct investment. It has been the largest source of foreign capital, a major conduit for Chinese exports, and an invaluable source of commercial know-how for exporting to industrial market economies.

In sum, these differences tell us that while China's example debunks some simple slogans masquerading as rigorous analysis, it does not necessarily provide a model for all transition economies.

Finally, we would like to thank the authors for a stimulating article. It provides a challenging perspective on the Chinese experience and raises fruitful issues for discussion and research. The article is surely correct to focus on the relation between TVEs and state enterprises and to emphasize that piecemeal reform can generate a momentum of its own. There is no doubt, to paraphrase Mao, that "letting a hundred enterprises and activities bloom and contend" before destroying the old has served China well.

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# Comment on "How Industrial Reform Worked in China: The Role of Innovation, Competition, and Property Rights," by Jefferson and Rawski

*Shahid Javed Burki*

My view of industrial reform in China is considerably different from the one offered by Gary Jefferson and Thomas Rawski. Before presenting my view of the factors that contributed to the massive increase in industrial output and the dramatic restructuring of the industrial sector in China, I want to provide some basic information about the performance of this sector.

## Transformation of China's Industry

The Jefferson and Rawski article offers a great deal of raw statistics to underscore the changes that have taken place in China's industry since the dawn of the reform era. Since the authors chose not to highlight some of the significant changes that have occurred, let me list just a few:

- Between 1980 and 1992 the real output of industry in China increased nearly fivefold—an annual growth rate of 13.1 percent.
- There was a striking change in the pattern of ownership of industrial assets during this period. In terms of output the share of the state-owned enterprises declined from 76 percent to 48 percent, while that of the collectives increased from 24 percent to 30 percent. There was no privately owned industry in 1980; in 1992 private enterprises accounted for 7 percent of industrial output.
- The losses of state-owned industrial enterprises increased sixfold in nominal terms from ¥5 billion in 1986 to ¥30 billion in 1991. The share of the state-owned industrial sector in total losses by state enterprises increased remarkably, from one-ninth to one-third over this period. However, the coverage of these losses by government subsidies declined from 81 percent to 48 percent. The distribution of subsidies to state-owned enterprises shows clearly that the government was not reluctant to expose industrial enterprises to competition. It was more willing to protect nonindustrial state enterprises instead.
- The return on capital invested in industry fell by more than half between 1980 and 1993—from 25.2 percent to 11.9 percent.

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Jefferson and Rawski also provide information on wages for different classes of enterprises, changes in the profit-capital ratio, and levels of concentration in different industrial groups.

This is a partial and somewhat idiosyncratic coverage of the data available on the Chinese industrial sector. To get a better picture of the characteristics of the industrial sector and its contribution to the development of the economy, it would have been helpful, for instance, to provide information on the geographic distribution of industrial output and on how it changed following the initiation of reforms. The authors also could have provided information on the geographical distribution of foreign direct investment, the contribution made by different industrial sectors to China's remarkable export performance, or the increase in employment in different industrial categories. Had the authors cast their statistical net over a wider area, they might have reached a different conclusion about the factors that contributed to industrial performance in China.

## The Jefferson-Rawski View of Industrial Transformation

It is not always easy to understand the logic that supports the main conclusions Jefferson and Rawski reach on the transformation of the Chinese industrial sector. I have also detected a number of contradictions between the seven propositions presented in the second half of the article and the principal argument laid out in the first half. However, I will not go into these problems. Instead I will focus on the larger picture of China's industrialization.

According to Jefferson and Rawski industrial reform in China was a consequence mostly of endogenous factors: the state gave the industrial sector a big push and then, essentially, sat back and watched internal factors take over and guide the sector's evolution. We are told that enterprises and individuals by and large act on their own, proceeding on the basis of the impulses generated from within the industrial sector. The picture that is offered is that of a benign, laid-back state passively watching—although not in a disinterested way—the evolution of the industrial sector. The disequilibrium that resulted from the actions initially taken by the state has kept the sector out of balance. Impulses move down the vertical ladder—from the state-owned industries at the top of the industrial apex to village enterprises at the bottom—and across the horizontal structure as managers of enterprises at different layers of the system vigorously compete with one another.

For some reason the authors label this process of change "gradualist," contrasting it with the top-down, exogenous, centrally planned reforms they believe were advocated by several international organizations for reforming the industrial sector of the former Soviet Union.

## Evolution of Chinese Industry: Another View

I have a number of quarrels with both the hypothesis offered and the "gradualism" label applied to it. Since this is not the place to present my picture of China's indus-

trial reform in detail, I concentrate on one important aspect that is central to the argument advanced by Jefferson and Rawski: the role of the state. I have a fundamental difference with the authors. In my view the state's role was much more continuous and interventionist than the authors suggest. Consider the following six sets of policies adopted and vigorously pursued by the state that encouraged not only a sharp increase in industrial output but also the restructuring of the industrial sector.

The first important decision, taken in the early 1980s, was to permit rural communities to keep the bulk of their incomes as savings and invest them in nonagricultural activities. Thus was born a new class of entrepreneur operating in the countryside. This decision was the logical outcome of the enormous increase in rural incomes that, in turn, was a consequence of the disbanding of communes and the virtual privatization of agricultural assets. The state, by permitting the establishment of industries it could not control, was creating a new force whose full impact it did not then fully appreciate. The result was an enormous expansion in the number of town and village enterprises (TVEs) and a corresponding increase in their output. By the early 1990s the TVEs not only employed the same number of workers as the state-owned sector but also had a considerably higher rate of job creation. The expansion of the TVE sector, therefore, offered some welcome space within which the government could experiment with the restructuring of state-owned industrial enterprises.

Second, having made the decision that led not only to the remarkable growth of the industrial sector but also to its dramatic restructuring, the government, by changing relative prices, altered the environment in which state-owned enterprises had functioned since their founding. The changes in relative prices came gradually, and after a great deal of deliberation and experimentation. By the early 1990s most of the decisions taken at the margin by industrial managers—in both the state and the nonstate sectors—were based on market signals.

Third, Chinese policymakers granted considerable economic autonomy to provincial and municipal governments. The coastal provinces and several large coastal cities were given an extraordinary amount of authority to conduct their economic affairs. But for that, the coastal provinces would not have grown at the rate they did, Chinese exports would not have increased at the rate they did, and joint ventures would not have become one of the most dynamic elements in the Chinese industrial sector.

Fourth, by about the middle of the 1980s the state began to experiment with the restructuring of the industrial enterprises it owned. This experimentation continues today. No satisfactory formula has been found for improving the efficiency of state-owned enterprises, but the state is willing to take time to find the right set of solutions.

Fifth, the slow and deliberate pace of reform of state-owned enterprises is motivated by the leadership's strong desire to maintain social stability. The leadership is unwilling to risk social instability in order to improve enterprise efficiency. It is proceeding on three tracks simultaneously: creating new institutions that will ultimately assume responsibility from state enterprises for providing housing and social security, allowing the nonstate sector to expand rapidly to permit the transfer of work-

ers from the state to the nonstate sector, and continuing in the interim with various experiments to restructure the enterprises.

Sixth, lacking instruments of macroeconomic control for dealing with the frequent boom and bust cycles, the state has applied all manner of administrative and political devices to restore equilibrium in the financial, labor, and product markets and to curb investments in overheated sectors that were attracting speculative capital. The state has also been prepared to use the large external balances it has at its disposal to cool the economy with more imports.

## Conclusion

I could go on listing government policies in order to underscore my point: the state in China has been active and interventionist in its approach toward economic reforms, particularly in the industrial sector. It has also been gradualist, but not in the sense implied by Jefferson and Rawski. It moved slowly and continuously after a great deal of experimentation. Its primary concern remains the rapid development of industry that will allow it to restructure state-owned enterprises and accommodate the large number of workers—perhaps as many as 20 to 30 million—that would inevitably be displaced. This, I believe, is a more accurate picture of the transformation of the industrial sector than the one offered by the authors.

# Floor Discussion of "How Industrial Reform Worked in China: The Role of Innovation, Competition, and Property Rights," by Jefferson and Rawski

Rawski saw no great disagreement between his and Jefferson's analysis and the discussants' comments; rather, it seemed to him, they were interpreting the same thing in different ways. This was both encouraging, responded Shahid Burki (discussant), and a typical Chinese response to external criticism: to make it endogenous.

A participant asked what role ideas—and ideologies—played in industrial reform in China. Ideas that existed long before 1978, replied Rawski, were important in China's reform; indeed, as far back as 1956 proposals for the second five-year plan involved small-scale industry, decentralized local control, and other elements that surfaced in the reform effort twenty years later. One of the refreshing things about China, added Nicholas Stern (discussant), is that it is one of the most unideological countries imaginable. Pragmatism is much more of a driving force.

Rawski said that he could not agree more with Stern, for example, about the incentive to conceal profits in Chinese industry; he was amazed whenever someone said two-thirds or more of state enterprises lost money, because those loss figures were fiscal data. So he agreed that there was a data problem, but how, then, did Stern explain convergence phenomena?

Stern rephrased the question before responding: why, if the older numbers were made up, would they all converge? He would emphasize another aspect of the data in trying to understand why profits had fallen. In his view, profits had dropped because the labor force had negotiated a larger share of them in response to the firms' greater discretion in the disposal of value added. Then the question is, how far can profits decline? In Stern's view the only constraint on how far you can reduce reported profits is what you can negotiate with local tax authorities. He prefers that interpretation rather than one involving a highly mobile and competitive capital market, which he thinks does not yet exist in China. He would not insist on any interpretation, but he would rather focus on constraints on labor's share than on profits in a mobile capital market. To turn the question of what happened to profits around and ask what happened to labor's share is simply a different way of looking at the same phenomenon. If the profit rate goes down, labor's share goes

This session was chaired by Robert Picciotto, director-general, Operations Evaluation, at the World Bank.

up. But to focus on labor's share does raise different questions, such as how labor's share is determined and what discretion there is. These issues are part of any story about competition and may in fact be more important.

Responding to the repeated mention of labor's increasing share of income in state enterprises, Jefferson observed that labor's share of income had risen from close to 7 percent in 1980 to just under 8 percent in 1990, which as a share of gross output is not that large an increase. A substantial share of compensation for state enterprise workers came from in-kind payments (in the form of housing, health care, schooling, and other social services), but these were unlikely to have represented more than 5 or 6 percent of gross output. Labor's output elasticity in state industry is at least 15 percent, he continued, which suggests that its contribution to industrial output is about 15 percent of total inputs. We would not reject the hypothesis that labor's share of income is consistent with its technical contribution to production, said Jefferson.

We're not referring only to the profit data in the article, rejoined Rawski. Many results based on econometric analyses of sample data from Chinese enterprises—some by Jefferson and Rawski, some by others—are converging on relationships that one would expect to see in a competitive market. If the data are hokey, Rawski asked, where do these results come from?

If the role of the state was so important, Rawski asked Burki, then who pushed the suicide lever that drove the ratio of government revenue to GNP from 35 percent to 14 percent in thirteen to fifteen years? Of course, Rawski acknowledged, the government was active and there were exogenous factors at work; Hong Kong and the open door policy were also important. He and Jefferson were not claiming that everything was endogenous. But despite the strictures of the discussants, Rawski believed an important endogenous process was going on, that competition was important, and that the government was reacting as often as it was leading.

To understand how the Chinese industrial sector has functioned, responded Burki, you have to take a more balanced view. You cannot just factor out the role of the state. And explaining the rapid decline of the state's share in revenues does not demonstrate the correctness of one hypothesis or another. These are outcomes of how the state was proceeding: it would go forward a couple of steps and then retreat one step. The state was at that very moment trying to respond to the problem Rawski had suggested, which is that both enterprises and provinces have benefited greatly from the autonomy the state had allowed them. That is at the crux of the Chinese experience with reform.

Rawski asked Burki if he knew of any document published in China in the early or mid-1980s suggesting that policymakers knew that reform would bring about a big decline in government revenues and yet decided to go forward with it anyway. There would be no such document because this was an unexpected outcome for policymakers, which is why he and Jefferson leaned toward the interpretation that the government, although active and purposeful, was not in charge and was reacting as much as it was acting. Burki was sure Rawski was not surprised that studies of this kind did not exist. Part of the beauty of the Chinese experience, Burki said, was that

China was not only so unideological but also so unplanned. The Chinese take positions without reflecting too much on the long-term consequences, which is why there is constant experimentation, study, adjustment, and so forth. There is very little ex ante work and a great deal of ex post work.

Jefferson said that there may be room for argument on both sides in the debate about a balanced or unbalanced approach to growth. On one side of the debate Rosenstein-Rodan and Nurkse advocated a balanced growth approach to development, and on the other side Hirschman advocated an unbalanced growth approach. Jefferson suspected that in hindsight each might appreciate the other's point of view. Hirschman, besides emphasizing links within the economic—especially the industrial—system, might also acknowledge the importance of coordinated investments by the state. And those on the other side of the debate might appreciate the spontaneous links that exist within the industrial system. Asked to comment, Burki said that China is so complex and unique that it would not further understanding to force China's experience into any particular bottle. He would prefer to reflect on what had happened and try to explain it without bringing in various theories on other situations.

A participant from the University of Massachusetts asked for observations about the training or retraining of China's managerial cadre. Was that approach to training transferable to Eastern Europe? Rawski said that he did not know enough about the training of managers in the 1990s to answer the question usefully. The participant observed that, if managers in China are responding to competitive pressure, surely not all managers are responding equally rapidly or well. Has any work been done to identify the factors that explain differences in managers' ability to respond? Rawski responded that not much is known about managerial labor markets in China and the factors that determine managerial performance.

A participant from the University of Pennsylvania asked for comments on the tremendous investment, technical assistance, and know-how the overseas Chinese had brought to China. Jefferson agreed that their contribution had been very important. The Chinese statistical yearbook, he said, shows an average of 100,000 border crossings a day between China and Guandung Province, and he suspected that most people crossing the border were carrying export orders, technologies, managerial resources, and other factors important to industrial development. This was consistent, he said, with their emphasis on the spontaneous bottom-up nature of reform, even when initiated by the center.

Observing that China's population is far more rural than that of Eastern Europe, a participant from the London School of Economics asked how important that is in terms of providing a spare labor force for industrial activity that was unavailable in Eastern Europe (Eastern Europe's main labor force being trapped in state enterprises). How do they face that problem? Rawski replied that the nonagricultural labor force's low share in China's economy gives China added flexibility, but that a real problem remains: steel enterprises, for example, that need only 50,000 workers employ 150,000. People are being guaranteed pensions when pension funds have not accumulated, people are living in houses that cannot be profitably maintained,

and these problems will not go away. Despite a big agricultural sector, China's huge state industrial sector employs 40 million workers, and the problems of reform are immense, painful, and intractable.

Jefferson added that extending the notion of Grossman and Helpman's quality ladder into China's domestic industry was not a mere abstraction; it was based on observation. He and Rawski had recently visited a township and village enterprise (TVE), a garment factory outside Beijing, in which the factory manager told them that she was competing both with state enterprises, which produced higher-quality garments (but at a higher cost), and with households, which produced lower-quality products (but at a lower cost). This suggested to Jefferson and Rawski that product quality and innovations were moving down the ladder and that competition was moving up. Certainly the factory director was aware of the situation.

Burki said that he would place the ladder between Guandung and the rest of the country, because innovation was coming from Guandung and was not restricted to state enterprises. On the contrary, provincial and joint enterprises (in which the state enterprises were not active) had become leaders in innovation and technology.

One participant asked how, in hypothesis testing, the effects of overall changes on a sector or industry were isolated from the effects of TVEs on state enterprises. Jefferson suggested looking at the paper by Inderjit Singh, Dilip Ratha, and Geng Xiao (cited in the Jefferson-Rawski article), who, using provincial panel data, found that the larger was the nonstate share of industrial output, the lower was the profitability—or, the more the nonstate sector grew, the faster profitability fell. They also found that the more the nonstate sector grew, the faster total factor productivity rose.

In fact, said Jefferson, state-owned enterprises are responding to competition. Certainly, many of them are not responding to competition—and they are being left behind. Derek Morris, using another data set, suggests a close relationship between investment and gross profitability, and it does seem that the enterprises that are performing well are those that can capture investment resources and expand production. Those that do not capture resources and cannot expand capacity are not performing well and are falling behind.

A participant from the Congressional Search Division of the Library of Congress observed that with China midstream in the reform process, there was clearly a problem with the distribution of wealth—a cleavage between urban and rural centers and between coastal areas and the hinterlands. So where does the system go? Some economic problems, especially between peasants and factory workers, could become political problems, especially in areas where politics are hanging by a thread.

Income distribution is an important issue in any large country, responded Rawski. At the beginning of the People's Republic, in the early 1950s, there were huge gaps in income distribution between urban and rural citizens and within the rural sector. Chinese policies cut off the tails of the income distribution, but large inequalities remained when reform began. Reform has lessened some inequalities and magnified others. Will distribution be an issue in the future? Of course. But is Chinese politics hanging by a thread? Rawski didn't think so, although he hesitated to comment on such matters.