

The M-form hierarchy and China's economic reform*

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1. Introduction

For 13 years from 1979 to 1991, economic reforms in China have generated a significant growth: its GNP grew at an average annual rate of 8.7%, or at 7.3% for per capita GNP.¹ The Chinese economic performance is in contrast to that of Eastern Europe and the former USSR: the average growth rate of GDP in Hungary was 1.8% between 1981 and 1985 and almost zero in 1988 and 1989. In Poland, the average GDP growth rate was less than 2% between 1981 and 1989.² From both theoretical and policy perspectives, China's outstanding reform performances and associated different reform strategies from those of Eastern Europe and the USSR are particularly interesting and puzzling.

There are two popular views in explaining the differences between China and Eastern Europe. The first view states that China was at a much lower development stage than Eastern Europe and the USSR.³ The second view argues that China has followed a gradual and piecemeal approach as

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¹Data sources in this paper are from *Statistical Yearbook of China and A Statistical Survey of China* (various issues from 1985 to 1992), otherwise noted.

²Data source for Hungary and Poland is from Table 9.1 of Kornai (1992).

³Summers (1992), Sachs (1992) and *Transition* (vol. 2 nos. 9–10, 1991).

opposed to the big bang strategy in most of after 1989 Eastern Europe and the former USSR.⁴

We feel that both views are relevant but unsatisfactory. China's level of industrialization was perhaps higher than most people would think. China's industry accounted for about one half of its GNP in 1978, as compared to 60%–65% in Eastern Europe. Furthermore, in China, reforms have been more successful in the industrialized regions with a weak central government control than in the less developed regions. This fact suggests that one cannot explain the success of the reforms by low level of development in the regions alone. On the other hand, the argument for gradualism also raises more questions than answers. The Eastern European radical transition came after deep troubles or failures of many years of gradual reform. If China's gradualism is a success, why has it worked in China but not in Eastern Europe?

In this paper, we propose an alternative argument to explain the differences. Distinguished from Eastern Europe and the USSR, sustained entry and expansion of the non-state sector in China during the reforms were forceful and fast enough to reach a critical mass by the end of the 1980s. The non-state sector has in fact become the most important engine of growth in China. The unexpected, and perhaps unintentional, growth of the non-state sector is critical for the success of China's economic reforms. Although the reasons for the rapid expansion of the non-state sector in China may be many, we argue that one of the keys in understanding the phenomenal expansion of the non-state sector in China is the organizational structure of the hierarchy prior to the reforms. The organization structures of both Eastern Europe and the former USSR were of a unitary form based on the functional and specialization principles (the 'U-form' economy); in contrast, the Chinese hierarchy has been of a multi-layer–multi-regional form based on a geographic principle which emerged in 1958 (the 'M-form' economy).

Having recognized the costs associated with decentralization along regional lines, our analysis focuses on a neglected but important aspect of benefits of a multi-layer–multi-regional form of organization, that is, the opportunity and possibility that the M-form organization provided to facilitate sustained entry and expansion of the non-state sector. This is mainly because, under the M-form organization in China, governments at the bottom levels of the hierarchy have little bargaining power vis-à-vis their superiors but have substantial autonomy in developing their own regions by establishing market-oriented enterprises outside the state sector. Furthermore, competition between regions for getting rich fast puts pressure on the local governments to tolerate and even to encourage private enterprises as well. The very limited bargaining power and substantial autonomy together

⁴This view is reflected in Singh (1991) and McMillan and Naughton (1992), among others.

weaken bureaucratic controls and strengthen market activities inside this M-form hierarchy. What makes China's case particularly interesting is the fact that the rise in the non-state sector (including the private sector) occurred by gradually weakening the existing hierarchical control without totally destroying the existing structure like the one experienced by Eastern Europe and the USSR.

2. Sustained entry and expansion of the non-state sector in China

The non-state sector in China includes all enterprises not in the state-sector. In China's official statistics there are three categories of non-state ownership: 'collective ownership', 'individual ownership', and 'other types of ownership' (mainly private ownership and joint ventures). The vast growing rural enterprises, which include Township and Village Enterprises (TVEs), are all in the non-state sector.

The non-state sector has experienced a fast, sustained entry and expansion since 1979. China's non-state sector is engaged in all kinds of activities: construction, transportation, commerce, service, and in particular, industry. This is perhaps a crucial difference between China's non-state sector and that of Eastern Europe before 1989. During the period from 1981 to 1990, the share of the non-state industry in the national total has expanded from 22% in 1978 to 47% in 1991. If this trend should continue, China's state sector would shrink to about only one quarter of the total by the year 2000, even without massive privatization.

Accompanied with the high growth rate, the non-state sector is also more efficient than the state sector. For example, the annual growth rate of the total factor productivity of the TVEs was about ten times higher than that of the state enterprises.

Finally, one important characteristic about the entry and expansion of the non-state sector in China should be emphasized: the fast and sustained entry and expansion occurred largely from local initiatives, not from an intentional design of a reform program by the central government; and it took an evolutionary rather than revolutionary path.

3. The M-form and U-form hierarchical structures⁵

3.1. The U-form hierarchy of Eastern Europe and the USSR and the M-form hierarchy of China

It is well known that in Eastern Europe and the USSR the economies

⁵The terms 'U-form' and 'M-form' were first used by Williamson (1975) in his study of business organizations in the U.S. The former refers to the unitary form of organization along functional lines and the latter refers to the (single-layer) multi-divisional form of organization by brand name or geography.

were organized along functional lines or based on the specialization principle. Most enterprises were grouped by industry and under the direct supervision of ministries, while regional governments were subordinates of the center and their roles were limited to collecting information from below and implementing plans from above without much autonomy.

In those economies, enterprises were highly specialized and their sizes were extremely large. Comprehensive and rigorous planning and administrative coordination between ministries and between enterprises were crucial for the normal operation of the U-form economy. To show the complexity, in the late 1970s there were about 48,000 plan 'positions' for about 12 million products planned and coordinated by the Gosplan in the former USSR.

In contrast, the Chinese economy has been organized into a multi-layer-multi-regional form, in which each geographic region at each layer can be regarded as an operating unit. Each unit is further divided along geographic lines and at the same time the unit controls its own enterprises along functional lines. Operating units (regional governments) are semi-autonomous and relatively self-sufficient in terms of functions and supplies in production.

In the multi-layer-multi-regional form of hierarchy of China there are six administrative layers: central, provincial, prefecture, county, township (previously, commune) and village (previously, brigade). The hierarchical structure of each region at each level is a copy of that of the central government. For example, a county has about 10–20 townships. The county government controls the enterprises affiliated to the county government by functional line and specialization principle (e.g., finance bureau, textile industry, etc.), and it also oversees township governments within its territory. Similarly, a township controls its own enterprises in addition to the oversight of its villages.⁶

In the M-form organization, local governments are given semi-autonomous power. Financially, local governments in the M-form rely more on the performance of enterprises affiliated with them rather than on the above. This is particularly true for the bottom level governments (i.e., township and village governments in the rural area, and district and neighborhood governments in the urban area). At the bottom levels of the hierarchy, community governments are in a very low bargaining position vis-à-vis the government hierarchy and the banks. Thus, it is impossible for community government to get investment allocations, or to get subsidies for their affiliated non-state enterprises from the above government. It is also difficult for a community government to get favorable loans from the banks.

It should be clear that the difference between China's M-form hierarchy

⁶Given this structure of the hierarchy, China also followed a much more decentralized method than their Soviet counterpart in the process of making a plan: each region first formulates a plan, then the higher level government makes a balance, all the way up to the central government

and the former USSR and Eastern Europe U-form hierarchy is more than the relationship at the top level between the central government and the provincial government. The internal structure of a province in China is different from that of an Eastern European country, even in the case where the size is similar. This is in fact one of the main differences between our concept of the M-form organization and that of Williamson's.

3.2. The costs and benefits of the U-form and M-form hierarchies

The costs and benefits of a U-form and M-form organization affect the static efficiencies, stabilities, and evolutionary processes of the system. Compared with the U-form hierarchy, the M-form hierarchy is less efficient in utilizing scale economies, and less efficient in mobilizing scarce resources and concentrating on a few high-priority objectives. The M-form hierarchy has lower requirements in communication and information processing in which to coordinate its operation due to its decentralized nature. For example, in the former USSR, the central government had to coordinate the production and distribution of millions of products. But in China, the central government dealt with only a few hundred products. The rest was taken care of by the local governments independently.

In a U-form hierarchy, incentives of subordinates are designed for implementing the commands from the above. Agents are subject to frequent and arbitrary control of their superiors, and thus they try to avoid any change or risks. In an M-form organization, local governments are given semi-autonomies. Compared with the U-form hierarchy, it is less effective in implementing orders from the above in a well coordinated way, but it is better in mobilizing initiatives from bottom level units. This is because the local governments are not subject to arbitrary control from the above for tasks within their autonomies. This feature of the M-form organization induces strong incentives for local governments to conduct experiments.

It is acknowledged that one major feature in the Chinese reform is its success in using experimental approaches [McMillan and Naughton (1992) and Singh (1991)]. In fact, in Eastern Europe and the former USSR, some experiments also had been introduced in their reforms before 1989. However, the experiments were often either unsuccessful or were rarely promoted nationwide. The question arises: why is China special by using experimental approaches?

In the U-form organization, all industries are highly specialized and so are the regions. Thus, operating units are heavily interdependent and rigorous vertical administrative coordination is crucial for maintaining the normal operation of the economy. In such a case, allowing one or a few regions to do experiments may be very costly or perhaps not feasible. These features of the U-form hierarchy make the scope of regional experiments limited, which

may reduce the chance of being a success. Even when an experiment was a success, a large-scale promotion of one experiment required high coordination cost economy-wide.

In the M-form organization, however, the regional interdependence is relatively weak. In this case, the regional experimental strategy of reform in an M-form organization is less costly and more feasible: even a failure in the experiment will not considerably disturb the whole economy. With more experiments, therefore, under the M-form structure, people in different regions have more chances to develop a large variety of 'mutants', and to compare and to select among various alternatives. In this sense, the M-form organization is more flexible in the institutional evolutionary process. In contrast, the extremely strong regional dependence in the U-form organization makes the institution more rigid and difficult to change.

Different forms of organizations have also different responses to exogenous shocks. When an exogenous shock (say, a supply disruption or a change of rules) hits one unit of the U-form organization, the trouble of that unit may spread to the whole organization due to strong complementarities. In contrast, when the operation of one or several units in an M-form hierarchy is affected by exogenous shocks with a weak interdependence between units of the hierarchy, the adverse effects will be spread to the whole organization in a slower and weaker way. That is, the effects of exogenous shocks on an M-form hierarchy may be localized. This is another reason why the M-form hierarchy is more suited to regional experiments.

4. The M-form hierarchy and the non-state sector in China

The M-form organization is directly responsible for the fast entry and expansion of the non-state sector under the condition that the existing hierarchy is not destroyed at once. The most relevant aspects of the M-form organization are those associated with the bottom two level governments, that is, township and village governments in the rural area, and district and neighborhood governments in the urban area.

At the bottom levels, without much investment funds allocated from above, the community governments turn to set up or support non-state owned enterprises. Both the weak bargaining power and the semi-autonomous position deeply affect the incentives and behavior of local governments. With less gains in bargaining within the hierarchy, local government officials pay less attention to bargaining with the authorities above them. With more chances to earn money in the market, more attention is given to community enterprises.

One pervasive problem with the state-owned enterprises, which is closely related to the bargaining power of the enterprises, is the problem of the soft budget constraints [Kornai (1980)]. At the bottom levels of the Chinese M-

form hierarchy, the financial resources of semi-autonomous local branches of the banks are very limited and the bargaining power of community governments vis-à-vis the higher level branches of the banks are very weak. Thus the community governments' ability to mobilize financial resources are very limited. The low bargaining power of community governments disables them from bailing out loss making community enterprises, thus enabling them to commit to terminating troubled enterprises. Therefore, the budget constraints for non-state enterprises are actually much harder than for the state-owned enterprises. As an evidence, in 1989 about three million township-village enterprises (TVEs) went bankrupt, or were taken over by other TVEs.⁷

Another important feature, which distinguishes the M-form hierarchy from the U-form hierarchy, is the horizontal, and potentially competitive, relationship between regions and between regional governments. The horizontal relationships between regions create a condition for market-oriented transactions and trade among enterprises outside the scope of the state planning. It soon generates a competitive market environment. This is how the market mechanism in China emerged at such a fast pace within the existing hierarchical system.

In contrast, in the U-form hierarchy, transactions between two enterprises advance mainly through their common superior. The rationale of this rule can be justified by the specialization of the enterprise. With a high degree of specialization, rigorous administrative coordination is important for the normal operation of the economy. Thus, the development of the horizontal relationship inside a U-form hierarchy may severely damage the normal operation of the hierarchy. Without the horizontal relationship developed, the market mechanism is hard to emerge and evolve.

In China's reforms, entrepreneurship is developed inside the M-form hierarchy. With the weak bargaining position in the hierarchy, low-rank officials' temptation for promotion in the hierarchy have been reduced. An alternative for their career is doing business. Some officials quit their jobs to do business, more officials do business on their jobs. Instead of implementing commands from the above, their major job is to use their autonomous power in earning profits. Entrepreneurship is developed among many local government officials or Party cadres. There are many valuable human capitals accumulated in the M-form hierarchy which are better utilized when government officials are transformed into entrepreneurs.

Although we primarily emphasize the importance of the M-form hierarchy for the entry and expansion of the non-state sector in China, many reform measures, such as the open-door policy, establishment of special economic zones (SEZ's), export-oriented growth in some Southern coastal regions, the

⁷*People's Daily* (overseas edition), March 23, 1990

dual price system and the success of agricultural reform, are also important factors. However, the achievements of these measures can be better understood within our analytical framework of the M-form hierarchical organization of China. For example, the phenomenal expansion of the non-state sector is closely related to the success of China's agricultural reform. However, surplus labor, financial savings and potential of markets generated by the success of agricultural reform can not be transformed into growth automatically. Institutions are required to facilitate trade, and entrepreneurs are needed to organize production and distribution. It is the M-form organization that provides the flexibility within the system for efficient utilization of those favorable conditions.

5. Implications of the non-state sector for further reforms in China

The Eastern European transitions have shown that the massive and fast privatization of the state sector is rather costly. Given the initial condition of the M-form organization in China, the evolutionary approach of developing the non-state sector is perhaps an easier and less costly way at the initial stage of transition. Eventually, with the continuation of this process, the state sector will be forced to share a minor role in the national economy. Moreover, the rapid expansion of the non-state sector has important implications for denationalization of state enterprises for further reforms in China: successful non-state enterprises will eventually take over state enterprises.

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