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INTERNAL REFORM, BUDGET ISSUES AND THE INTERNATIONALISATION OF THE GRAIN MARKET IN CHINA

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Internal reform, budget issues and the internationalisation of the grain market in China

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Introduction

The aim of this paper is to review the reforms in the inter-regional transfer system for grain in China and to identify some of their implications. We are particularly interested in two sets of implications. One of these is the budget effects at both central and provincial levels. The other is the direct and indirect effect of the development of the internal marketing system on the forces for the integration of the domestic and international grain markets. Our analysis will therefore address the interactions between internal market reform, budget issues and the internationalisation of the grain market.

We argue that, in analysing these interactions, it is helpful to think of China not as a single economy but as a group of provincial economies. In principle they form a customs union (with a common external tariff). In practice, the application of the tariff regime may vary between points of entry. Also variations in policies between provinces mean that there are examples of substantial barriers to internal trade, some of which are discussed below. In this context, therefore, it is necessary to examine the level of autonomy at provincial level for the administration of grain sector policies and how local interests affect not only the patterns of internal trade but also the forces for the integration of this group of provincial economies with the world market.

There are two important pieces of background material that are helpful for this discussion. One is the development of the domestic grain marketing system. The other is the pattern of trade in grain within China, as well as that of China's trade in grain with the rest of the world. After a review of each of these issues, we discuss the inter-provincial differences in grain sector policies and their international implications. We do that by first reviewing some relevant changes in central-provincial fiscal arrangements and then by examining implications for grain marketing.

Developments in the domestic grain market

Marketing arrangements[1]

China's grain market reform has passed through three main phases.

<u>1978-84: initial liberalisation</u>

The first stage combined large increases in state grain purchase prices, continued state control of the bulk of grain distribution and the emergence of small-scale free trading among peasants and urban residents. Once begun, however, the logic of free market development started to take effect. Peasants preferred to sell to merchants than to spend all day sitting in small local markets. Merchants took on the role of aggregation of products to supply to larger markets, and a network of trade began to emerge. Eventually in 1984, the growth of this free market system was approved by the government and peasants were allowed to sell their surplus grain in markets, once they had supplied their quota.

The growth in the subsidies from the central budget over this period was perhaps the most important motive for the reform. As the state was committed to purchase all the marketable grain from producers at increased quota and over-quota prices, the market risks of grain production were actually undertaken by the state. This gave a boost to grain production, and subsequently, to state subsidies for grain marketing. The system of quota and over-quota prices was also attractive to producers who sought to sell more and more of their grain at over-quota prices. The over-quota state prices after 1980 were higher than market prices. Eventually, it was not possible for the state to pay all the subsidies to the grain bureaus, and the grain bureaus in many areas, in turn, refused to purchase grain from farmers at over quota prices. These issues contributed to the pressure for reform.

<u>1985-92: the contract system</u>

[1] This section is based on Watson (1996). See also Watson and Findlay (1995).

With the successful development of grain production in response to the higher prices, the second stage of reform was launched in 1985. The unified purchase and sales system was replaced by the contract system, state prices were fixed on the 70:30 ratio of quota and over-quota prices, and free markets and negotiated sales were opened up. The state system was thus still concerned to ensure stable supplies at controlled prices.

These price adjustments were, however, a negative signal to peasants. At the same time, the growth of TVEs and the diversification of production made grain less attractive to producers (discussed further below). The result was a period of stagnation and fluctuation in grain output. The state responded by enforcing the contracts to a greater degree and by increasing incentives to producers to grow grain. The economic austerity period after 1988 also cooled down the non-agricultural economy, and grain production began to increase again.

Against that background, significant changes in consumption and the shift to better quality and variety was leading to a change in the structure of demand. Direct grain consumption was declining and indirect consumption was rising. The significance of grain for many consumers was becoming less important, and more and more people were prepared to pay higher prices for quality food.

During this period, therefore, the level of state subsidies to the grain system began to grow substantially and embraced all sides, including producers, handlers and consumers. In the context of the consumption changes just mentioned, the decision was made to attempt a further stage in market reform.

1992 onwards : marketisation and retreat

The most recent round of reform was begun in 1991 and 1992 by increases in selling prices. These increases reduced the government subsidies to consumers. This was followed by calls to reform the grain bureaus, a decentralisation of grain management and a rapid spread of market liberalisation across the country. The aim was to 'decontrol the purchasing and marketing price of grain, to arouse the enthusiasm of grain producers - and especially the major grain producing areas - to produce more good quality grain and give full scope to these areas' capacity for grain production, so that there will be a rational regional division of labour'.[2]

[2] State Council, 'Decision on developing a high-yielding, high grade and efficient agricultural system', September 1992.

The optimism for reform was, however, dashed by a grain market crisis. Problems at this time included:

- continuous rises of grain prices, starting from rice;

- worsening barriers to internal trade

- rising concern about lack of control since state actions, such as the release of grain stock and issuing a price ceiling, had little effect on the increases in prices

- complaints from consumers on rising prices of grain, meat, and all other farm goods.

According to Lin Yifu et al (1996), the increases in prices since late 1993 were caused mainly by the increases in urban incomes and wages, associated with a capital investment boom in 1993 and 1994, and by the intervention from local governments in grain marketing. Others emphasise the influence of the structural change in China's grain supply on prices, namely, the reduction in output of indica rice in Southern China where the comparative advantage of grain production declined rapidly after the economic reform (Chen Xiwen, 1995). The rapid increases in grain prices after 1993 nevertheless sent a warning signal to the Chinese authorities who had considered the stable supply of grain at relatively cheap prices to urban population an important economic and political issue in China.

Controls over purchases were reintroduced, price management was strengthened again and mechanisms like the governor production responsibility system (see below) were introduced to encourage greater regional self-sufficiency.

In addition to the question of subsidies in the marketing system, to which we return below, another issue highlighted at this time was the availability of credit in the marketing system.

Commercial credit

One of the continuous problems of the grain system has been that of obtaining enough credit to pay the peasants. The problem of IOU's (*baitiao*) has arisen many times since the mid-1980s. Cheng Enjiang (1995) has shown that this has been the result of market distortions and the inconsistency of institutional reforms. State price rises and the growth in market and negotiated sales have increased the overall demand for commercial credit. The supply of credit through the Agricultural Bank and the grain bureaus has, however, been affected by the diversion of funds for other uses. Grain loans earn low returns and are not popular with the banks. The problems of the grain bureaus, in particular have been very important. It has used grain purchase funds for other investment, and it has a large accumulated bank debt for past grain handling which is the subject of dispute. The banks argue that these are commercial losses for which the grain bureaus bear responsibility. The bureaus argue that they are policy-induced and should be subsidised by the government. In effect the fact that the grain bureaus and the banks were not fully commercial agencies meant that they could pursue their own interests in seeking both profits and government subsidies. The result was loss of income by producers, misuse of funds, an increase in budget deficits and a slow-down in the formation of a rural credit market. The recent growth of the rural credit funds outside the banking system is an example of how, in the absence of a well-ordered rural credit market, a segmented credit market will grow to try to solve some of the problems of local credit supply.

Subsidies

In a situation where government management of a large proportion of marketing continues and low purchase prices mean producers face low incentives, the provision of budget subsidies becomes important to meet the government's target of maintaining high levels of self-sufficiency. Their role for producers has grown substantially since the late 1980s. The government also aims to protect consumers, especially those on low-incomes, by trying to keep selling prices stable. At the same time, the government has to subsidise the grain bureaus. Watson and Findlay (1995) underline the many problems these high levels of subsidy create. They generate competition between producers, handlers and consumers to obtain the highest benefits. By 1991, the subsidies had reached very high levels and were causing budgetary problems. The selling price reforms of 1991 and 1992 were intended to reduce that by removing consumer subsidies. The market reforms were aimed to eliminate subsidies in the handling systems. The retreat from the markets and the introduction of the governor responsibility system have, however, meant that subsidies have not yet entirely disappeared.

Each phase of market reform was thus followed by a crisis. These crises involved economic conflict between producers, handlers and consumers for the benefits of subsidies, and the drain on central government budgets created by the payment of those subsidies. We will see below how a response in the longer run to this issue was to relocate the responsibility for the payment of the subsidies to local governments.

Patterns of trade[3]

An important factor in the changes in the grain sector are the forces from the rest of the economy on the agricultural sector as a whole, and on the composition of agricultural output. Gross agricultural output grew at over 9 per cent per year in real terms in the reform period up to 1984 and at nearly 6 per cent per year thereafter. Agricultural output in total continued to grow although grain output growth slowed down. Contributing factors were the changes in relative prices for different crops and other agricultural products, which were induced, in the short term, by different rates of reform in marketing arrangements, and the reversion of land once used from grain to more suitable uses.

Other forces acting on agriculture are those from the growth in the whole economy and from the process of industrialisation. The accumulation of capital and its reinvestment in other sectors shifts the mix of output and draws some of the mobile factors of production out of agriculture.[4] Depending on the pace of technological change in agriculture the agriculture sector is under pressure to decline (relative to other sectors in a growing economy).[5]

The extent of the change in the opportunity cost of agricultural output varies between regions. As a result, the comparative advantage in agriculture changes between regions, which affects inter-regional trade patterns. These trends also have interesting implications for the mix of grain output and for China's international grain trade. The extent of the changes in grain specialisation and trade within China illustrate the significance of the processes of the change in the structure of the rest of the economy for the agriculture sector, including grain. They also illustrate the scope for gains from trade associated with specialisation within China, including within the agricultural sector.

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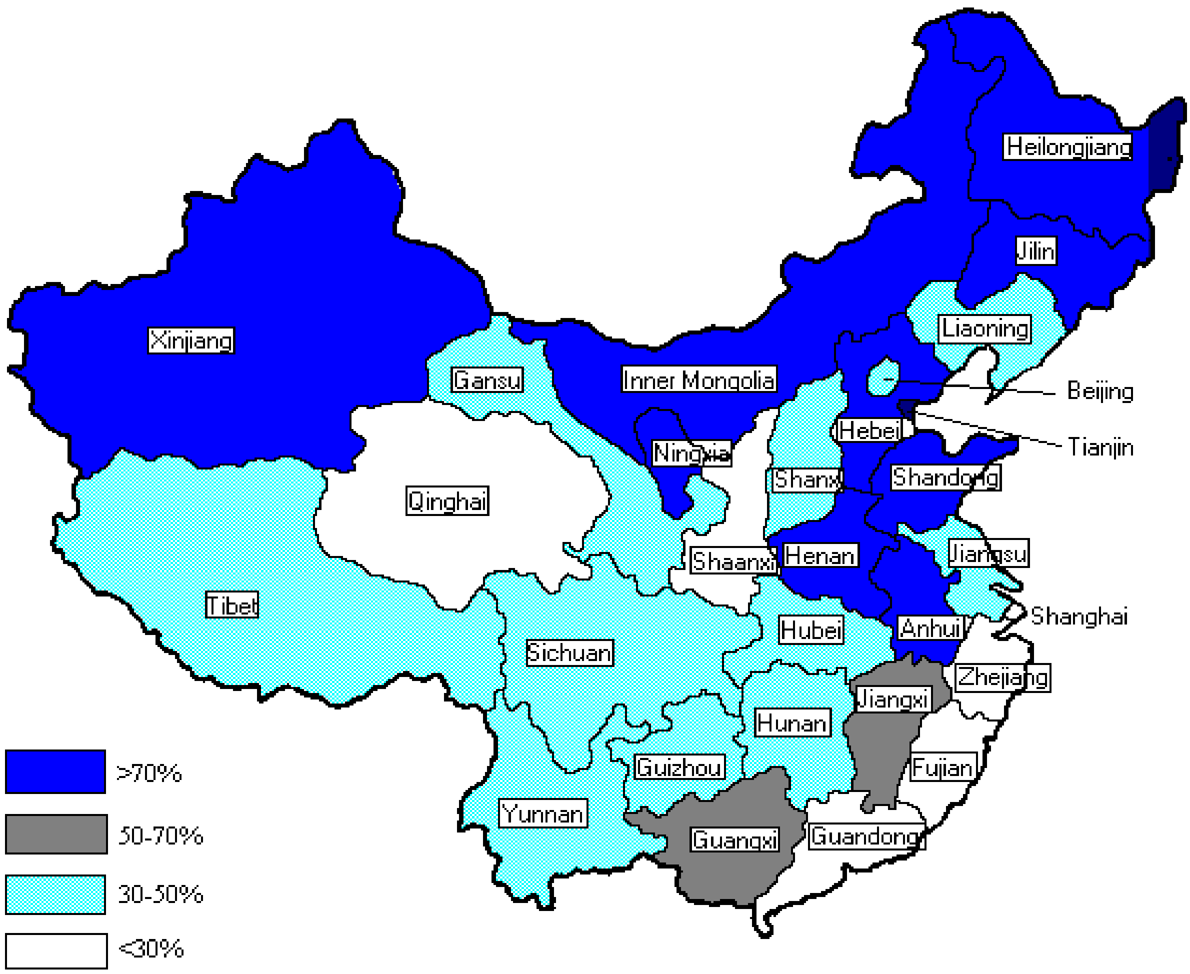
3 This section is based on Findlay (1996).

4 Findlay, Watson and Wu (1994) discuss the growth of the TVE sector in this context.

5 See Rozelle (1996) for a discussion of current issues in research and development in agriculture and also Anderson (1987) for discussion of forces of agricultural sector decline in association with economic growth.

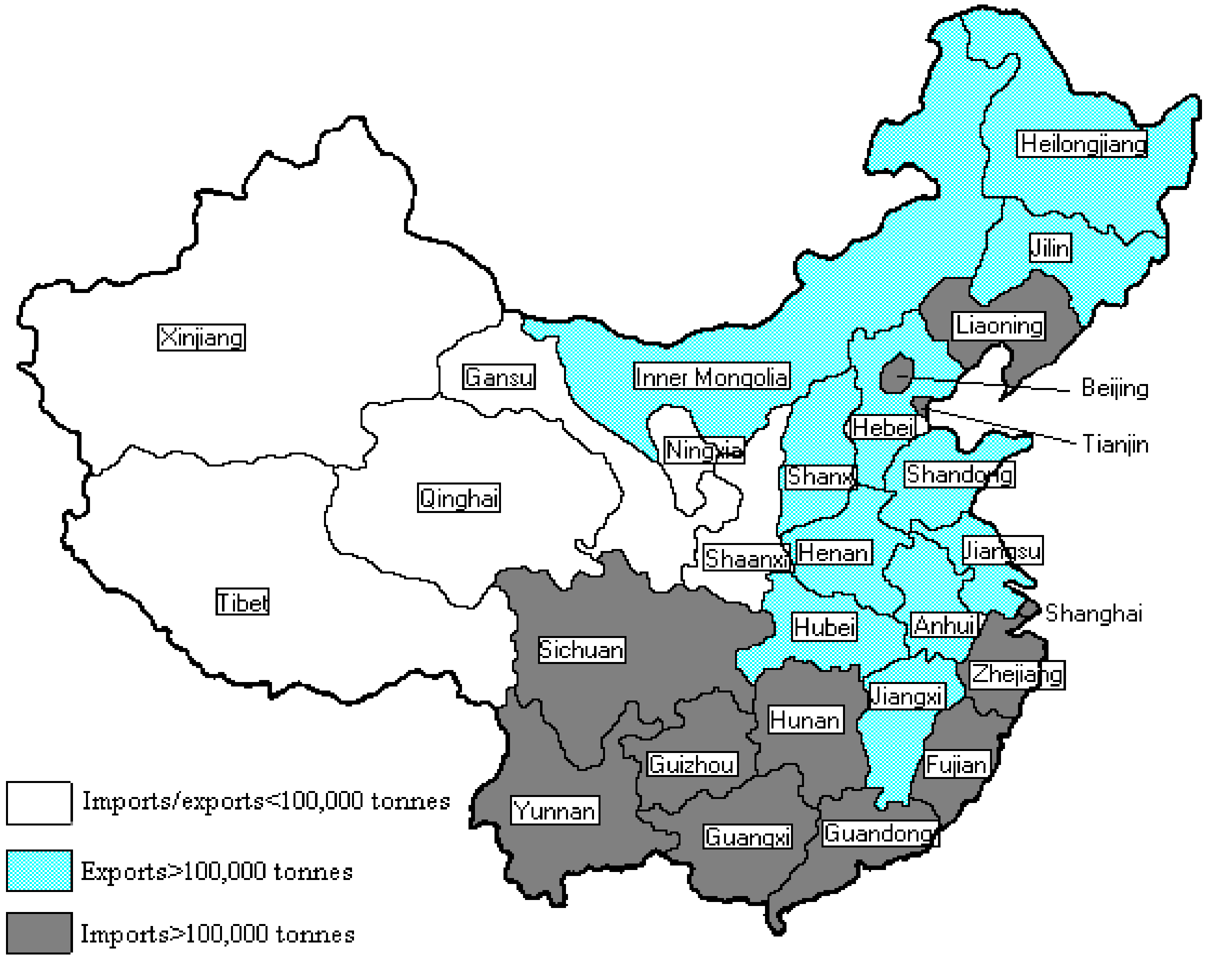
MAP 1: GRAIN OUTPUT GROWTH BY PROVINCES, 1978-1995



Source: Yang Hong, 1996a, updated

Yang Hong (1996a, b) has identified the changes in the location of grain production in China. She finds significant variations between regions in the rate of output growth. Map 1 shows the provinces classified by the rate of output growth to 1995. Clearly the faster rates of growth are concentrated in northern China. The areas where output is growing more rapidly are located in northern China. The growth in grain output since the start of the reform program and the early 1990s was over 70 percent in Inner Mongolia, Jilin, Heilongjiang, Ningxia and Xinjiang compared to the national average growth rate over the same period of just over 53 percent. The southern provinces of China remain relatively large in terms of total output but their share has declined.

MAP 2 GRAIN TRANSFERS BY PROVINCE, 1993

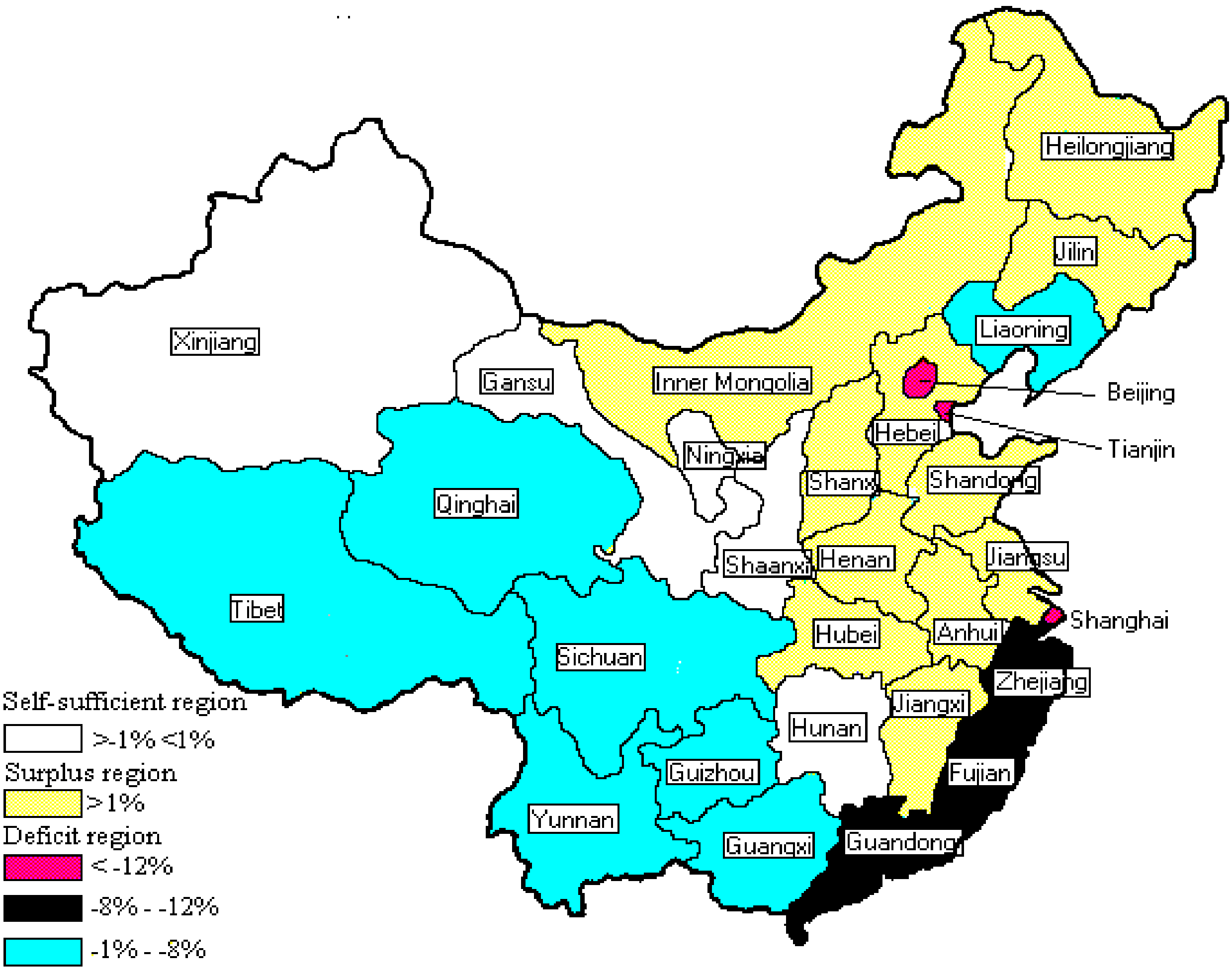


Source: Yang Hong, 1996a.

One important consequence has been a redirection in the patterns of trade. We can divide the country into different regions, eg Northeast, North, Northwest, Southeast, Southwest, and Middle China. Traditionally, grain flowed from the Northeast and the Southeast to the Southwest, the Northwest and sometimes to the North, while the middle was basically self sufficient. After the reforms, there was growth of output in the Northeast, the North, and to some extent in the Middle (see Map 1). There was lower growth in the Southeast. The implication was a redirection of trade towards the Southeast. Map 2 illustrates the new direction of the flow of grain. The larger net importers in absolute terms are now located in the southern part of China.

Map 3 shows the net transfers as a proportion of apparent consumption (production plus imports minus exports). The map illustrates more clearly the point that the main issue in the management of internal transactions is in the Southeast, where the comparative advantage declined the fastest. The faster growing and more rapidly industrialising southern provinces are losing their comparative advantage within China in grain production (see Yang Hong, 1996c, for empirical work on this process).

MAP 3: NET TRANSFERS AS A PERCENTAGE OF APPARENT CONSUMPTION, 1993



Source: Adapted from Yang Hong 1996a.

The composition of the national output of grain and of the grain traded within China is also changing. Maize, in which northern China has a comparative advantage, is now more important in both output, especially since the mid 1980s, and internal trade. In volume terms, maize now accounts for nearly a quarter of total grain output, compared to 18% in 1978.

Another implication, stressed by Yang Hong (1996b), is the greater exposure of the production of grain to volatility on the supply side. The share of national maize output in Heilongjiang, Jilin, Liaoning and Hebei has increased. Maize output is becoming more concentrated in those provinces which may expose maize supply to greater volatility, eg, as a consequence of some common shocks from the weather affecting all those provinces.

New patterns of specialisation and internal trade have created challenges for the domestic transport infrastructure. Yang Hong quotes some research published in China which suggests that constraints in that system have in the past led to international maize exports in preference to sale within China and have limited the extent of specialisation in maize production in those regions. Self sufficiency policy targets have reinforced this constraint on the extent of specialisation. But also the constraints from the infrastructure system have reinforced any concern at central government level about the risks of relying on the rest of China for grain supplies to deficit areas.

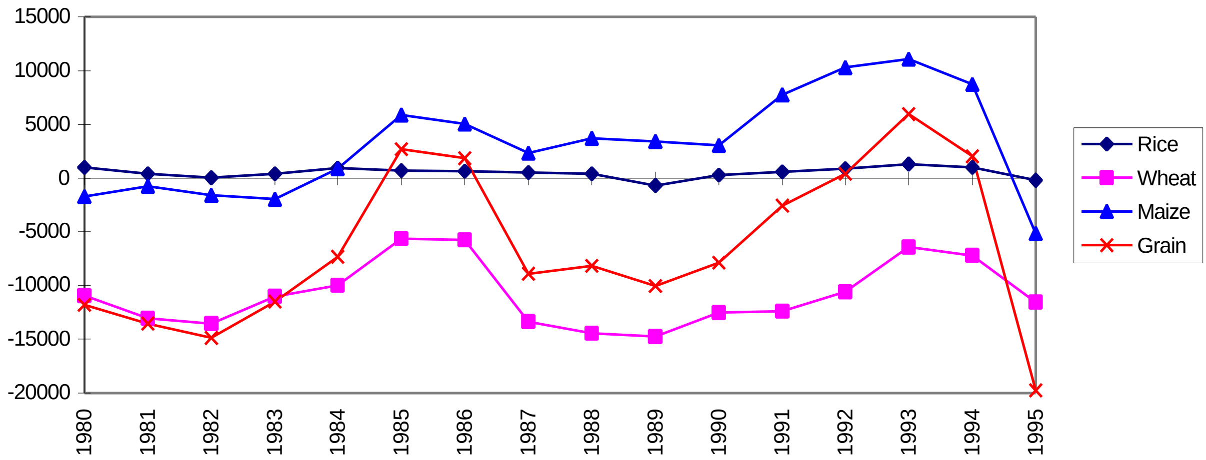
Yang Hong (1996d) has also examined the policy on the so-called "grain base areas". The core idea of this policy was to concentrate grain production in areas which have a comparative advantage. But the development of commodity grain base areas has been negatively affected by the impact of government-controls of prices and inter-regional trade. This concentration is supported by government subsidies to producers in return for agreements to sell grain to the state system. The problem has been that contract grain prices controls, differentials in prices and taxes between regions caused by the decentralisation of management to local areas, and the low relative prices for contract grains have created a situation where the grain producing areas are unable to generate a reasonable return. The base areas are relatively poor, and peasant incentives are low. Government revenues are also therefore limited. The base areas are thus constrained in developing a key role in the production and marketing system.

Finally it should be noted that the grain trade in China is also affected by trends in the composition of demand. Demand composition is changing but possibly more slowly than that composition of output. This difference has led to issues associated with changes in relative prices, for example, the rising price of rice in the first half of the 1990s.

International trade

The rising domestic prices for grain in China in 1994 and 1995 correspond to the rise in net exports in that period which is illustrated in Figure 1. Throughout the period in the chart, China has been a net importer of wheat. Since the mid 1980s, it has been a net exporter of maize. It is approximately self sufficient in rice. The growth in maize exports is also related to the trends in domestic output and consumption, where in the last few years, the growth in domestic demand for maize stated to catch up with the growth in output. The chart highlights the growth of imports in 1995.

Figure 1: China's net grain exports ('000 tonnes, 1980-1995



Source: Customs statistics

In terms of grain trade liberalisation, Chinese policy makers have been concerned mainly about food security and incomes of grain producers, especially those in relatively poor areas of China (Du Xiaohong et al 1996).

In their review of the food security issue, Findlay and Watson (1996) examine the data on China's role in world wheat and rice trade. They report that import share of wheat consumption in China has fluctuated since the late 1980s from a high of nearly 16 percent to low of just over 4 percent and that China's share of world wheat trade has moved in a similar pattern. Its share of world output (net of its own production) has however never exceeded 4 percent in this period. On the other hand, the world rice market is relatively 'thin' with only a small trade volume relative to output. China's position has however swung from net exports to net imports and at one point (1993-94) its imports accounted for nearly 10 per cent of world rice trade. However the importance of its trade in world rice output (net of its output) is small and the role of imports in domestic rice consumption is also small. These sorts of assessments, as well as the likely market responses to a rise in Chinese demand, challenge the concern held in China, at least at central government level, about the scope for using the world market for supply security objectives.

We now turn to the question of how the inter-regional transfers of grain were organised within this context, that is, the experience to date of the development of the marketing system, and the impact of the intersectoral forces on patterns of trade within China. Our interest here is the possibilities for intervention created by the new institutional arrangements used to manage the internal transactions.

Local responsibility for grain production and marketing

Inter-regional grain transfers

Before the reforms in 1993, there was a dual system for the inter-provincial grain trade in China: transfer at planned prices (lower prices, planned transfer) and transfer at negotiated prices (market transfer). The provincial governments were basically responsible for the supply of grain in local areas given the following two conditions:

(1) each province was given a quota for inter-provincial transfer at planned prices. Grain surplus provinces usually had a quota for the outflow of grain from these provinces at state set prices, and grain deficit provinces had a quota for the inflow of grain at state prices. Consequently, grain deficit provinces (with grain inflows) benefited from the planned grain transfers.

(2) after fulfilling the quota for planned grain transfers, provincial governments could purchase grain at market, or near market, prices from other provinces. (*Almanac of China's Commerce,* 1992, 1993).

This system was not particularly hostile to major grain producing provinces. But these provinces could suffer big financial losses with misjudgment. For example, some local governments blocked the markets and purchased grain from producers at low prices. Their aim was to speculate on subsequent increases in market grain prices in the rest of China. But after 1989, with consecutive bumper harvests and low market prices for grain, these provinces faced financial problems.

Compared with the reforms in the planned purchases and sales of grain, the reform to the inter-provincial transfer of grain was perhaps less visible, but not less significant. Following the reform in 1993, the major grain producing provinces in China were no longer required to transfer their grain to grain deficit provinces (and metropolitan cities) at lower than market prices. Since then, the inter-provincial trade has been undertaken mainly at market prices.

One objective of the reform was to encourage the local governments and producers in both grain deficit and surplus areas to produce more grain, and more importantly, to let the local governments to become more responsible for the grain supply in the local areas. Grain bureaus and local governments in major grain producing provinces were still able to make profits, possibly even more than before, by procuring locally produced grain at low prices (using the retained local powers of procurement) and selling it to grain-deficit areas at market prices (under the new rules applying to inter-regional transfers).

This local responsibility system for grain supply was consistent with the tax reforms in 1994. After the separation of the budget revenues and outlays between the central and local governments, local governments in China were required to pay for subsides in grain production and marketing in local areas. The motivations, detail and implications of these reforms are reviewed by Findlay, Wu and Watson (1995).

At this time, the central government focused its financial resources on the establishment of risk funds to buy grain stocks, to be used in an effort to stabilise grain market prices. In fact, both the central and local governments have been required to establish risk funds for grain stocks. Field work indicates that according to the central policy, local governments have been ordered to contribute 1.5 Rmb counterpart funds for every 1.0 Rmb contributed by the central government.

A further financial change at this time was that, following the establishment of the Agricultural Development Bank of China (ADBC) in 1994, the ADBC became responsible for the supply of finance for plan grain purchases and storage. The central government also attempted to settle the overdue loans from the grain bureaus to the financial institutions in the early 1990s. Interest on overdue loans for policy operations by the grain bureau was paid by the central budget, on the condition that all the overdue loans be paid by the grain bureau within five years.

These changes were followed by the increases in grain prices after late 1993 which caused great concern among the central authorities. As we noted above, a number of measures were taken to counter the rise in grain prices, such as the release of grain stocks and regulation of grain prices for grain sold through grain bureaus, but none of these measures were effective. Finally, in 1995, the provincial governor's responsibility system was introduced by the central government.

Provincial governor's responsibility system

Following the crises in the grain market in 1993 and 1994, and in the context of the current fiscal and financial relations between the centre and the provinces, the challenge for the centre was how it could accelerate the rate of growth of output in the Southeast. As we saw earlier, output growth had slowed in that region which had become a net importer. In that role, it had benefited from the cheap food and materials at state prices from inland provinces in the past, under the old inter-regional transfer system. The previous access of this region to cheap grain, at the same time its income was rising rapidly, had caused much resentment from the major grain producing provinces. Following the reforms in 1993, the inland grain producers (including the Northeast) had just started to benefit from higher prices. The provincial governor's responsibility system made that more difficult.

The essence of the provincial governor's responsibility system (PGRS) was to make governors responsible for balancing the supply of and demand for grain in their province. That includes stabilising sown areas, raising yields, establishing local stocks as required and managing inter-provincial transfers. Officials therefore stress that the system means a devolution of responsibility for transfers within China to a lower level which is consistent with the development of the grain market. However, as we argue below, the actual focus of the PGRS may have been narrower than that.

A component of the policy was to ask local governments in relatively richer and industrialised areas, where grain output growth has slowed as we explained above, to subsidise grain production and marketing so as to keep the price of grain lower in the local markets. The policy, according to some analysts, was based on the observation that if prices in relatively richer Southern China were relatively low and stable, then grain price and supply would be stable in the national level. This aspect of the policy dealt with the centre's concern about higher prices in that area spreading to the rest of China.

Field work in China revealed that associated with the PGRS were a number of other policies were also issued by the central government in 1995. In addition to 50 million tons of grain procurement at plan prices, local governments and grain bureau were required to purchase 40 million tons of grain at market prices from grain producers. Moreover, procured grain should be sold only to lower income urban residents, not to all urban residents. The target group is stressed. The government, however, is caught in a dilemma, since on the one hand, it may want to protect grain producers in poor provinces, and on the other hand, it wants to supply grain to low income urban residents at relatively low grain prices. A more targeted policy would help resolve this dilemma but the legal and institutional framework in China makes it difficult for the government distribution system to reach the right people.

Work in progress on rice market reform by Cheng Enjiang based on a survey of grain producing households in China is showing the effects of PGRS. In 1995 grain producers in Guangdong were paid higher plan and market prices and had lower taxes in order to encourage them to produce grain. For them, however, producing grain was less profitable than producing something else. In contrast peasants in Jiangxi received lower prices, paid higher taxes and had to pay heavy transport levies to shift grain to the Guangdong market, where they might have earned a higher profit. The barriers to inter-regional trade and the complexity of different local prices and taxes were thus undermining the growth of market relationships.

This field work reveals the continuing significance of barriers to trade between the provinces. The exporting provinces can restrict volumes in the long distance trade through administrative controls or through taxes which are applied in the congested transport infrastructure (as discussed above). Sometimes border barriers are also applied (eg road blocks), although these are easier to evade.

Importing provinces could adopt the same policies, although with greater difficulty than exporters. While exporters may use these sorts of barriers, importing provinces under the PGRS are more likely to apply subsidies to local producers. Furthermore these subsidies are more likely to be related to inputs to grain production. Output subsidies could also be exploited by local producers (eg by importing grain from other regions).

The likely attitude of the grain exporting provinces to the PGRS seems clear. They lose from any policy which reduces their export prices, for example, as a consequence of a drop in demand from their previous customers.

The high income importers may not favour the scheme either. They are now obliged by the centre to follow a strategy which is relatively more costly than that used before. It is more costly in terms of loss of the gains from specialisation and trade. The coastal provinces have had long experience in the internal trade in grain and may be less concerned about supply security than policy makers at the Centre.

Low income importers, on whom the centre has applied less pressure to meet the targets of the PGRS and who were not the focus of its implementation, may gain from lower domestic market prices than otherwise for the protected grains.

Current studies of China's grain trade show that, since 1993, market prices of grain in China have risen substantially and approached world prices. This suggests an increased integration between Chinese and international grain markets (Cheng 1994; Cheng and Findlay 1995). It has been argued that, with the convergence of Chinese and world grain prices, China has come to a turning where it risks the shift from a policy of taxing to assisting grain producers (Garnaut and Huang 1995).

One hypothesis is that the PGRS signals the institutional arrangements for this change. However the domestic political forces in that direction, which are observed in other East Asian economies, are not so strong at this stage in China. Farmer groups are yet to be the strong political force they are elsewhere. Field work experience, and the observation of the growth of the TVE sector in rural China, indicates that alternative employment opportunities are many and nearby. Costs of adjustment are therefore smaller. And as some scholars are now stressing (eg Lu Feng, 1996), farmers also have alternative competitive uses of their land, eg, for fruit and vegetable production. This offsets concerns the effects of structural change in agriculture on incomes of households which lack the mobility to seek employment outside agriculture.

At this point, it is important to clarify the management of international trade in grain under this new policy. Our current understanding of these arrangements is the following. The central government continues to set a quota on grain imports. They do this in advance of the period to which the quota applies and the assessment is based on prices at the time the assessment is made and on projections of prices in the period of the imports. The bulk of this quota is retained at central level (eg 15 mt in 1995). Some is passed to provincial levels (eg 5 mt) and some retained by trading companies to supply grain to the processing sector (eg 1.5 mt). Quotas allocated to provincial levels can be transferred. Provincial level governments can use that quota if they have foreign exchange required. Otherwise they must petition the centre for an allocation from the central quota. These quantitative constraints on imports mean that domestic prices in China can move away from world prices, although depending on the management of the quota that divergence might be corrected in later periods.

Local budget implications

The implementation of the new system in the middle 1990s has led to some interesting developments in terms of subsidies in grain production and marketing in the coastal provinces of China.

First, due to the variations in the opportunity cost for grain production within a province, it is difficult for a province to set a uniform subsidy level for all grain producers in a province. Consequently, all levels of administration, from the province, down to the prefecture and county governments are required to give subsidies for grain production in the local area. The township governments and village administrations are also required to subsidise grain production with their profits from TVEs. The first implication of this development is that identifying the extent of the subsidies paid is difficult because of the number of levels of government involved.

As the richer areas have more economic resources, and as opportunity costs for grain production in richer areas are higher, the system tends to result in the situation where the level of grain subsidy become positively correlated with the level of local incomes.

Second, some local governments have tried to shift the burden, or part of the burden, to individual farm households by forcing them to grow more grain. They do this by setting the sown area for grain production (with heavy penalties for not complying). To some extent then, the application of these quotas means shift the burden of subsidising production from local governments to the farmers themselves. These households have to produce grain at high cost, or buy grain from the markets, using incomes from elsewhere. But the PGRS, to its credit, actually explicitly precludes the use of administrative means, application of which is bound to cause significant farmer resentment and reaction. So the application of administrative means at farm level is strictly not consistent with the policy.

Of the richer southeast coastal provinces, Jiangsu is the one which has maintained self-sufficiency in grain after the second stage of grain market reforms. The basic self-sufficiency in grain production has been maintained by huge inputs from local governments, especially those in the more developed areas of the province. From 1978 to 1993, about 9 billion Rmb was transferred from TVEs to agricultural production in the province, mainly to grain production. Every year, the province spend about 100 billion Rmb subsidies on agriculture, using the profits from TVEs and local budget outlays. These funds have been invested mainly in the 12 counties of the three prefectures in southern Jiangsu Province, where the comparative advantage for grain production declined the fastest (Lin Chenguang 1996, Cheng Enjiang 1993).

Trade implications

The changes in domestic marketing since the middle 1990s have important implications for China's grain trade.

The increases in output in richer grain-deficit areas and the possible decline in output in major grain-surplus areas (a consequence of any price effect) means that the volume of domestic trade could be reduced. However the pattern of this change requires further empirical work, since the mix of crops differs between these regions. The impact in the short run, however, is likely to be in markets for rice the output of which is subsidised by southern provincial governments. There may be some effects on wheat output, as a consequence of substitution on the supply side in rice growing areas, although that also depends on the assistance provided to wheat production.

The effects on maize output are uncertain but less likely to be significant. The introduction of the PGRS coincided with a ban on maize exports. The maize crop in 1996 has grown substantially, but the transport constraints mean that it is very difficult to transfer the grain southwards to the large meat production areas where it is needed. There is now reported to be a substantial price differential for maize between the Northeast and the South. One possible outcome is that maize producers may respond by reducing production. Another is that restrictions on maize exports may be lifted. Meanwhile the governors in the South face the choice between importing or buying from the Northeast in order to balance their local supplies.

Conclusion

The current internal grain marketing policy has shifted responsibility for grain production to local levels. A motivation for this change was to deal with some budgetary issues associated with previous policies. In the process, the central government has introduced a new set of policies in response to its concerns about supply security. These concerns have been highlighted by the structural change occurring in southern China.

Intervention has focussed on ways to raise the level of supply security within the domestic market. This is because of the evaluation that the world market cannot be relied upon to meet China's supply security targets. We reported, but also questioned, this view. Further empirical work on the world market responses to plausible supply side shocks in China, and on the extent of the gains to China from specialisation and trade in grain as well as other foods with the rest of the world, would contribute to the analysis of this issue. Meanwhile, China's international trade in grain continues to be managed centrally and by the application of quotas.

Devolution of power to local levels, which is a component of the current policy regime, is consistent with the development of a national market. Other positive features of the policy include a ruling against the use of administrative methods of procurement at farm level. A feature of the outcome also appears to be the use of subsidies for production, rather than protection against imports from the rest of China, in deficit provinces.

On the other hand, issues remain about quantitative restrictions on exports from surplus provinces. An apparatus has been created which runs the risk of legitimising intervention in internal trade and inhibiting the development of a national market. Ironically, an integrated domestic market is a more efficient way of meeting the central government's concerns about supply security. The structures created by the central government on the other hand make more likely the situation which it fears. The policy also does little to tackle a major remaining issue in domestic marketing reform which is the role and function of the grain bureaus. Its effect is more likely to be to reinforce their position.

What are the implications of this policy regime?

The assistance given to grain producers in this scenario would vary from one region to another. If the policy persists, grain producers in the coastal provinces could become more highly subsidised by local governments. In major grain surplus regions, grain producers could continue to be taxed. This could be in response to the policies adopted by the importing provinces to subsidise their own production, in response to concerns about the levels of local prices which might be affected by the buying strategies of outside provinces, and in the presence of sustained market power by local grain bureaus who manage the long distance trade. The outcome depends on the weights placed on local supply security and the pursuit of farmer, compared to marketing system, interests in these areas.

The international trade implications of this outcome will vary between crops. For reasons of recent history, and because of the location of the rice growing areas in the rapidly industrialising provinces, rice may be the crop most affected by subsidies. Rice imports are likely to be lower than otherwise. Wheat imports could be higher as a consequence of substitution on the supply side in rice growing regions, depending on the assistance given to wheat production. Maize output and trade are less likely to be affected directly by the application of the PGRS in grain deficit provinces.

A further implication of this analysis is that the system is highly unlikely to be transparent. However, measuring the levels of assistance (positive or negative) by crop and by province, and then assessing the trade implications, is an important topic for further work. That work would also be useful to assess the costs and benefits of the policy by type of province and therefore to answer the question of whether this regime is likely to be sustained.

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