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Chapter 8:
An Assessment of the Economic Effects of COFCO

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Chapter 8:**An Assessment of the Economic Effects of COFCO*****Introduction***

State trading enterprises (STEs) are widely used by many significant exporters and importers of agricultural commodities including, inter alia, Canada, Australia, Japan, South Korea and India, as well as by many other, though smaller, participants in agricultural trade. Added to this list is China which has a long history in the use of state trading to manage both agricultural imports and exports with the aim of meeting the domestic objectives of the Chinese government. In this context, seen as an instrument of agricultural policy, state trading is no different from the use of alternative measures of intervention in the agricultural sector that have been pursued by most countries around the world, including OECD countries. However, in recent years, state trading has been placed on the agenda of the current World Trade Organization (WTO) Doha Round negotiations with an explicit attempt made to deal with state trading enterprises in exporting countries. In addition, across many countries, the role of state trading has been part of the domestic reform agenda with de-regulation of STEs being pursued in both developed and developing countries. However, in most cases, the de-regulation of state trading has involved reducing the role that STEs play in the domestic and international markets rather than removing them outright. Examples of this process of (partial) de-regulation include Australia, Japan and Indonesia among others.

It is in this overall context that we analyze the role of state trading in China. State trading, principally in the form of the China National Cereals, Oils and Foodstuffs Import and Export Company (COFCO), has been the main mechanism through which the State Development and Planning Commission (SDPC) sought to achieve a balance between supply and demand in domestic markets for many agricultural commodities. While the state also played an important role in the domestic procurement and marketing of domestically produced commodities, with respect to international markets, COFCO had exclusive rights to import grains (wheat, maize and rice) and, to a lesser extent, vegetable oils (soybean, palm, canola and mustard) and sugar, and it also had exclusive rights over exports of rice, maize and soybeans.

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However, reflecting developments elsewhere, the role of state trading in China has both changed and, with China's accession to the WTO in 2001, the pressure for further reform has also increased. First, on the domestic front, since the mid-1990s, the role of the state in the procurement and marketing of key agricultural commodities has undergone important reforms that have allowed increased competition in the domestic market. As we discuss below, developments in the domestic market are important for assessing the impact of state trading on international markets. Second, while domestic de-regulation largely left the exclusive rights of COFCO over imports and exports untouched, the role of state trading in international markets was a key issue in China's accession to the WTO in 2001. Although the Accession Protocol confirmed the continuing existence of COFCO, part of the negotiations on China's accession were aimed largely at tempering the impact of COFCO on world markets. By and large, the principal means to achieve this outcome was to permit a greater role for private firms to compete over imports by restricting the share of the TRQ that could be accounted for by COFCO.

In general terms, the overall concern with the use of state trading enterprises as a mechanism of government policy, is two-fold. First, from an international perspective, state trading acts in a manner similar to other but more transparent policy instruments in that it inhibits market access and unfairly increases competition on export markets. In other words, STEs act in a manner similar to import tariffs and export subsidies. Second, with respect to the issue of de-regulation, increasing the role of the private sector is perceived to be desirable as a means to increase welfare. Put differently, even if the STE remains in some form and even if it retains its exclusive rights in some markets (say for example over imports while it is excluded from procurement in the domestic market), the increased competitiveness in the procurement and marketing of agricultural commodities would be welfare enhancing. By and large, research that has formally addressed these issues has been thin, even though they are important issues in the context of the WTO reforms and domestically on de-regulation in both developed countries (e.g. Australia and Japan) and developing/emerging economies (e.g. India and China). In a series of recent papers, we have analyzed several of these issues covering both the trade distorting aspects of STEs and the welfare consequences of the partial de-regulation of state trading.

The purpose of this chapter is to analyze the potential impact of COFCO on agricultural markets by drawing on this recent research. The chapter is organized as follows. First, we summarize the key factors that determine the trade distorting effect of STEs on international markets. We also analyze the possibility that partial de-regulation of state trading enterprises may not necessarily be welfare enhancing. Second, we review the major developments relating to the role of the state in domestic markets and trade covering both the major domestic reforms since the late 1990s and the accession of China to the WTO in 2001. Third, we draw on more recent research to evaluate the potential impact of COFCO on international markets. Finally, we summarize and conclude.

Recent Research on the Economic Effects of STEs

Despite the prominent role played by STEs in agricultural trade, the analysis of state trading beyond describing and summarizing the extent of state trading (or the focus on specific STEs such as the Canadian Wheat Board) is largely underdeveloped. As such, even though state trading as a negotiating issue has arisen in the current WTO round, and de-regulation of state marketing authorities has been undertaken across many (particularly developing) countries and continues to be part of the domestic debate on de-regulation, few insights have emerged from academic research on the factors that are likely to determine the trade distorting effect of STEs or the consequences of partial reform. In a series of articles, we have investigated the potential consequences of STEs, covering both importing/exporting and developed/developing countries and we draw upon this research as a means to provide insights into the potential consequences of COFCO on world markets and the likely effects of reform (McCorriston and MacLaren, 2005a,b; 2007a,b,c).

State trading is essentially the manipulation of market structure to varying degrees to meet some (or a range of) government objective(s). Such manipulation in an open economy context clearly affects exporters who wish to gain market access to importing countries or who may face 'unfair' competition in export markets. Underlying our focus on the potential impact of state trading on world markets, we measure the trade distorting effect that arises from this manipulation of market structure. The idea of a trade distorting equivalent measure can be related to earlier writing on state trading (notably Meade, 1955; and Lloyd, 1982) and to the focus of policymakers who draw the parallel that state trading acts in a manner similar to other more obvious trade distorting instruments and, therefore, they are a legitimate concern of trade

negotiators in the WTO. In light of this, we define the trade distorting equivalents of an STE as follows. For an importing country, the tariff equivalent of the STE is the tariff that would have to be paid to the given number of private firms (n) to achieve the same level of imports that arises with the STE. For an export country, the trade distorting effect of the STE is the export subsidy that would have to be paid to the private firms (n) that would achieve the same level of exports as that by the STE. These tariff and subsidy equivalent effects can be positive or negative and we highlight below the factors that will likely determine the sign as well as the magnitude of these effects. Finally, this definition accords with the focus of the WTO definition of STEs that relates to the trade effect that arises from them. Specifically, to re-iterate the Understanding on the Interpretation of Article XVII (of GATT 1994) on STEs:

‘Governmental and non-governmental enterprises, including marketing boards, which have been granted exclusive or special rights or privileges, including statutory or constitutional powers, in the exercise of which they influence through their purchases or sales the level or direction of imports or exports’ (WTO, 1995:25).

There are two key points to note about this definition and how they relate to our framework. First, the focus is on exclusive rights not ownership – the designation of these exclusive rights can vary markedly across countries and commodity regimes. Second, it is the potential impact of these exclusive rights on market access and export competition that raises concerns about STEs (at least in the WTO context).¹

There are three key advantages that arise from these definitions of the trade distorting effects of STEs and the framework that is used to measure them. First, by focusing on the trade distorting effect, we have a readily identifiable measure of the potential effect of any particular STE. Second, the framework used is sufficiently flexible to allow different perceptions of the underlying benchmark to be addressed in a single model. For example, one of the many of the arguments used for sustaining the use of STEs is that the state marketing authority will be replaced by a small number of private firms that can exert oligopsonistic/oligopolistic power on suppliers and consumers. Indeed this has been the outcome that has arisen after reform in many developing countries. Alternatively, others may argue that the presence of the STE prohibits the emergence of a competitive private sector and therefore that sustaining the use of

¹ Of course, from the perspective of issues of domestic de-regulation, the concern about STEs may relate to (i) efficiency of the STE relative to the role of private firms and/or (ii) the potential impact of the STE on re-distribution between interests groups or (iii) the use of the STE to raise much needed government revenue.

the STE damages both domestic producers and consumers alike. We can be rather neutral on the issue of the underlying benchmark but allow it to account for different perceptions of the non-STE environments while addressing the trade distorting effect of STEs.

Third, an important point to remember about the STE landscape is that STEs are characterized by their heterogeneity. STEs not only differ in terms of geography (covering both developed and developing/emerging economies), agricultural importers as well as exporters, but also in terms of the exclusive rights that apply to them (see WTO definition above). In some cases, STEs have exclusive rights over domestic procurement and sales as well as trade; in other cases, they may co-exist with private firms at least in some segment of the market. The framework that we have used can be employed to account for various patterns of exclusive rights that apply to STEs. Drawing on this research, we summarize briefly the key factors that will likely determine the trade distorting effect of STEs, both on the export and import side of world trade.

The Competitiveness of the Underlying Benchmark: For simplicity, imagine an export country with a small number of private firms, greater than one, that can procure from domestic suppliers, and then sell the commodity on to domestic consumers and to the export market. In this case, the private firms can exert some degree of market power vis-à-vis consumers and buying power vis-à-vis farmers. But against this, and assuming the country to be 'large', they may not be able to take full advantage of the potential to price discriminate between the domestic and international markets which would be more effective with a single firm. Suppose now that an STE is imposed in this country and assume for present purposes that this STE has monopoly/monopsony rights in both the domestic and export market and it is profit maximizing. In this context, the STE can exert greater market power against both domestic producers and consumers and can more effectively price discriminate between the domestic and export markets. Comparing the two cases, domestic sales go down and domestic consumers pay higher prices. Whether exports increase will depend on the effect of the single firm in the procurement market and the allocation of this procurement between the domestic and export markets. If the impact of the STE is to reduce (increase) export sales, then its effect is equivalent to the case where the private firms are subject to an export tax (subsidy).

Alternatively, suppose that the initial benchmark is characterized by a large number of private firms. Here, the firms can neither exert market power in the domestic market nor price

discriminate between the domestic and export market. If an STE is now imposed, the move from a competitive market to monopoly/monopsony will increase the degree of market power in the domestic market and provide more effective price discrimination between the domestic and export markets. However, the greater ability to price discriminate has to be outweighed by lower procurement in the domestic market. While the private firms cannot exert buying power, their procurement of the commodity will lead to larger export sales; the STE can exert buying power, but lower procurement may reduce export sales. So, the effect of the STE may be equivalent to an export subsidy or a tax, the effect which arises being contingent on various parameters of the market. However, this comparison is restricted to the case of a profit maximizing STE. But as we note below, the size of this effect also depends on the objectives of the STE which may not necessarily be to maximize profits.

An analogous case carries over to the import country. However, in this case, the STE is more capable of fully exploiting the potential to price discriminate in the procurement of agricultural commodities between the domestic and import markets where in the latter market it can more effectively exploit the country's terms of trade effects assuming once again that the country is 'large'. However, as above, the trade distorting effect (in this case, the tariff equivalent) will depend on the marginal effect of the STE, i.e., relative to the characteristics of the benchmark that one would expect to emerge if the STE did not exist. But unless the underlying benchmark was characterized by a single private firm (in which case the marginal effect of the STE would be zero), the probable outcome is that the STE is equivalent to an import tariff. But this representation is too simplistic and the trade distorting effect of STEs will also depend on other factors that arise as we alter this simple model.

The Nature of Exclusive Rights: In the above example, the STEs have rights to operate exclusively in both the domestic and the import/export market. But this is only true of some STEs. In many cases, the exclusive rights of the STE apply only to the export or import market while the domestic market is characterized by the existence of private firms (whether in coexistence with the STE or not). This characterization has an important bearing on the outcome. For example, in the export case, the STE cannot price discriminate between the domestic and export market while, in the import case, the STE can only exploit its market power vis-à-vis purchases from the world market. This affects not only the size of the trade distorting effect that arises from the STE but it may even lead to a change in the sign of the trade

distorting effect, i.e., the STE may be equivalent to an export tax or import subsidy. In fully addressing the size and sign of the trade distorting effect of any specific STE, the important point is that in capturing the nature of exclusive rights that apply to the STE, full account has to be taken of the interactions between the domestic and import/export markets, and the role of exclusive rights that apply (and therein the role of the private sector that may be allowed to coexist with the STE).

The Objectives of the STE: Essentially STEs are instruments of government policy that are part of a package of measures used to meet the overall objectives of the government. For example, and in fairly simplistic terms, in developed countries, the overall aim of government may be to increase the incomes of producers, while in developing/emerging economies, it may be to promote food security for consumers. In the context of state trading, the STE, even though it may be a single entity in the market, may not necessarily aim to maximize profits. This difference from a private firm is important because, while we can reasonably assume that private firms aim to maximize profits, the STE may maximize a (weighted) social welfare function where the weights reflect the overall bias of government policy towards domestic producers/consumers. This objective has an important bearing on the trade distorting effect of STEs since the relative weights on producer and consumer welfare will influence how much it procures and sells on the domestic market and hence its capability in 'fully' price discriminating between the domestic and world markets and/or exploiting its terms of trade effects. So, for example, in the export case with exclusive rights on both the domestic and export markets, if we have a producer surplus maximizing STE, it will procure more from the domestic agricultural sector compared with a small number of private firms. Since it procures more but is still biased against the interests of domestic consumers, it will export relatively more to the world market.

The combination of exclusive rights and the bias in the welfare function towards producers leads the STE to export 'significantly' more to the world market. In this case, the export subsidy equivalent will be considerably higher relative to an uncompetitive benchmark. However, as the number of private firms in the benchmark increases, the export subsidy equivalent will fall as the higher amount of domestically procured output tends to the same level that a 'high' number of domestic firms would procure. Taken together, the important point to note here is that it is not just the number of entities that compete in the market that matters but also differences in the objectives between private firms and the STE. The departure from the sole

motivation to maximize profits has an important bearing on the trade distorting effects of an STE.

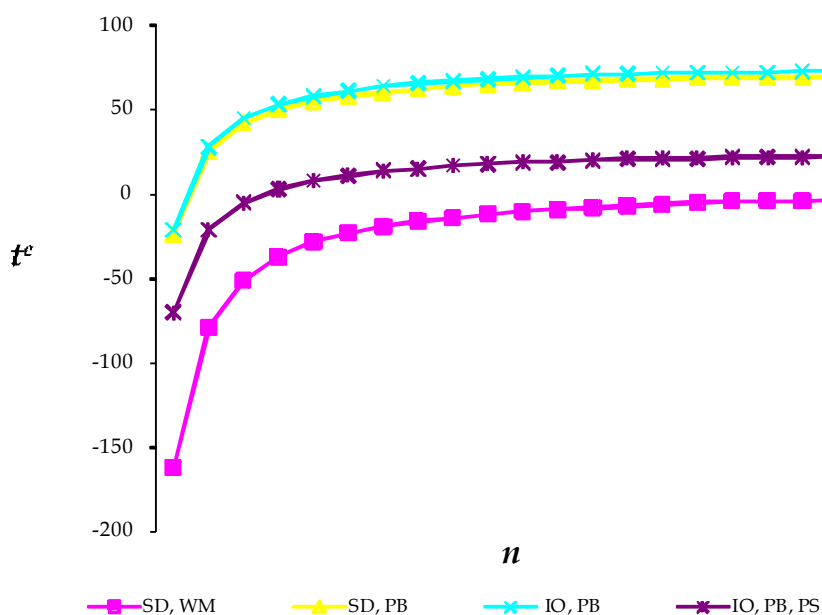
State Trading and Other Instruments of Government Policy: Governments use an array of instruments to meet their objectives of which state trading may be only one. Indeed, reflecting the concerns associated with state trading, while economists are quite capable of measuring the distortions associated with more traditional policy instruments, state trading is less transparent and its effects more difficult to measure. But yet the effect of state trading depends on the interaction within this array of policy instruments. For example, if the government uses a floor or guaranteed price to support farmers' incomes, this has a bearing on the trade distorting effect of an STE. To see this, assume we have the import country case, and that in the private sector benchmark, there are a small number of private firms. These firms have the potential to exploit producers. However, if the government employs a floor price, this essentially removes (or, more accurately, diminishes) the possibility of firms exerting market power. Thus the marginal effect of the STE (and hence the measure of the trade distorting effect that arises from this) will depend on what other instruments the government is employing. If the floor price also applies in the state trading environment, this too will affect the outcome as in this case, it raises the STE's procurement costs and its ability to price discriminate between the domestic and export/import markets. In sum, it is not just the competitiveness of the underlying benchmark that matters but also what else the government is likely to do (or does do) even if the STE were removed altogether.

The Partial De-Regulation of STEs: As noted above, there is pressure both in the WTO context and domestically across many countries that STEs should be de-regulated. At face value, this pressure is often associated with the outright removal of STEs and full reliance on the private sector in domestic procurement and sales and trade. Yet, in many cases where the STE has been de-regulated, the reforms undertaken have typically been partial in nature. Reforms to state trading in Australia, China, Japan and Indonesia are a few key examples. Often when de-regulation occurs, and perhaps reflecting the political sensitivity of the sectors in which they operate, the reforms have often been associated with keeping the STE in place and instituting reforms that may include one or a combination of the following changes: changes to the nature of exclusive rights that apply to the STE; changing the objectives of the STE (e.g. becoming more focused on maximizing profits); allowing a greater role for the private sector

but in combination with greater use of other policy instruments (e.g. removing the exclusive rights for the STE to procure in the domestic market but using floor prices also, or using import tariffs). There are two issues that arise from this: first, de-regulating the role of the STE may change the size (even direction) of the trade distorting effect associated with it; and second, such partial de-regulation may not necessarily be welfare enhancing.

To highlight some of these effects, consider Figures 1 and 2 below. Here we calibrate the theoretical models used elsewhere with assumed values for the parameters to illustrate the various effects discussed above. In Figure 1, we highlight the case of the importing country and consider the effects of the private firm benchmark, the nature of the welfare function of the STE, the nature of exclusive rights and the role of domestic price support. The definition of the tariff equivalent effect is as given above.

Figure 1: Tariff Equivalent of an STE with Varying Exclusive Rights and Objectives



SD,WM: single desk STE with joint exclusive rights and welfare maximizing

SD, PB: single desk STE with joint exclusive rights and producer surplus maximizing

IO, PB: import rights only and producer surplus maximizing

IO,PB,PS: import rights only, producer surplus maximizing and domestic price support

t^e : specific tariff equivalent

Consider, first of all, the bottom line (denoted SD, WM) which represents the case where we have an STE which aims to maximize social (not interest group) welfare and the STE has sole rights in the domestic (both sales and procurement) and over imports.² The figure shows that compared with a small number of private firms, the effect of the STE would be equivalent to an import subsidy, i.e., the STE would import more than would have arisen with a highly imperfectly competitive benchmark. The assumption of a welfare maximizing STE is, however, unrealistic as most governments tend to direct agricultural policy to certain groups. In the figure, we therefore show the effect of an STE that reflects a government bias towards producers. This is the assumption that characterizes all of the three additional lines in Figure 1. Since they all lie above the x -axis, they highlight that the trade distorting effect of the STE is equivalent to an import tariff. In other words, the presence of the STE reduces market access. Note the factors that will likely determine the size of this tariff equivalent effect. First, as the underlying benchmark becomes more competitive (n rises), the trade distorting effect of the STE increases in all cases. Second, the magnitude of the trade distorting effect for a given n will depend on the characterization of exclusive rights. The two cases considered here are where the STE has exclusive rights over imports and domestic procurement and sales (denoted SD, PB) and, alternatively, where the STE has exclusive rights over imports but competes with the private sector in the domestic market (denoted IO, PB). With the data used for this example, the presence of the private sector increases the trade distorting effect of the STE albeit only marginally. Finally, when the government uses an additional instrument (in this case price support), the trade distorting effect due to the presence of the STE falls significantly (line denoted IO, PB, PS). Taken together, the figure highlights that while a state trading enterprise has the potential to affect market access in a manner similar to a more traditional import tariff, the magnitude of this effect will depend on a range of offsetting factors.

Figure 2 reports the results of a similar exercise this time focusing on the trade distorting effect of an STE involved in the export market. Here we consider four cases, one where we have a welfare maximizing STE with exclusive rights in both the domestic and export markets and, in the other three cases, where we assume that the STE's objective is biased towards raising producer welfare. First, the STE has joint exclusive rights over exports, domestic procurement and domestic sales (labeled as SD, WM); second, where the same set of exclusive rights apply

² SD refers to single desk which we use to refer to the STE that has exclusive rights in both the domestic markets and sole responsibility for trade.

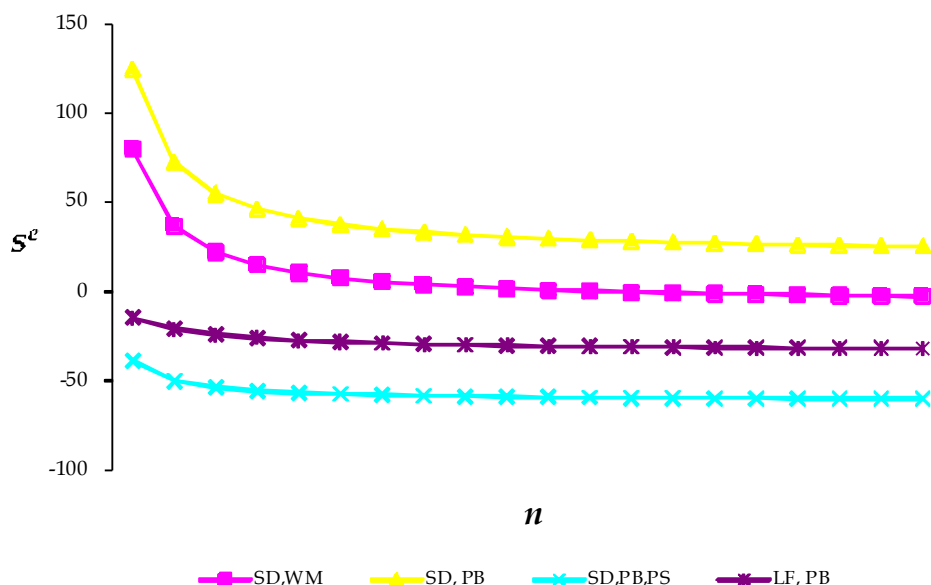
but where the objective of the government is biased towards producers (labeled SD, PB); third, where the STE's objective is biased towards producers but the STE has exclusive rights over exports only and coexists with the private sector and where the private sector accounts for sales to domestic consumers (labeled as LF, PB)³; and finally, where the STE has joint exclusive rights in the domestic and export markets, the STE's objective is to increase producer welfare but the government also uses price support (labeled as SD, PB, PS). As is evident from the figure, the trade distorting effect of the STE may be positive or negative. Specifically, when the state trading enterprise has joint rights and there is no other government intervention, the trade distorting effect of the STE is similar to an export subsidy with the size of this export subsidy being greater when the underlying market structure is less competitive. However, the presence of the price support turns the effect of the STE to be equivalent to an export tax, i.e., the STE with price support would export less than the private sector with price support. Finally, the trade distorting effect of an STE that has exclusive rights over exports only would serve to act in a manner equivalent to an export tax. Taken together, the figure highlights the importance of the interaction between exclusive rights, the use of other government instruments and the assumptions about the competitiveness of the underlying market structure.

Finally, in both the import and export cases, it is possible that the government's objective function may be biased towards consumers. This possibility will make the trade distorting effect lie between the welfare maximizing and producer biased cases: in the import case, giving rise to a possible import subsidy effect and, in the export case, giving rise to an export tax effect. In essence, as the weight on producer welfare decreases but that on consumer welfare increases, the trade distorting effects turn from an import tariff/export subsidy to an import subsidy/export tax. The case of a profit maximizing STE lies between these two effects and could give rise to either of these effects contingent on other aspects of the environment in which they operate (e.g., the use of domestic price support policies). Note that the sign of the trade distorting effect will give some indication of the likely consequences to (competing) exporters. In the import case, if the trade distorting effect is negative, then market access increases because of the STE; in the export case, a negative export subsidy also implies gains to competing

³ LF refers to the use of licensed firms. Note, that there may be more than one licensed firm and we would still be consistent with the WTO definition of a state trading enterprise. In the case that we report in the figure, we restrict LF to equal 1.

exporters from the existence of the STE. However, a positive import tariff will reduce market access and a positive export subsidy will imply increased competition on export markets.

Figure 2: Export Subsidy Equivalent of an STE with Varying Exclusive Rights and Objectives



SD,WM: single desk with joint exclusive rights and welfare maximizing

SD, PB: single desk with joint exclusive rights and producer surplus maximizing

SD,PB, PS: single desk with joint exclusive rights, producer surplus maximizing and domestic price support

LF, PB: licensed firm(s) and producer surplus maximizing

s^e : specific export subsidy equivalent

Taken together, this discussion draws out the main characteristics to consider when determining the effect of state trading enterprises on world markets. Furthermore, it gives important insights into what to look for in measuring the potential impact of any specific STE. Therefore, we use this framework to investigate the potential effect of COFCO on world markets. Before doing so, we provide an overview of the major developments in the use of state trading in China and summarize the principal changes brought about following China's accession to the WTO in 2001.

The Role of State Trading in China

The use of state trading in China has its origins in the central planning of the Chinese economy since 1949. With central planning, all foreign trade was controlled, with exports and imports set to meet annual plans, the overall objective of these plans being to promote self-sufficiency. Although there have been recent changes to the involvement of the state in international trade, the use of STEs and, even though the reliance of state trading particularly with respect to agricultural trade came under focus in China's accession negotiations to the WTO, state trading still dominates the policy landscape for agricultural imports and exports.

Under central planning, the China National Cereals, Oils and Foodstuffs Import and Export Corporation (CEROILS) had almost complete control over the main agricultural imports and exports. Now known as COFCO, the purpose of this organization was to balance domestic supply and demand through the management of exports and imports, to promote food security, to stabilize prices and generally to meet the government's objectives with regard to the agricultural sector.^{4,5} The determination of the level of imports and exports arises via a complex hierarchical process, with COFCO essentially acting as the agent over trade volumes and prices for decisions taken elsewhere. In essence, the State Planning and Development Commission (SPDC), in consultation with the Ministry of Foreign Trade and Economic Cooperation (MOFTEC) and the State Council determine the level of import requirements and volumes available for export, having consulted with central and regional authorities on domestic requirements. However, to ensure imports and exports met with the requirements of the central planning process, COFCO was given exclusive rights over imports and exports, which in turn gave it monopsony and monopoly power over Chinese agricultural trade.⁶

Although the state plays a dominant role in trade, state involvement has also been a key characteristic of the domestic marketing environment vis-à-vis the government's Grain Bureau which exerted control over procurement and distribution in the marketing of grain which, in turn, identified grain availability and requirements across Chinese provinces. Over the last decade or so, there have been a series of reforms (at times reducing the role of the state, at

⁴ It should be noted that COFCO is a highly-diversified company with investments in hotel and leisure facilities, real estate, agro-industrialized projects as well as investments abroad as part of its overall portfolio.

⁵ The objectives and use of state trading have been reiterated under the Foreign Trade Law (2004). Specifically, the state may subject certain goods to state trading to ensure stable domestic supply, to stabilize prices, to safeguard food safety, and to protect the environment and exhaustible resources.

⁶ Note that while for a period licensed firms could also be involved in exports, the allocation of export licenses was determined centrally and it still fitted with the definition of a state trading enterprise since the use of licensed firms can still be classified as the application of exclusive rights.

others increasing it), but the state continues to play an important role in the domestic market despite more recently the potential for non-state firms to participate in the procurement and marketing of grain. As discussed below, attempts to increase the presence of non-state firms in international trade of agricultural commodities has also been a feature of recent developments following China's accession to the WTO.

The dominant role of COFCO in agricultural trade extends over a number of key commodities. On the import side, COFCO has had exclusive rights to import grains (wheat, maize and rice), vegetable oils (soybean, palm, canola, and mustard) and sugar. As part of the WTO Accession Protocol, some diminution of these exclusive rights has arisen with the allocation of some portion of the tariff rate quotas (TRQs) (introduced in 1996) to non-state firms.^{7,8} On the export side, COFCO has exclusive rights over rice, maize and soybeans. Though, for a period, the administration of export licenses permitted non-state firms to participate in the exports of key commodities, this licensing process has been rescinded with COFCO now having exclusive rights over exports. Taken together, COFCO dominates China's agricultural exports and imports and as such has the potential to impact on market access and to affect competition on export markets. It should be noted in passing that state trading in China covers (or has covered) a wide range of agricultural and non-agricultural commodities including tea, tobacco, cotton, silk, oil, peanuts, petroleum, coal and chemical fertilizers, tungsten ore, antimony and silver.

To give some impression of the importance of COFCO in China's international trade, Table 1 reports average values for imports and exports of the key agricultural commodities controlled by COFCO as listed above for the period 1990-2005. The importance of COFCO is particularly obvious for exports and imports of grain especially wheat and rice imports and exports of maize.⁹ For some state traded commodities, the share of China's imports and exports can account for a significant proportion of world trade in specific commodity markets. For example,

⁷ The guaranteed access to the quotas for the state trading enterprises varies across commodities as we highlight below. Most commodities are subject only to an ad valorem tariff. For example, for feed grains (including barley) the rates average around 3%, for vegetables around 10%, for fruits around 11% and for dairy products around 10%. For meat products, the bound rates are somewhat higher, being between 12% and 20% for beef and for pig-meat, and 15% for lamb (ABARE 2006).

⁸ For the within-quota imports, the tariff is generally low and of 'nuisance' value while the out-of-quota tariff is generally prohibitive. For example, on wheat imports, the within-tariff quota is 1%; the out-of-quota tariff is 65%. As such, we largely set aside the role of tariffs in discussion of imports where state trading predominates.

⁹ The average values for the imports of palm oil are particularly high due to substantial increases in the value of imports between 2002 and 2005, which considerably exceeded the average values for the period 1990 to 2002.

the value of China's wheat imports in 1991-92 accounted for around 14% of world imports of wheat. In 2002, China's maize exports accounted for around 20% of total world maize exports. What is not so obvious from these data is the volatility of Chinese exports and imports for key agricultural commodities. Indeed, this is often one of the criticisms that is leveled at state trading regimes, i.e., they are disruptive of international markets given that purchases and sales can vary significantly from one year to the next, an outcome which reflects the lack of transparency associated with central planning and the dominance of meeting domestic objectives where international trade acts as a residual to balance any domestic supply and demand imbalance.

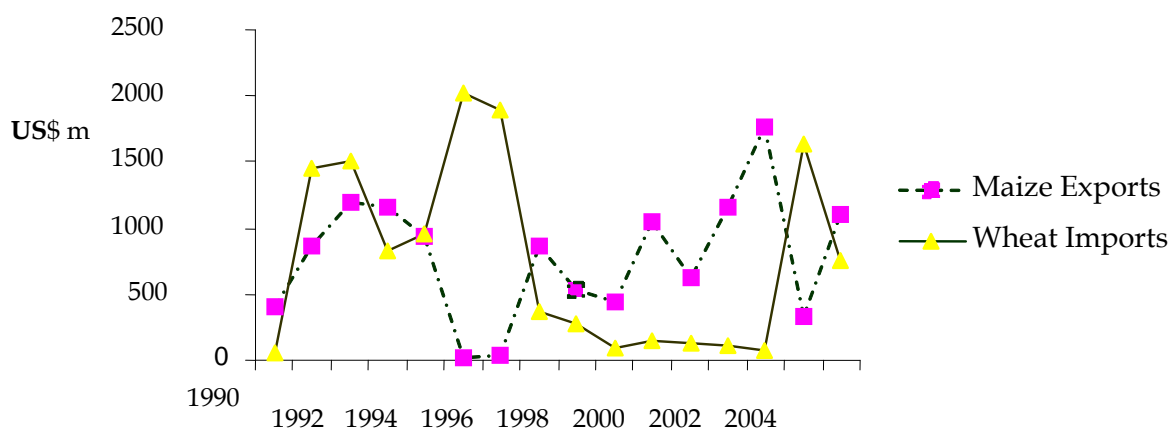
Table 1: Annual Average Value of Chinese Agricultural Imports and Exports Controlled by State Trading: 1990-2005 (US\$ 000)

<i>Commodity</i>	<i>Imports</i>	<i>Exports</i>
Wheat	769,134	
Rice	131,978	205,770
Maize		779,366
Soybeans		122,389
Soybean Oil	539,779	
Palm Oil	750,747	
Sugar	36,467	

Source: FAO

This volatility of the volume of exports and imports is evident from Figure 3 which highlights the level of imports of wheat and exports of maize over the period 1990-2005. Reflecting this volatility, the impact of China on world markets can vary markedly. For example, though China's wheat imports accounted for around 14% of world wheat imports over the period 1991-92, between 2003 and 2005 this share had fallen to around 3-4% of world wheat imports. For China's maize exports, the effect seems more variable. In 1991-92, maize exports from China accounted for 20% of world maize exports, but the year after they had fallen to 2% of world maize exports. Similar patterns of variability can be found in recent years: in 2005, China's maize exports accounted for 5% of world maize exports, down from a 20% share in 2002.

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Figure 3: China's Wheat Imports and Maize Exports: 1990-2005 (US\$ 000)

Given the dominant role played by COFCO in Chinese agricultural trade for major commodities, it is of no surprise that state trading was an important issue in the negotiations concerning China's accession to the WTO in the late 1990s. The intended outcome was to ensure that the activities of state trading enterprises were consistent with GATT Article XVII, with the Accession Protocol stating:

1. China shall ensure that import purchasing procedures of state trading enterprises are fully transparent, and in compliance with the WTO Agreement, and shall refrain from taking any measure to influence or direct state trading enterprises as to the quantity, value, or country of origin of goods purchased or sold, except in accordance with the WTO Agreement.
2. As part of China's notification under the GATT 1994 and the Understanding on the Interpretation of Article XVII of the GATT 1994, China shall also provide full information on the pricing mechanisms of its state trading enterprises for exported goods. (WTO, 2001, p. 5)

As part of the accession process, China agreed to relinquish part of the TRQs to non-state-firms. The aim of this was to reduce the dominance of COFCO across various commodity sectors, the specific mechanism being to allocate a specified share (but less than 100%) of the TRQ to COFCO. The agreed shares of imports to be allocated are: 90% for wheat, 71-60% for maize, 50% for rice, 42-10% for vegetable oils, 70% for sugar 33% for cotton and zero% for wool (WTO, 2001, Schedule CLII, Part I, Section 1-B, p. 61-66). However, it should be noted that the

allocation of a share of the TRQ does not necessarily imply a significant privatization of the import regime as the non-state firms still have to acquire licenses from the SDPC and there are conditions on the firms that would qualify for such licenses. These conditions relate to minimum levels of capital, the potential to import beyond a certain threshold, a suitable bank credit rating and a satisfactory level of profitability. With the allocation of import licenses and the continued dominance of COFCO over imports, it is clear that state trading still appears as a significant feature of China's agricultural trade policy. As such, while recent changes may have affected the level of trade distorting that may arise from COFCO it is clearly the case that COFCO still has the potential to significantly distort agricultural trade.

With regard to exports, recent changes have reinforced the dominant role of COFCO. Between 1990 and 2004, an export licensing and quota regime applied to certain commodities including rice, maize, tea, cotton, silk and soybean meal. However, under the terms of the WTO Accession Protocol, export licensing was phased out, with the controlled goods remaining subject to the state trading regime, and with the Accession Protocol confirming the use of COFCO in the management of exports for certain 'strategic' commodities.

The Trade Distorting Impact of COFCO

In this section, we report some results from our recent research that focuses directly on measuring the trade distorting impact of COFCO on world markets (McCorriston and MacLaren, 2007a, d). This research analyzes the effects of the leading STE-exported commodity (maize) to the world market and the leading STE-imported commodity (wheat). The focus is on the current regime as it emerged from the WTO Accession Protocol though, in the paper from which we draw these results, we also highlight how the trade distorting effect of COFCO may have changed following reforms in the grain sector in China since the late-1990s. The earlier discussion gives some pointers as to what we should be looking at to measure the trade distorting effect and what challenges may lie in dealing explicitly with the trade regime as applied in China. These pointers are the bias in the government's welfare function reflecting the bias in agricultural policy, the characterization of exclusive rights (and related to this the role of the non-state sector) and other mechanisms the government may use to influence the commodity market. We also assume that wheat prices at the procurement stage are flexible in that there is no pre-determined level for what the price at the farm gate should be. This differentiates the current regime from that following the reforms in 1998 that stipulated the

price that farmers would receive for grain and a quota to be delivered to the state sector via the Grain Bureaus.

With respect to the bias of agricultural policy, it is of course difficult to attach a precise weight or measure to this. As noted above, the use of state trading in China reflects a range of objectives including food security, ensuring food supplies and stabilizing markets. However, it appears that in recent years, the bias of agricultural policy in China has tilted towards favoring producers. This is reflected in recent Producer Support Equivalent (PSE) measures for China. In the mid-1990s, the aggregate PSE measures were negative reflecting a bias towards consumers; more recently, the bias has switched to producers with the average PSE measure now positive. However, for wheat the PSE (CSE) is negative (positive) though for maize, the PSE (CSE) is positive (negative). Reflecting this, we assume a 'mild' bias towards consumers (producers) for the wheat (maize) sectors in the results we derive below.

Modeling the nature of exclusive rights and the role of the private sector poses some challenges for addressing issues in the wheat sector. There are three aspects of this that need to be considered. First, the reforms in the wheat marketing sector in recent years have allowed for non-state enterprises to procure and distribute domestically produced wheat. Moreover, given the nature of these enterprises, their objective function will likely differ from that of COFCO as, not being explicit instruments of government policy, their interests will lie in maximizing profits. Second, the mechanics of the TRQ system under the WTO Accession Protocol allocates a share of the TRQ away from COFCO. As noted in the discussion above, to qualify for an import license, the enterprise has to fulfill certain criteria. This potentially differentiates them from non-state enterprises in the domestic market that will not qualify or not be allocated a license for whatever reason. To capture this, we differentiate these licensed firms (which can still procure from the domestic market) from those that can only participate in the domestic but not import market. Therefore, in our set-up, we have three types of enterprises that co-exist: the non-state domestic enterprises; the licensed firms that can procure from the domestic market and imports; and the state sector that plays a role in the domestic market and via COFCO which acts as the agent in procuring and distributing imports.

However, there is a third issue which we attempt to incorporate, namely, the administration of import licenses in the presence of COFCO and the hierarchical nature of decision making in China. One aspect of the hierarchical decision-making is that the State

Development and Planning Council, determines jointly the level of imports and domestic procurement. This captures the idea that COFCO's purchases are not independent of the decisions made by the SDPC in determining requirements in the domestic market. When it comes to the import licenses of the non-state firms, once given a license, they freely determine how much to import to maximize profits which is contingent on their decisions in the domestic wheat sector. The alternative to this scenario is one involving a more subtle way of modeling the imports of non-state firms. Specifically, since the state allocates these licenses and as the share of the TRQ that is specifically allocated between the non-state enterprises and COFCO has already been determined, the non-state firms are not free to import how much they choose, as they have already been allocated some proportion of the total quota and therefore related to what the SDPC would determine. As such, if they import, the license determines how much they will import and the profit maximizing decision in the domestic market takes the import allocation as given. As we show below, characterizing the decision process in this way has an important effect on determining the trade distorting effect of COFCO.

Details of the data used to calibrate the model and the assumptions regarding the competitiveness of the underlying benchmark can be found in McCorriston and MacLaren (2007d). In brief, the model was calibrated using wheat sector data for 2005/06. We assumed that China has some degree of market power in procuring imports, i.e., it is a large country in the international wheat market. Domestic and imported wheat are assumed to be relatively homogeneous and that the underlying private sector benchmark was fairly but not 'too' competitive.¹⁰

Table 2 reports the results for the potential trade distorting effect of COFCO in the world wheat market. The two cases reported reflect the different assumptions about the decision-making process and the impact that this has on the imports of the licensed enterprises. It is clear that, whatever assumption is used, the tariff equivalent effect of COFCO is negative, reporting an import subsidy equivalent as high as US\$29 per tonne in the restricted case, which is around 14% of the world price for that year. The non-restricted case reports a lower import subsidy equivalent: although the licensed firms can potentially import more under this 'unrestricted' regime, total imports are lower as, in this case, we have to account for the strategic interaction between COFCO and the licensed firms (and also between the latter) that would not otherwise

¹⁰ In the framework we use, all these assumptions can be readily varied. The sensitivity of the results to these assumptions can be found in McCorriston and MacLaren (2007d).

exist in the 'restricted' regime. Varying the assumptions used in calibrating the model does not change the overall picture even though it changes the magnitude of the tariff equivalent. More important is the assumption of the bias in government policy. Reflecting the PSE/CSE values for China in the wheat sector, we have assumed a bias towards consumers. However, switching the bias towards producers and away from consumers would result in a positive tariff equivalent equal to US\$316 per tonne. The overall conclusion is that COFCO distorts market access, the magnitude of this effect is potentially significant, and the impact of COFCO on the world wheat market reflects the bias in government policies.

Table 2: Trade Distorting Impact of COFCO in the Wheat Market

Tariff Equivalent Effect	
-restricted case	-\$US 28.9/tonne
-non-restricted case	-\$US17.8/tonne
China: net welfare effect ¹	
-restricted case	0.12
-non-restricted case	0.43
Exporters' welfare ¹	
-restricted case	16.1
-non-restricted case	9.8

¹ Percentage change from private firm benchmark

All trade distortions affect welfare and the same is true of state trading. Table 2 therefore reports the welfare effects associated with the trade distorting effect of COFCO. There are two main results to note. First, in the restricted case, net welfare for China is slightly increased (by 0.12%) compared with what would have arisen if COFCO did not exist. This increase reflects the increase in consumer surplus which is associated with the increase in imports arising from the import subsidy equivalent. In addition, reflecting the negative trade distorting effect and therefore the increase in market access associated with it, welfare for exporters is higher (by 16%) compared with the private firm benchmark. Second, in the unrestricted case, net welfare in China is higher by 0.43% and exporters' welfare higher by around 10% the latter reflecting

the relatively lower negative tariff equivalent effect.¹¹ Note that driving the sign of the trade distorting effect and therefore the implications for welfare in China and that of third country exporters is the bias of government policies. If the bias of these policies were to change to favor producers, the trade distorting effect would change sign resulting in a positive trade distorting effect, restricted market access, lower welfare for exporters and net welfare benefits for China. Of course, as with all trade instruments, the net welfare effects hide the internal re-distributive effects which are substantial.¹²

Table 3: Trade Distorting Effect of COFCO in the Maize Market

Subsidy equivalent effect	US\$14.2/tonne
China: net welfare effect ¹	-5.4
Competing exporters' welfare ¹	-0.3
Importers' welfare ¹	23.6

¹ Percentage change from private firm benchmark

Finally, Table 3 reports results from McCorriston and MacLaren (2007a) relating to COFCO's presence in the world maize market. Reflecting the positive (negative) PSE (CSE) measures in the Chinese maize sector, we assume a bias in the welfare towards producers. Resulting from this, the subsidy equivalent is positive amounting to around 13% of the world price. This is clearly a significant subsidy equivalent effect which affects competing exporters. Reflecting this, their welfare falls by -0.3% while net welfare for China also falls by -5.4%. Importing countries would nevertheless benefit from this positive subsidy equivalent, welfare in the importing countries rising by around 23%.¹³

Taken together, these results relating to the use of state trading in China confirm that in both import and export markets COFCO has a significant potential to distort trade. However, the extent to which it does so and, in turn, the impact this has on welfare in China and in the

¹¹ Note that the net welfare effects for China include the re-distribution between producers, marketing firms' profits and consumers while, for the exporting countries affected by the tariff equivalent, we assume no domestic consumption.

¹² We report a larger array of results including the effects on producers, consumers and profits in McCorriston and MacLaren (2007d).

¹³ Again, this relatively large figure reflects no net domestic transfers where the gains to one group are diluted by the losses to another.

rest of the world will reflect China's priorities with respect to the direction of its agricultural policy objectives and the role that China plays in world markets. The hierarchical nature of decision-making in China also has an important bearing in addressing the impact of COFCO on world markets.

Finally, there are three important caveats to bear in mind when reviewing the results. First, these results are indicative of the potential of COFCO to distort agricultural markets, rather than being definitive. But the framework does highlight the factors that will determine these effects. Second, the evidence from the OECD data on PSE measures suggests the bias in Chinese agricultural policy has been changing in recent years. Given that the bias in the welfare function is one of the key determinants of the impact of state trading, on-going developments in the direction of policy objectives of the central government in China will have an important bearing on the effect of COFCO on international markets. Finally, as is evident from Figure 3, China's imports and exports from the world market are highly variable between years, reflecting among other factors variability in domestic supply and demand imbalance. As such, one should expect the potential impact of COFCO on world markets to also vary significantly from year to year.

Summary and Conclusions

The use of state trading in China in the form of COFCO has been a key feature of the agricultural policy landscape in China for many years and as such is an important instrument for the Chinese government in managing commodity markets and meeting its overall objectives. Given the prevalence of state trading and the impact China can have on world markets, it was of no surprise that the use of state trading was an important issue in China's accession negotiations to the WTO. State trading nevertheless persists for key agricultural commodities and applies to both imports and exports. Despite attempts in the WTO Accession Protocol to limit (or diminish) the influence of state trading, COFCO still has significant potential to control both imports and exports of several commodities.

In general, there is an absence of theoretical work that formally addresses the impact of STEs on world markets. In this paper, we have drawn on some of our recent research to highlight the factors that are likely to influence the effects that STEs have on world markets. We have recently extended this body of research to deal with some of the explicit issues that arise with respect to COFCO including aspects that specifically relate to the WTO Accession Protocol. Our results confirm more casual expectations that COFCO does have the potential to distort

world markets and, in turn, welfare for both China and other countries. In large part, the sign of this trade distorting effect will reflect the overall bias in Chinese agricultural policy towards producers and consumers as well as the terms of trade effects that arise due to China's size on commodity markets. In sum, the manipulation of market structure via the use of state trading is just another instrument of government policy, albeit one which requires a different focus to measure the trade distorting and welfare effects that arise from it. Nevertheless, the impact of state trading enterprises on trade is at least as significant, if not more so, than that of the more obvious policy instruments.

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