More Pain Ahead for China's Food Prices

by Huang Jikun, Qiu Huanguan and Scott Rozelle

THE CONTINUING INCREASES of China's consumer prices since the middle of 2007, which have mainly been driven by increases in the prices of food, have triggered serious concerns both at home and abroad. In China, some fear that a surge of inflation is looming over the nation's future. To ease the mounting pressures that have accompanied the price rises—and to avoid the damage that inflation could bring to China's economy, officials have begun to use a spectrum of policy measures—including monetary-policy adjustments, fiscal moves, and even direct attempts to intervene into the market price of food.

Since mid-2007, the monthly growth rates of China's food CPI have exceeded 15%, and the trend has been steadily accelerating. The rise in food prices accounts for between 85% and 92% of the nation's overall price increases during the past eight months. In fact, during the same eight-month period, the price trends of a number of nonfood items, such as clothing, have fallen.

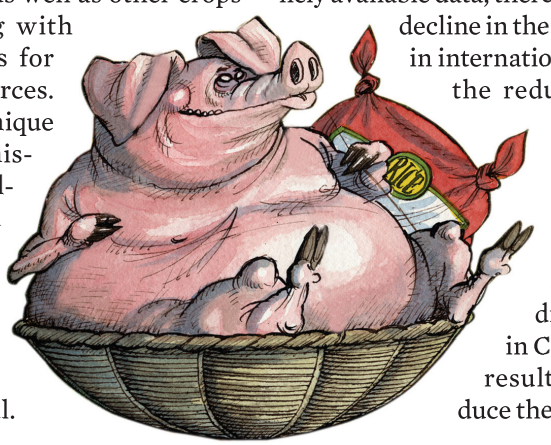
Inside the broad category of food, the highest price increases since mid-2007 occurred in the cases of pork and vegetable oil. Pork prices jumped by 71%; the price of vegetable oil rose by 40%. Although other food prices also increased, they did so at relatively moderate rates. For example, the prices of vegetables and staple grains have increased by only 23% and 6%, respectively, during the past eight months. It's worth noting, however, that these trends may be shifting. While the price of pork price declined by 1.6% during the first half of March 2008, the price of vegetables rose at a relatively higher growth rate—at least in part due to serious weather shocks in February. The price of rice, which may have been held down by the government's management of rice stocks, began to rise sharply in March and April. In summary, the price increases during the past several months are mainly only due to shifts in prices of a single sector—and inside that sector are only due to rises of a limited number of commodities. This pattern of

Messrs. Huang and Qiu are economists at the Center for Chinese Agricultural Policy, Chinese Academy of Sciences. Mr. Rozelle is a professor of economics at Stanford University.

price rises does not appear to be a sign of general inflation.

Given this pattern of price shifts, what are the major sources of these surges in the price of food over the past several months? Can the price rises be linked to shortage of supply? Or, are there other reasons? Is there any evidence that can provide us with hints about whether or not we should expect continued rises in prices? (And, if so, is there any length of time that we should expect prices to be continuing to rise?) The answers to these questions are not only critical for the understanding of the current price increases, but also are essential for providing accurate information to those in China's central government so that they will have an empirically sound basis for creating a strategy to respond to current and future price increases.

In order to correctly understand why food prices have risen so dramatically in recent months, we need to begin with a global perspective. The rise of international energy prices and the development of biofuels, which has occurred mostly outside of China, are two of the fundamental reasons that food prices have risen both inside and outside the country. These two factors not only can be linked to increases in the costs of agricultural production, they also are driving the rise in prices of those crops that are used as feedstocks in biofuel production, as well as other crops that are competing with the feedstock crops for land and other resources. We have entered a unique time period in the history of global agriculture. In short, in a way never before experienced, the price of food in the world is rising because it is closely tied to the price of oil.



So rising prices are not due to a domestic supply shortfall. Indeed, China's grain and livestock production has been steadily rising since 2004, with the exception of a 3.5% decline in the production of meat in 2007. In fact, grain production reached 500 million tons in 2007, the highest level of production since 2000. Although there was a drop in meat production in 2007, which was partly caused by an outbreak of disease in China's pig population, the low prices of pork that had plagued producers in the years prior to 2007 also contributed.

Despite these two sources of production shortfalls in the pork subsector, there must be other causes of the rapid and steep increases in the price of pork and the other types of food in 2007. If we look at the demand side of the equation, there is no apparent abrupt increase in China's domestic food demand over the past years. Although the income of consumers has risen in recent years, which will naturally put upward pressure on prices of goods like meat, the demand for food only rises gradually.

The same arguments can also be applied to an analysis of international prices. In 2007 international food prices increased by 21.6%, even as global production reached record heights. The world's cereal production in 2007 was 1.66 billion tons, a level that was 89 million tons more than the level of production in 2006. According to publicly available data, there was no significant decline in the volumes of cereals in international stocks. In fact, the reduction of China's grain stocks from 2000 to 2004 can account for 80% of the overall decline in global stocks. This large drawdown of stocks in China occurred as a result of efforts to reduce the cost and adminis-

trative burden of caring for vast amounts of grain stocks that accumulated during a period in which China was reforming its grain marketing system.

The rocketing price of energy and the rapid expansion of global biofuels production ultimately are the main sources of the recent food price surges. According to our rough calculations, the increase in energy prices can directly account for at least 30% of the recent food price rises. At the same time, the increase in the demand for grain that is linked to the expansion of biofuels production world-wide can account for 45% of recent food price rises.

Beyond the price of oil as an input to agriculture, the rapid expansion of biofuels production influences the prices of agricultural commodities through two channels. First, when biofuels production increases, it increases the demand for feedstock crops that are used for biofuel production directly. Second, the demand for biofuels feedstock crops draws away land and other resources from other crops (e.g., wheat) and so the prices of all agricultural commodities rise.

What is behind the emergence of these two channels? The biofuels industry has created a new, and almost certainly lasting, link between world energy and the markets of all agricultural commodities. This change is fundamental. Unlike in the past 100 years, the prices of agricultural commodities are no longer determined by their traditional demands as food for human consumption or as feed for livestock. Instead, the production of biofuels has already begun to make the prices of agricultural commodities move in close sync with world energy prices.

A couple of examples can illustrate the point. In the United States and Brazil, biofuels producers use corn and sugar cane for the production of ethanol. At the same time, the European Union has begun to use rapeseed (or canola) for producing biodiesel. In 2006 the production of bioethanol in the U.S. reached 18 million tons. To produce this amount of ethanol, biofuels plants consumed about 20% of the nation's corn production. As a result of this, the price of corn increased by 78% in the last half of 2006. Moreover, the rising prices of biofuels feedstocks pushed up the prices of primary factors (e.g., land). In addition, when the prices of feedstock crops are high, this draws more land from other crops. Because of this, the prices of other agricultural commodities (e.g., wheat and soybean) also increase significantly. Although little wheat or soybean is used as feedstocks for biofuels production, the world price of these crops rose by 91% and 68% respectively between June 2007 and February 2008.

Due to concerns about food security, and based on expectations that food prices may continue to increase in the future, officials in many countries have adopted policies to discourage the export of food. For example, the Argentine government recently increased its export tariff on soybeans to 35% from 27.5%. At the same time, officials increased the export tariff on wheat to 28% from 20%. Indonesia officials also increased the tariff on the exports of palm oil to 6.5% from 1%.

China's officials have acted similarly. Since October 2007 the government temporarily reduced the import tariffs on soybean oil to 1% from 3% as a way to partially ease pressure on domestic prices. To discourage food exports, China's government eliminated export subsidies for all grains and a set of other processed products at the end of 2007. In January 2008, it imposed export tariffs of 5% to 25% on the same commodities. In April 2008 it sought to ease prices of agricultural inputs by restricting the export of chemical fertilizers. When summed together, the changes to trade policies in individual countries are aggravating the imbalanc-

es of food supply and demand on the international market. This is another reason that food prices have risen so sharply across the globe in recent months.

Furthermore, food prices have almost certainly been affected by speculative behavior. With the expectation that food prices may continue to increase in the future, food producers, consumers, traders and governments have sometime been induced to either reduce food supply or to increase food stocks. All of these activities will—at least in the short run—cause higher food prices.

It is clear that the rise in the price of food in China is largely being driven by forces in international markets, for several reasons. First, over the past two years, China's grain and livestock production (except for pork) has increased steadily. Second, there also has been no noticeable abrupt increase in the demand for China's domestic food and feed. Third, since China's accession to the World Trade Organization in 2001, the shifts in the prices of most major agricultural commodities in China (including wheat, rice, maize, soybean and oilseeds) are consistent with the changes being experienced in international markets. However, since the end of 2007, the links between the two markets have been temporarily broken because of the efforts by China's government to intervene in agricultural trade. During the past several months, while the international price of food has increased steadily, the price of food in China has flattened out or even begun to decline.

Since late 2006, the price of pork has risen steadily in concert with price rises experienced on international markets. During this time, the growth rate of price of pork in China, in fact, rose faster than the international price, which can almost certainly be tracked to low prices in recent years. Before 2006, the price of pork had remained quite low for many years. Finally by the mid-2000s there was relatively little incentive for farmers to produce, and in the mid-2000s production fell. In addition, in 2006 there was an outbreak of a relatively severe hog disease (blue-ear disease) which led to a 9.2% decrease in supply in 2007. More recently, heavy snowstorms also led to a decline in the volume of pork (as well as vegetables) supplied to domestic market, which in turn helped fan the price rises.

So why have China's prices risen relatively less than the rest of the world? In short, the nation has used two policy mechanisms to ease the price of food. First, China's leaders chose to release grain from grain stocks, even though there was no supply shock. Second, export controls have at least temporarily relieved pressure on prices.

Of course, these policies are not sustainable. Stocks in China are primarily for disaster relief and are not kept in volumes that can be used to stabilize markets over long periods. With the resumption of the rise in the price of rice, it appears as if China's leaders have decided to not intervene (or can not intervene). In addition, international export controls are only a temporary measure. While the cessation of exports of maize have eased pressures in domestic markets (especially when coupled with the release of maize stocks), this has kept maize prices relatively low in China. At the same time, the price of soybean has risen rapidly, being linked to the world market price (since China is the world's largest importer of soybeans). As a result, during recent field surveys in Northeast China, we discovered that many farmers are interested in expanding soybean area this year at the expense of maize. Clearly, this will lead to higher maize prices inside China next year—and will undermine the past efforts to stabilize the price of maize.

Global food prices will remain high,

and it is possible they will continue to rise. Even if the price of oil falls below $70 per barrel, the incentives put in place by the governments of the U.S., Europe and Brazil will keep the demand for agricultural commodities for feedstocks high and keep prices from falling.

Because of the economics of biofuels, as well as the political economy of agricultural policy in the U.S., even if there are temporary declines in the price of food (or a slowing of their rise), in the future we will never come back to an era in which we saw steadily low food prices. Until biofuels emerged in a major way, food prices during the previous 100 plus years had fallen in real terms. We truly believe that we are currently experiencing a historic watershed. Agriculture is entering a new era of development that has never been experienced before—it will be a period of sustained high food prices.

The price of grain in China is under rising pressure to go up with the increasing price gap between domestic and world markets. From the end of 2007, China's grain prices have been deviating from the world price. This gap has been maintained by policies that have sold off national reserve grain (and thereby expanding supply) and by edicts that have restricted exports. The world price of wheat at 3,040 yuan per ton (around $439) was almost double China's domestic wheat price (1,610 yuan per ton) in February 2008 (although a part of this is due to differences in quality). In the meantime, the world price of rice also rose to 20% higher than the domestic price, meaning that even as China's rice price rose in March and April, it still lagged behind the global price. There is a tendency for the same dynamics to occur in the case of maize. Therefore, it is important to explore how long policy makers in China will be able to maintain their influence over lower domestic prices.

In fact, if current control policies are maintained, there could be a serious grain price inflation which could become a national crisis within one to two years. Unlike world prices, the average price of China's three main staple crops has decreased since the middle of 2007 (though rice has risen considerably in the past few months). The ratio between the price of grain and the price of soybeans has deteriorated. As a result, in the coming seasons farmers in China will likely reduce (in a relative sense) grain production and move to more profitable crops (e.g., shift from maize to soybeans). As a consequence, we should expect that there will be additional pressure on the price of grain to move sharply up. While selling grain out of stocks can postpone the problem, in the longer run stocks can no longer be used. Thus it is very important for China's government to balance the potential crisis of today with that of tomorrow. If prices are allowed to rise now, they will stimulate domestic production of key commodities. In the longer run, this rising supply will help moderate future price increases.

Previous research has shown that China's grain and oilseed markets are closely interlinked. And since as the largest importer of oilseeds in the world, China's prices for oilseeds are closely linked to world market prices, there will be pressure for the price relationship between grains and oilseeds to follow the patterns set in international markets. In short run, however, the pressure in the relationship will come through oilseeds. In grain, imports and exports are managed through the tariff rate quota-management system, meaning the state can limit exports to isolate itself from both domestic and foreign markets. The situation in the edible oil market is totally different. In 2007, soybean imports and exports amounted to 30.82 million tons. Domestic production was only 14.4 million tons. Because of this volume of trade, the price in the domestic

market for soybeans moves in close concert with the price in the international market. Therefore, it will be difficult to intervene in the edible oils market. As the price of soybeans internationally has more than doubled over the past 18 months, China's farmers should be expected to expand soybean production in 2008. If so, prices will tend to stabilize or move slightly down—though this will not have too large of an impact.

The price of pork reached its peak during the first two months of 2008. Although the rate of growth has dampened, the price of pork will stay at a high level. From April 2007 to February 2008, the price of pork increased about 80%. Because of this, farmers responded. This is true even though the price of feed rose. After remaining steady in January 2008, the price of pork actually started to decline in February and early March. Since the increase of the price of pork accounts about one-third of overall price increase since the middle of 2007, when the pork price cools, the rate of rise of food should be expect to decelerate.

Since this round of price rises of agricultural commodities, unlike in the past, may be expected to be long-term in nature, the government should look upon this as an opportunity. The positive impact of sustained high prices on the development of agriculture will be far-reaching. There will also be sustained negative consequences for consumers that need to be dealt with.

There are several factors to consider. First, rising agricultural prices will be able to play a major role in solving the "Three Nong Issues," that is, issues related to the low level of development and poverty in agriculture (*nongye*), the farm household (*nongmin*) and for rural issues in general (*nongcun*). Higher prices on a sustained basis will help raise the overall income of farmers. Because almost all rural households—especially those that are poor—have access to land, higher prices will play a key role in the war on poverty. The increase of food prices also will help narrow the gap between urban and rural incomes, which has been stated will be an important part of building a harmonious society.

Second, if the high prices of agricultural products stay high for an extended period of time, it may change the history of agricultural development. Agriculture's torment in the past is that the price of its output was always expected to fall and so it was not a sector that attracted a lot of investment. If this is no longer true, it may be that the agricultural economy is entering into a new era of development. With higher prices expected far into the future, the status of agriculture in the economy as a whole will be enhanced. More investment will be attracted. Ultimately, this means, of course, that there will be improved agricultural productivity and continued high output.

Finally, despite the benefits, rising prices are a double-edged sword. Consumers—in particular those in the low-income urban class—will be negatively impacted. It is possible that this will in part undermine urban social and political stability. At the same time, the increase in food prices will increase the pressure for higher wages, which indirectly will impact on the production costs of other sectors. Policies will be needed to offset these effects.