



The Run on Rice

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This year has brought vivid television images of food riots in poor countries and unpleasant surprises at the supermarket checkout counter in rich ones. Is the era of cheap food really over?

By mid 2008, U.S. dollar prices for food grains had more than doubled compared with just two years ago. Over half of the increase occurred in the first six months of this year. The price of rice—a staple food for half the world's population—jumped to \$907 per ton in April, almost triple November 2007 levels. In response, major grain exporting countries introduced export bans, sending importers nervously searching world markets to secure supplies.

Food prices are still only around half what they were during the worst of the great world food crisis of 1973–74 in inflation-adjusted terms, and no more than their average during the 1960s (according to our calculations that measure food prices relative to an index of global manufactured export prices). But this will hardly be of comfort to the hundreds of millions of poor people with less to eat today, who are experiencing a sharp fall in their already meager living standards. So what are the causes of the present surge in world food prices, in particular for rice? And what can be done about it?

Many explanations have been put forward for the hike in food prices, some better supported than others. One popular notion is that prices are rising because of rapid income growth and rising food demand in Asia, particularly in China and India. But this idea—which, incidentally, neatly puts the blame for rising prices on developing countries—does not square too well with the facts. Growth in Asian rice consumption has been slowing for decades despite rapid economic growth, falling from 2-3 percent a year in the 1970s and 1980s to only 0.9 percent a year so far in the 2000s. (Annual growth in overall world consumption so far this decade is roughly 1 percent.)

A variant of this argument is that Asians are upgrading their diets and eating more meat, which is indirectly boosting demand for animal feed. This certainly appears to be true for oilseeds like soybean meal, demand for which has been rising rapidly in China's poultry and livestock industry. But it is much less clear that it has been boosting grain demand. Rice is not widely used for this purpose. And growth in Asian demand for other grains for feedstuff has been falling—not rising—due to improved efficiency in use. Such growth fell from a staggering 12-13 percent a year in the

1970s to less than 1.5 percent a year so far this decade. This is also due to the increasing use of other feeds such as soybeans and cassava, and consumers' increasing appetites for chicken, which requires only 2-3 kilograms of feed per kilo of meat produced compared with up to 10 kilos for beef.

So growth in demand for crops as food for either humans or animals does not appear to explain the sudden spurt in rice or other grain prices over the last two years. Nor, for that matter, do production shortfalls. World rice production in 2007 was at an all-time high, with 2008 forecast to set another record, while world rice stocks have remained fairly steady at 17-18 percent of world consumption in recent years. Severe weather has had a bigger hand in the wheat market due to back-to-back droughts in Australia in 2006 and 2007, but by itself is unlikely to have been a major contributor to the more than doubling in wheat prices over those years.

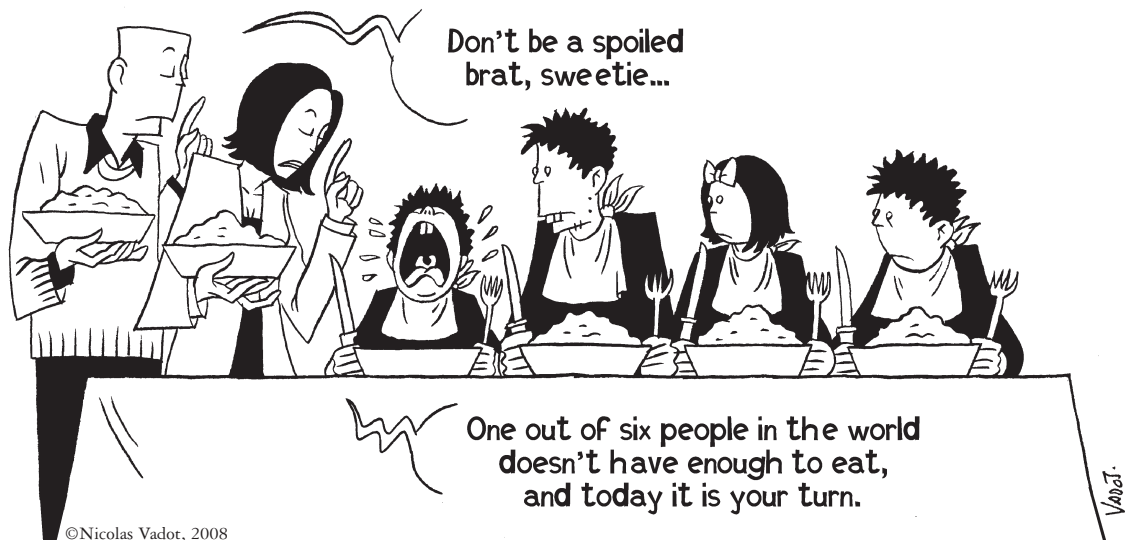
What's Fueling High Food Prices?

Another occasional rationale is that the food price increase has been worsened by so-called neoliberal free trade reforms imposed on developing countries during the 1980s and 1990s, requiring them to reduce import barriers on food. This is a large and complicated subject, but one can point to at least two problems with these arguments. First, as Dani Rodrik, the Rafiq Hariri Professor of International Political Economy at the John F. Kennedy School of Government at Harvard University and a stern critic of ill-considered, pro-globalization boosterism, recently observed on his blog: "It seems to me odd to fault... advice some 15 years ago to eliminate import protection—so that domestic prices could come down at the time—while at the same time complaining about high prices now." Rodrik observes that with higher import barriers, "the global supply

of food would have been lower today, not higher." The reason, he continues, is that "import protection would have led global production to be reallocated from efficient exporters to inefficient importers.... If you are for self-sufficiency you must be willing to live with high food prices." But second, and perhaps more important, these somewhat theoretical considerations may be moot, because, whatever may have been the intentions of reform programs, developing countries as a group have not actually reduced import protections on food. Recent academic research, in fact, shows that developing countries' protection on import-competing agricultural products trended somewhat higher—not lower—between 1970-74 and 2000-04.

Recent World Bank studies suggest that rising energy and fertilizer prices and the falling dollar have contributed perhaps one-third of the rise in world food prices. Rising fuel costs directly increase the cost of operating agricultural machinery, irrigation systems, and transport. Energy is also a major input in the production of fertilizers (particularly urea) and agricultural chemicals, with rice being a particularly fertilizer-intensive crop. Fertilizer prices have more than tripled since the beginning of 2007. When the dollar devalues, commodity prices go down when converted into other currencies, prompting exporting countries to reduce their supply to the world market and importers to increase demand. Both forces tend to push up commodity prices as measured in dollars. One study estimates that dollar-denominated commodity prices rise by 5-10 percent for every 10 percent fall in the dollar. Food prices are generally found to be at the lower end of this range.

The biggest single contributor to the overall rise in grain prices, though, is government policy encouraging the production and use of biofuels. Indeed, many countries



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have set mandates or targets for use of biofuels, while subsidizing production and restricting imports. The EU has set a goal that 5.75 percent of motor fuel must be made from biofuels by 2010, and put tariffs on imports of ethanol and biodiesel, while allowing exemptions from domestic excise tax for biofuels. The United States has mandated the use of 15 billion gallons of ethanol from traditional sources (primarily maize) by 2015 and 1 billion gallons of biodiesel by 2012, while also imposing a tariff on ethanol imports and providing tax credits for biofuel blenders.

Such policies, which have been justified by concerns over energy security and climate change, have sharply increased demand for first generation biofuel crops, such as maize and sugarcane for ethanol, and oilseeds (rapeseeds, soybeans, and palm oil) for biodiesel. Production of most first generation biofuels is thus in direct competition with the use of land for food or feed production. Second generation biofuels are based on cellulose-rich materials such as wood chips, crop residues, and algae, and thus not in direct competition for land with food crops, but the technology to break cellulose into sugars distilled to produce ethanol or

gasify biomass is not yet commercially viable. Almost all of the increase in global maize production from 2004 to 2007 (a period when grain prices rose sharply) went for biofuel production in the United States, while ordinary increases in global consumption for other uses had to be met by drawing down stocks. In 2004–07, global maize production increased by 51 million tons, biofuel use in the United States increased by 50 million tons and global consumption for all other uses increased by 33 million tons, which caused global stocks to decline by 30 million tons. Most analysts agree that first generation biofuels have had a substantial impact on land use and food prices. As more land was switched to growing maize in the United States and oilseeds in the European Union, plantings of wheat fell, world wheat stocks tumbled to record lows, and wheat prices surged.

The impact of biofuel use on rice prices is less direct than for other grains or oilseeds. Rice is not used for biofuel production and rice land is not easily switched to other biofuel crops. However, the surge in wheat prices has affected rice because wheat and rice are substitutes in consumption and imports. Higher wheat prices have

encouraged consumers to substitute rice for wheat, which, in turn, has helped push rice prices up. Based on the historical relationship between the prices of the two grains, the high level of wheat prices in early 2008 would have suggested rice prices around \$600 a ton, up from \$326 in 2007. That, however, is still rather less than the over \$900 per ton that rice averaged in April. So what else is going on?

The Run on Rice

The last piece of the rice price puzzle reflects the unintended consequences of government policies in major rice exporting and importing countries. Fear grew that the sharp increase in corn and wheat prices in 2007 would eventually spill over to domestic rice markets. Concerns about the rising price of wheat imports and overall inflation led India to restrict its own rice exports on October 9, with the aim of holding down domestic rice prices and maintaining rice supplies for the public food distribution system. Instantly, 3-4 million tons were taken off the thinly traded world rice market of 28-30 million tons a year. India's decision had a snowball effect, as other countries, including Egypt, Vietnam, and China, also imposed export restrictions, driven by a concern to secure adequate domestic supplies and forestall domestic price increases, given the threat of possible bans by other players. With this run on rice, world market prices quickly escalated to levels initially unimaginable.

Large tenders at increasingly high prices by importers such as the Philippines added to market pressures. Efforts by exporters to keep domestic prices low through export bans have also not been wholly successful, as smuggling, hoarding, and distress purchasing have affected domestic markets. A run on rice was also observed in domestic markets. For example, in April and May 2008, rice was at times reportedly nowhere to be

found in Ho Chi Minh city, the largest city in Vietnam, the second-largest rice exporting country in the world.

Global rice prices eased back to around \$800 a ton by the end of June, reflecting forecasts of record harvests, action by Japan to release 200,000 tons of rice stocks it holds under World Trade Organization (WTO) agreements, and Vietnam's decision to lift export restrictions. However, policy pressures remain, as Thailand announced a support price of \$825 a ton for 3.5 million tons of its production and Vietnam introduced an indicative minimum export price of \$800 per ton. Rice prices are now predicted to stay in the \$700 to \$800 range for the remainder of the year.

Looking further ahead to 2015, prices are expected to remain well above 2004 levels for most food crops (including rice), reflecting an assumption of continued high energy prices and—crucially—that governments will continue to promote biofuel use, indicating a permanent structural increase in the demand for agricultural commodities. Under these circumstances, the demand for grains for mandated biofuel use is likely to outrun supply for some time, generating strong upward pressures on food prices.

The Poor Feel the Pinch

Food price inflation has surged in many developing countries: in Vietnam and China it was running at 34 percent and 22 percent respectively in April, while the level in Indonesia and the Philippines has approached 15 percent. With households in East Asia spending on average 30-50 percent of their budget on food (and more among poorer households), people are feeling the pinch. The impact of food price increases on the poor also depends on whether they are net food buyers (those that produce less food than they consume) whose real income will be reduced by higher food

prices, or net sellers of food, who will tend to benefit. The urban poor and landless rural workers are generally net food buyers, as, typically, are a significant fraction of poor, small landholders. Given that most of the poor live in rural areas—93 percent of the \$1-a-day poor in East Asia—the poverty effects of the food price increase are most felt in the countryside. In Indonesia, for example, 76 percent of the poor are net rice buyers, including some 72 percent of the rural poor. Here it is estimated that every

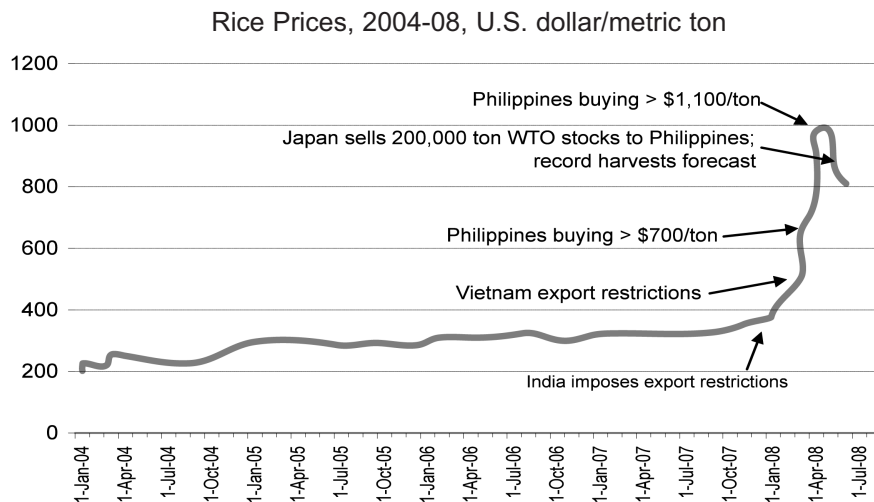
10 percent increase in rice prices reduces the real value of the expenditure of the poorest tenth of the population by 2 percent.

Governments are already using or pondering a whole array of policies to grapple with the sudden surge in food prices. Broadly speaking, these policies can be grouped into four types. There are efforts to 1) shield the most vulnerable through direct cash payments and other safety net measures; 2) reduce domestic food prices by changing trade, tax, and subsidy policies; 3) encourage more efficient food production policies; and 4) use international cooperation to get at the global sources of the problem.

Targeted Cash Transfers

Economists generally argue that direct cash transfers to the most vulnerable groups are the best way to address the current food price crisis. Such transfers help poor house-

holds maintain their purchasing power but avoid some of the problematic side-effects of other policies, like price controls or export bans, which tend to discourage food production by local farmers. Various kinds of cash



transfer programs have been introduced over the past months in both middle and low-income countries including Brazil, China, Ethiopia, Egypt, Indonesia, Mexico, Mozambique, South Africa, Sri Lanka, and Tunisia. Indonesia, for example, introduced a conditional cash transfer program targeted at 500,000 extremely poor families, so long as they take specific actions to improve child care, child nutrition, and education. This program was recently complemented with an unconditional cash transfer program. Several of these countries took advantage of existing schemes which allowed them to rapidly scale up in response to the current food price crisis.

What's the downside? Unconditional cash transfers are sometimes at odds with a popular sentiment that "handouts" will undermine incentives and the work ethic. They are administratively demanding and the fiscal cost may be high for the country's available budget.

That said, these programs may also provide fiscal savings if used to replace more costly and inefficient forms of social protection. In the Philippines, for example, the current rice subsidy scheme is estimated to cost at least Php26.3 billion (about 0.4 percent of gross domestic product or \$650 million). But poor targeting means that the bulk of the benefits go to the middle and upper class, rather than to the poor. The government is now exploring the possibility of replacing that program with a cash transfer scheme.

When cash transfer programs cannot be rapidly put in place (for instance, because of difficulty in targeting vulnerable groups), food-for-work or public works can be used, such as Argentina's *Trabajar* program and the *padat karyas* programs that Indonesia established after the 1997–98 financial crisis. School lunch programs can also improve the food intake of school-age children and (indirectly) their families, although they do not cover all vulnerable groups. Emergency food aid distribution should only represent a temporary measure to quickly assist vulnerable groups when food is hard to obtain in local markets, and until other programs are put in place. The physical transfer of food is costly, often suffers from significant leakages, and may discourage local food production if it becomes entrenched beyond the initial emergency.

Trade and Tax Policies

Many countries are trying to reduce domestic food prices by lowering import tariffs and domestic taxes on food, increasing food price subsidies, and by introducing price controls and export restrictions or bans. Some 24 of 58 developing countries sampled by the World Bank have recently reduced import duties and domestic taxes on food in the wake of rising food inflation. Such measures are not only politically visible, but generally also easy to implement,

explaining their popularity—though they vary in terms of their effectiveness, side-effects, costliness, and equity.

Many countries impose tariffs on food imports to encourage domestic production and boost government revenue. In times of sharply increasing prices, however, cuts in food tariffs and taxes are an easy-to-implement measure that provides relief to consumers, albeit at some fiscal cost. Removal of import barriers allows a country to obtain food at the lowest available cost, whether through imports from the world market or from the most efficient local farmers. (Easing import barriers, however, will tend to discourage domestic production overall.) Some countries have also responded to food price increases by maintaining or extending price controls or consumer subsidies on staples like rice. These measures can be helpful in calming fears and stabilizing market conditions for short periods but have significant long-term costs. Price controls discourage domestic production, are often difficult to enforce, and encourage illegal activity such as black markets. Generalized subsidies on basic food items like rice can easily become a big fiscal cost. Even if they are intended to be a form of social protection for the poor, inadequate targeting often means that middle and upper-income groups reap most of the benefit.

At the same time, a number of grain exporters have also restricted exports as a way of increasing supply and lowering prices in the domestic market. These restrictions (some of which have subsequently been relaxed) reduce earnings and incentives for domestic farmers, while also encouraging smuggling. Perhaps even more importantly, the escalation of pre-emptive and retaliatory export restrictions on rice has played a big part in pushing world market prices through the roof, weakening confidence in the global rice market as a source of food security and fostering calls for protec-

tionism and “self sufficiency” in importing countries—even though such measures would, if anything, further increase domestic food prices. It is notable that Thailand, the world’s largest rice exporter, has avoided export restrictions, thereby cementing its long-term reputation as a reliable global supplier. What is really needed, as we shall see, are cooperative regional and international actions to overcome the recent disruption in the world rice market.

More Grains Needed

High world food-grain prices do create a major incentive for increased production that is necessary to rebuild grain stocks and meet the structural increase in global demand caused by biofuel policies. However, to be effective, high food prices must be transmitted to farmers themselves. This is by no means automatic, given high internal transport costs and the myriad of policies that seek to control markets through mandated grain prices, export restrictions, forcible procurement, or direct government involvement in marketing. Higher world prices will also be much more effective if they are buttressed by policies that reverse the generally declining trend in government, private sector, and donor investment in agriculture in past decades.

Indeed, it is commonly accepted that there is substantial scope for an environmentally sustainable increase in world food production given sufficient investment in better agronomics, a reduction in post-harvest losses, and more efficient water management. Broader use of more effective existing agronomic practices, such as improved nitrogen and potassium management techniques, could increase rice yields in East Asian countries by at least 25 percent (and

by up to 80 percent in some). About 25 percent of the value of the total crop in Southeast Asia could be saved through better post-harvest technology and infrastructure. Irrigation efficiency could be bolstered through better water management, proper incentives, and regulation. Just addressing poor land layout, for example, through adequate leveling and higher embankments to

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retain wet-season water has been shown to increase yields in Cambodia by 27 percent. And, a shift from area-based to volume-based charges for irrigation water in China’s Tarim Basin resulted in a 17 percent decrease in water use. Widespread diffusion of advanced technologies could be fostered through a regional outreach initiative and large-scale demonstration projects in a partnership between countries, the International Rice Research Institute (IRRI), and bilateral and international funding agencies. Public-private partnerships also hold a lot of promise.

Expanding investment in the development of new agricultural technologies will also be necessary. Brazil, Malaysia, and Thailand have made just such investments in recent years, bolstering their productivity and reducing their agricultural risks. China has also rapidly increased its investment in agriculture under its eleventh five-year plan. Many countries, however, continue to under-invest in agricultural research and development. Public R&D spending in developed countries reached 2.36 percent of agricultural

gross domestic product (GDP) in 2000. It was only 0.53 percent in developing countries and 0.4 percent in Asia. Given the long lag time between the discovery, distribution, and adoption of new rice varieties, increasing public spending on agricultural R&D today is critical to sustain staple crop yield gains tomorrow.

Another Urgent Need

There is an urgent need for leadership at the highest political levels to improve cooperation among major food exporting and importing countries and break the self-fulfilling upward price spiral for key staples, especially rice. Indeed, the longer that rice prices stay at the current artificially high levels, the more confidence in the world market as a source of food security erodes. The result? Opportunities for politically influential special interest groups—large landowners, for example—to lobby for protectionist “self-sufficiency” policies that would entrench higher domestic costs for food at the expense of the poor.

Major exporters could, for example, agree on a timetable to relax export restrictions, at least for shipments to the least-developed countries or those in fragile situations. Such steps by one or two major exporters could have an immediate impact on prices and encourage others to follow suit. The announcement in April that Ukraine would relax its wheat export restrictions, for example, contributed to an 18 percent decline in wheat prices. Vietnam removed export restrictions on rice at the beginning of July and the issue of food trade restrictions has also been tabled on the agenda for the Association of Southeast Asian Nations (ASEAN) October meeting.

An immediate release of rice from buffer stocks can also have a big impact in damping prices. Japan currently has around 900,000 tons of U.S. medium-grain rice and

600,000 tons of long-grain rice imported from Thailand and Vietnam surplus to domestic consumption needs. The re-export of this rice from Japan is hampered by agreements with the United States, Thailand, and Vietnam, although in mid-May, Washington agreed that stockpiled rice could be released and re-exported to third countries. So far, however, only 200,000 tons of the stocks have been sold—to the Philippines. China is also currently holding very large stocks of rice, significantly in excess of standard food security guidelines of 18-20 percent of total annual consumption. Beijing, too, can play a key leadership role in global rice markets by releasing a small fraction of these stocks onto the world market, or via donations to affected countries. This could lower world rice prices without affecting domestic inflation or food security.

In the slightly longer term, countries should also consider developing some mechanism to make global food markets more stable and reliable in the future. Fundamental issues of information sharing and trust in world food markets, as well as global management of stockpiles need to be addressed. Agreement on a code of conduct for stock management could help countries avoid costly unilateral actions, such as export bans. Consideration could also be given to strengthening existing WTO rules on the use of export restrictions. Better and more transparent sharing of information on stock management plans among market players could help reduce volatility, as could the use of long-term agreements for stock purchases. Further thought could also be given to the pros and cons of building an internationally coordinated strategic reserve system, at least for humanitarian purposes.

Finally, there is an urgent need for greater international engagement to address the competing demands of energy and food

security. Most analysts agree that biofuel regulations and policies in advanced countries have played an important role in fueling the rise in world food prices. The United States and Europe in particular need to ease subsidies, mandates, and tariffs on biofuels that are derived from maize and oilseeds, while accelerating development of second generation cellulosic products.

But not all biofuels have the same impact on food prices. Increased production of biofuel from sugarcane in Brazil, for example, which has so far been refused entry into the U.S. market, has not led to substantial increases in sugar prices. The estimated production cost of ethanol from sugarcane in Brazil in 2007 was 90 cents per gallon, in contrast to \$1.70 per gallon for maize-based ethanol in the United States; biodiesel is roughly \$4 per gallon in both the EU and the United States. Phasing out production subsidies and reducing tariffs in Europe and the United States would allow biofuel to be produced from the most efficient feedstock by the lowest cost producers. Sugar-based ethanol from Brazil and other developing countries could fuel cars in the United States at a lower cost to the U.S. taxpayer, with greater greenhouse gas and energy savings for the world, while inducing less upward pressures on food prices.

More investment is also needed in the development of second generation biofuel technology to reduce the competition for cropland between food and biofuel production. Preliminary research into new technologies, where cellulose is converted into ethanol from stalks and leaves rather than food sources, shows promising results. Current subsidies, however, reduce the incentives for farmers to invest in cellulosic ethanol instead of maize-based ethanol. Global investment in agricultural research that supports second and even third generation technologies may alleviate the current tradeoffs with food production.

In short, innovative thinking in terms of the entire food chain cycle, particularly centered on the production of rice, could have an outsized impact on the broad availability of the one food that sustains and nourishes more people than any other and could indeed help restore the era of cheap food. ●

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