



Rice price volatility: sustainable policies in Asia and Europe

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Synopsis

The sudden hikes in food prices in 2008-09 have highlighted the vulnerable position of poor households, the ability of various governments to proffer adequate policies, as well as the increasingly critical issue of socially-responsible actors (such as the traders in the global markets). Responses to the 2008 food crises have been motivated by the need to shelter vulnerable income groups from threatening rising poverty levels. Although rice is relatively marginally traded, it bears a strategic importance to many Asian economies, in both production and consumption terms. By analysing the factors that explain rice price changes over the period January 1999 to December 2009, we discuss whether the policies in the rice markets are 'sustainable', in the sense that they help shape socially-responsible strategies by actors (such as traders), be they public or private, in the future.

Introduction and Background

The 2008 food crisis was one of the most important manifestations of the current economic crisis, with food price rises reaching unprecedented levels in post-1945 history. Price hikes were higher in the cereals sector and led to a strong increase in the number of undernourished people. Of all cereals markets, the rice market is the most protected market in the world because of its strategic nature; first, it is a staple food for more than half the world's population; second, it is an income-resource for about two million farmers (concentrated mostly in Asia); third, it is the third largest produced cereal in the world, after corn and wheat. In addition, the rice market is characterised by a high degree of product differentiation, with more than two thousand varieties cultivated in the world. Protectionist tendencies in the rice market go in parallel with the fact that rice is today marginally traded on international markets, in both value and volume terms and when compared with wheat and corn.

Because of its strategic importance, the rice market invites the implementation of sustainable policies, by which we mean appropriate policy measures that help shape socially responsible strategies by the main actors (such as traders) in these markets, be they public or, as is increasingly the case, private. We therefore explore the way socially embedded government policies, at EU and Asian levels, can serve as a benchmark for private corporations' strategies in the future, in the case of the rice market.

In order to minimise the social impact of recent food price rises in the rice market, new policy measures were put in place; these measures can be classified into four broad categories: trade, production, consumption and stock policies.

Examples of recent export policies in the rice market include the ban by India, the world's third-largest rice exporter, on exports of non-basmati rice, and the restriction of basmati rice supplies. China eliminated rebates on value-added taxes on rice exports

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(and on wheat, corn and soybeans) and imposed an export tax on a series of grains and products. Bangladesh, Cambodia, Indonesia and Vietnam all banned rice exports. A number of producer support measures include input subsidies by Bangladesh, China and Indonesia. In order to boost production, Indonesia launched a rice intensification programme involving the State Board of Logistics (Bulog), private companies, banks and groups of farmers. On the consumption side, measures encompass the self-targeting food-for-work programmes in countries such as Bangladesh, Cambodia and India, and emergency food aid schemes in both Bangladesh and Cambodia. School feeding programmes have been implemented in China whereas countries such as Indonesia, Mongolia and the Philippines have sold food at subsidised prices to targeted groups of households. Finally, the accumulation and release of public stocks in order to stabilise domestic food prices have been implemented by Bangladesh, China, India, Indonesia and Pakistan. The Food Corporation of India made record purchases of rice (and wheat) in 2008, allowing it to release sufficient stocks into the domestic market to stabilise prices. Huge stocks had been piled up by Japan too. Fearing that cheap foreign rice would further erode domestic prices (usually about five times the international price), Japan has been storing foreign rice for years, amassing a huge stockpile; at the end of 2007 Japan had 2.29 million tons of rice in storage – 1.52m tons of imported rice and 770,000 tons of domestic rice.

Although EU rice trade represents only a very small percentage of the world's total, and although rice does not have the same strategic impact in the EU compared with Asian countries, the rice market is the object of a common organisation at EU level. A 2003 EU regulation was intended to reduce the intervention price so as to balance demand and supply and compensate farmers for lower incomes, particularly in traditional production areas, with income payments per farm and crop-specific aid.

Methodology

Supply in the rice sector is characterised by the biological nature of the production

process (monsoons in Asia), by the time-lag between production and consumption (between one and four harvests per year) and by the law of diminishing returns (because of limited land). Supply determinants are therefore production costs, profitability of alternative products, existing levels of stocks, and public policy. Some authors contend that the most important factors in the recent rapid rise in food and rice prices, are the large increase in biofuel production and speculation.

We use a regression analysis (OLS method) combining high-frequency data spanning over the period January 1999 to December 2009. The data were drawn from different sources, e.g. the FAO, US Department of Agriculture, World Bank, Bloomberg, Energy Information Administration, and Index Mundi. The dependent variable is the logarithmic of rice price and our analysis focuses on results in the long-run. A dummy variable (DUM) is inserted so as to capture the strength of intervention on policy-makers at the end of 2007. This allows us to distinguish between two periods: the first from January 1999 to December 2007, the second encompassing 2008 and 2009. The variables with potential explanatory power are population, rice production, rice exports (as a percentage of total production), dollar-euro exchange rate, ending stocks, GDP of two groups of countries (namely developing countries, where rice is seen as having a strategic importance, and developed countries where this is not the case) and biofuels.

Outcomes and findings

The results show that futures markets, biofuels, population, ending stocks and other cereal prices are not significant independent variables in the long run. In the second period, only the following variables are statistically significant: the dollar-euro exchange rate and developing-country GDP, both with a positive relationship. The results of the adjusted R-squared show that more than 95 per cent of the variation in rice prices is explained by the regression analysis and that this model has therefore a rather large explanatory power. The sign of the coefficients of developed-country GDP in the first period is negative, implying an inverse relationship between this variable

and rice price changes, and therefore an inferior status and non-strategic role of rice in the basket of a typical household from these countries. This is in sharp contrast with the situation in developing countries, where the relationship between price and GDP is positive and the most statistically significant of all (for both the first and second periods). This result confirms the strategic importance of rice in these countries and justifies the implementation of socio-economic policies protecting the end consumer from erratic price increases. The US\$–Euro exchange rate also has a positive and significant relationship with price in the second period, reflecting the relatively weakening dollar over the period. Since international rice prices are expressed in US\$, a devaluation of the dollar vis-à-vis the euro adds pressure on prices, and the ultimate impact of this devaluation depends upon the exchange rate regime of Asian countries vis-à-vis the US\$. Finally, the negative relationship between rice price and export/production in the second period is a signal of relatively closed international rice markets, as discussed earlier.

In short, our results show that the main independent variables explaining rice price changes are developing-country income (the most statistically significant variable), public policies and US\$–Euro exchange rate. This econometric analysis broadly supports the rationale for the different policy measures taken in the various countries under review, particularly in Asia where vulnerable households have generally been protected with food help programmes. The examples of policy responses to price increases in the rice market show that: (i) governments (mostly in Asia) have implemented timely and sustainable (i.e. socially embedded) policy measures to minimise the incidence of food poverty; (ii) these policies have been targeted at preserving food security; (iii) the extent of the disruption caused by these measures on the international rice market has been contained by the fact that rice is only marginally traded. It follows that if rice markets were to become, like other cereal markets, more open to traders, and in particular private traders, the question of corporate social responsibility in this market would become paramount.

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