Agricultural markets in developing countries

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Abstract

The history of agricultural markets in developing countries reflects attempts to establish the appropriate government responses to the inefficiencies created by incomplete institutional and physical infrastructure and imperfect competition. Government intervention in the 1960s and 1970s to resolve market failures gave way in the 1980s to market-oriented liberalization to 'get prices right' and, more recently, to 'get institutions right'. But markets openness may accentuate the latent dualism of a modern, efficient marketing sector, accessible only to those with adequate scale and capital, alongside a traditional, inefficient marketing channel to which the poor are effectively restricted.

Agricultural markets in developing countries

Markets aggregate demand and supply across actors at different spatial and temporal scales. Well-functioning markets ensure that macro and sectoral policies change the incentives and constraints faced by micro-level decision makers. Macro policy commonly becomes ineffective without market transmission of the signals sent by central governments. Similarly, well-functioning markets underpin important opportunities at the micro level for welfare improvements that aggregate into sustainable macro-level growth. For example, without good access to distant markets that can absorb excess local supply, the adoption of more productive agricultural technologies typically leads to a drop in farm-gate product prices, erasing all or many of the gains to producers from technological change and thereby dampening incentives for farmers to adopt new technologies that can stimulate economic growth. Markets also play a fundamental role in managing risk associated with demand and supply shocks by facilitating adjustment in net export flows across space and in storage over time, thereby reducing the price variability faced by consumers and producers. Markets thus perform multiple valuable functions: distribution of inputs (such as fertilizer, seed) and outputs (such as crops, animal products) across

space and time, transformation of raw commodities into value-added products, and transmission of information and risk. Per the first welfare theorem, competitive market equilibria help ensure an efficient allocation of resources so as to maximize aggregate welfare.

The micro-level realities of agricultural markets in much of the developing world, however, include poor communications and transport infrastructure, limited rule of law, and restricted access to commercial finance, all of which make markets function much less effectively than textbook models typically assume. A long-standing empirical literature documents considerable commodity price variability across space and seasons in developing countries, with various empirical tests of market integration suggesting significant and puzzling forgone arbitrage opportunities, significant entry and mobility barriers, and highly personalized exchange (Barrett, 1997; Platteau, 2000; Fackler and Goodwin, 2001; Fafchamps, 2004). Widespread inefficiencies result from incomplete or unclear property rights, imperfect contract monitoring and enforcement, high transactions costs, and binding liquidity constraints. Such failures often motivate government intervention in markets, although interventions have often done more harm than good, either by distorting incentives or by creating public sector market power. The history of agricultural markets in developing countries reflects evolving thinking on the appropriate role for government in trying to address the inefficiencies created by incomplete institutional and physical infrastructure and imperfect competition. The emphasis in the 1960s and 1970s on government intervention to resolve market failures gave way in the 1980s to market-oriented liberalization to 'get prices right' and, more recently, to a focus on 'getting institutions right'.

Past approaches

Agricultural marketing of most major export and food commodities and of modern inputs – such as fertilizer, machinery and hybrid seed – was historically highly regulated by developing country governments into the 1980s, via input price controls and subsidies, oligopolistic input markets, monopsonistic produce marketing boards, pan-seasonal and pan-territorial administrative commodity pricing, oligopolistic processing industries, and fixed wholesale and retail prices. Commodity prices were generally set below market

levels, implicitly taxing producers while subsidizing consumers. Marketing channels were typically very inefficient, with centralized storage and processing facilities and government-imposed grades and standards for product quality, although these were not always and everywhere enforced. Sometimes these inefficient systems provided satisfactory coordination of marketing channels, but that was by no means universal. Heavy government presence, especially pan-seasonal and pan-territorial producer pricing, and fixed retail pricing systems and bans on private commerce effectively eliminated most incentives for private arbitrage or investment in fixed capital by marketing intermediaries. Meanwhile, management by government fiat too often facilitated corruption, which often had a devastating long-run impact on economic governance.

In addition to state-run marketing boards, producer marketing cooperatives were prevalent in developing countries at all levels of the marketing chain, ranging from credit unions through farmer cooperatives to wholesale-level cooperatives. Credit unions commonly accumulated funds for input purchase or served as intermediaries for government-subsidized credit programmes. Farmer marketing cooperatives typically facilitated bulk input procurement, price negotiation, and sharing of transportation costs. Wholesale cooperatives mainly assembled bulk commodity lots for sale into government processing and distribution channels. Cooperatives have often worked well in specialized production areas distant from major markets, and with homogenous production of not-so-perishable commodities such as coffee. However, due to high administrative and coordination costs, free-rider problems and political interference, cooperative systems have not lived up to expectations in most developing countries, and many have collapsed.

In contrast to the major export and domestic staple food crops, smaller-scale food commodities for domestic consumption, such as indigenous fruits and vegetables, have almost always operated on a free market basis, with little history of state intervention or price regulation. These markets are characterized by many cash, spot market transfers of product between intermediaries en route from producer to consumer, many small, non-specialized and unorganized buyers and sellers, few if any grades or standards, one-on-one (dyadic) price negotiations, poor market information systems, and mostly informal contracts, largely enforced through social networks (Fafchamps, 2004). Such marketing channels depend disproportionately on rural periodic markets prevalent in most of the

developing world, arguably the closest one ever gets to a true ‘free market’: free of government regulation, subsidies and taxes, and lacking public goods such as physical infrastructure, contract law, public market price information systems, or codified product grades and standards. Indeed, they have been termed the ‘flea market economy’ by Fafchamps and Minten (2001).

The emerging problems of state agricultural market control

Given the inherent variability of agricultural production and the significance of agriculture in economic activity and general well-being in developing countries, price stabilization policies were long considered necessary for economic stability. However, a number of problems emerged. First, the fixing of commodity prices below market levels inevitably created a disincentive for agricultural producers. By the late 1970s, low producer prices had led to the stagnation of production and exports and to increased parallel market activity, including cross-border smuggling, in many developing countries, especially in those areas of Africa and Central America that were largely bypassed by the Green Revolution.

The second major problem was the fiscal and political sustainability of government agricultural market interventions. The inefficiencies of parastatal marketing boards, along with the repression of private market intermediation, led to unreliable supplies of consumer goods for politically important urban populations. Moreover, those inefficiencies, combined with the numerous subsidies and frequent corruption within government-controlled marketing channels, became too costly for central governments, which faced massive pressure from international donors in the 1980s and 1990s to trim expenditures and to eliminate price controls (Timmer, 1986).

Economic liberalization: market relaxation and state compression

Market-oriented agricultural policy reforms were a centrepiece of economic liberalization in developing countries in the 1980s and 1990s, commonly within the context of broader structural adjustment programmes designed to restore fiscal and current account balance, to reduce or eliminate price distortions, and to facilitate efficient price transmission so as to stimulate investment and production. The new focus was on re-establishing a close

correspondence between local and world market prices, so-called border parity pricing. The withdrawal of the state from agricultural market intermediation, specifically price discovery, was seen as a necessary condition in getting prices right, itself a necessary condition for improving market efficiency and stimulating investment and productivity growth (Timmer, 1986).

The market-oriented reforms typically implemented by developing country governments included, on the input side, the liberalization of land and labour markets, decontrol and de-licensing of input production, supply and distribution, removal of input subsidies and price controls, closure of loss-making credit schemes, liberalization of credit markets, and reform of agricultural extension. On the output markets side, reforms included commodity price liberalization, the removal of parastatal monopoly power and commodity movement restrictions, and reduction in tariffs and quotas on imports.

The net result of these reforms typically turned on the balance between the pro-competitive effects of reduced government interference in marketing operations – what Lipton (1993) termed 'market relaxation' – and the anti-competitive effects of reduction of public goods and services that underpin private market transactions – what Lipton (1993) termed 'state compression'. Since the two phenomena were typically inextricable in agricultural liberalization initiatives, experiences varied markedly.

The empirical evidence suggests that commodity prices generally increased after market reforms, often stimulating an increase in production, especially of export crops. These price increases also facilitated the emergence of supermarket chains, export-oriented outgrower schemes and export processing zones, and a generalized stimulus to agro-industrialization in developing countries (Reardon and Barrett, 2000; Sahn, Dorosh and Younger, 1997). Increased investment in the downstream marketing channel has transformed the orientation of many agricultural markets from raw commodity towards processed product markets, and with this increased investment came increased competition. In countries such as Chile, India and South Africa, private firms now play a leading role in development of improved seed varieties, producing and distributing inputs, post-harvest processing and modern retailing through supermarkets and restaurant chains (Reardon et al., 2003; Reardon and Timmer, 2005). Both formal and informal

traders entered agricultural commodity marketing channels as government controls fell away, from rural periodic markets all the way through urban retail markets.

However, market entry has tended to be limited to certain marketing niches not protected by capital, information or relationship barriers, with substantial bottlenecks in other areas such as inter-seasonal storage and motorized transportation. Neither widespread entry into market intermediation activities nor workably competitive markets emerged everywhere, let alone quickly. For example, because long-haul motorized transportation in rural markets tends to involve considerable sunk costs and some economies of scale due to poor road conditions and high vehicle maintenance costs, entry into this sector of the markets has often been limited after the removal of legal and policy barriers to entry (Barrett, 1997). Meanwhile, the end of pan-seasonal and pan-territorial administrative pricing has brought increased price risk, with consequences for investment incentives facing both producers and market intermediaries (Barrett and Carter, 1999).

The elimination of input subsidies and removal of government monopsony power in crop marketing has also often led to reduced access to input financing and increased input prices. The withdrawal of parastatals from core input marketing activities created a void that the private sector often failed to fill due to underdeveloped physical communications, power and transport infrastructure, credit constraints and continued bureaucratic impediments that increased transactions costs for input suppliers. In addition, periodic state and donor-funded input programmes have often reduced profitability and frustrated private investments. Input credit schemes by processors have been used in the post-reform period in an attempt to overcome the low input use resulting from these access problems, for example in the cotton sectors of Mali and Uganda and horticultural export sectors of Kenya and Zimbabwe.

Although the level of reform implementation differed from country to country, in many cases reform was only partially implemented and policy reversals were common (Jayne and Jones, 1997, Kherallah et al., 2002). In important food and export markets, liberalization efforts have been prolonged and incomplete, reflecting the difficulty in relinquishing government control in the face of uncertainty and political pressures to intervene in order to resolve perceived inequities or inefficiencies in market performance. For example, parastatals remain active in the West African cotton sector, the southern

African maize sector has not been fully liberalized, and in Indonesia BULOG continues to operate amid private marketing companies. The ebb and flow of market-oriented reforms and the frequency with which governments have engaged in policy reversals has made it terribly difficult to tease out clear patterns in the impact of liberalization measures on the performance of agricultural markets in developing countries.

Post-structural adjustment market reforms

As the weaknesses of reformed agricultural markets in developing countries became evident, development agencies' and governments' focus began to shift from merely 'getting prices right' to 'getting institutions right' so as to address market failures arising from imperfect information, contract enforcement and property rights, and insufficient provision of public goods. Such reforms have used non-price measures in an attempt to develop the public and private institutions necessary for efficient market operations and to reduce transactions costs and business risk.

The post-structural adjustment era has also coincided with international market deregulation through the GATT and its successor, the WTO. Bilateral, regional and global trade agreements have reduced tariff and non-tariff barriers to cross-border flows of raw and processed agricultural commodities, and increased the openness of financial markets, leading to increased capital flow into developing countries, especially in the form of foreign direct investment (FDI). Where structural adjustment reforms had substantially reduced state control over input and output markets, trade and FDI liberalization has paved the way for major investment in post-harvest processing and retailing in developing countries since the 1990s. This 'new' capital investment differs from the structural adjustment era reforms in that whereas the focus previously was upstream, in the input, production, and wholesale sectors, more recent emphasis, especially in private investment, has tended to be downstream, in food processing, retail and restaurant markets. The exceptionally rapid diffusion of supermarkets in developing countries, in particular, has also been driven by improved coordination and communication technologies in addition to increased urbanization, lower prices of processed goods, increased per capita incomes in developing countries, as well as saturation and intense competition in foreign firms' home markets (Reardon and Barrett,

2000; Reardon et al., 2003). In Latin America, for example, supermarkets currently account for 50–60 per cent of national food retail sale, compared with only 10–20 per cent in the 1980s (Reardon et al., 2003; Reardon and Timmer, 2005).

The rise of supermarket and restaurant chains has changed the fundamental structure and operations of agricultural markets significantly, directing far more market power downstream, often to chains wholly or partly owned by multinational corporations. Commodity procurement by retailers has become more centralized, with consolidated buying points at a regional, even global, level. It is not uncommon for a major supermarket chain located in three different countries to consolidate its procurement in a few large growers in just one of those countries. Global food chains have also established regional procurement nodes – for example, Walmart throughout Asia and Latin America – and in-country commodity procurement for regional firms such as the China Resource Enterprise has been centralized from individual store level to provincial systems (Reardon et al., 2003). These structural shifts have increased contract farming and outgrower schemes between agro-industrial firms and farmers in developing countries, and production of non-staple foods has increased.

Increased foreign investment in agricultural markets in developing countries, however, has produced conflicting results. Increased industrialization of agricultural markets has fostered improved market efficiency and competitiveness, integration of formerly fragmented markets, product diversification through differentiation, and value addition and technology transfer. However, the rapid pace of structural change, with some developing countries accomplishing in a few years what developed countries accomplished over decades, has left limited room for adjustment by smaller, less well-informed and poorly capitalized market actors to new ways of doing business. There is thus growing concern that market openness may lead to the replacement of traditional processors by oligopsonistic multinationals, accentuating the latent dualism of a modern, efficient marketing sector accessible only to those with adequate scale and capital, alongside a traditional, inefficient marketing channel to which the poor are effectively restricted. The tendency towards selection of a few medium- to large-scale firms or producers capable of delivering consistent quality product at large volumes has toughened competition for structurally inefficient producers, and seems to have led to

some crowding out of smaller producers (Reardon and Timmer, 2005). Local informal wholesalers and retailers have found themselves having to compete with bigger firms, both for the more efficient producers offering consistent product quality and throughput volumes, and for consumers seeking more services. The emergence of big, concentrated downstream private marketing intermediaries could also potentially lead, once again, to non-competitive agricultural marketing channels, effectively replacing government with private market power.

Increased contract farming, while offering significant potential for smaller growers in the form of guaranteed markets and prices for their produce often coupled with input credit and extension service, has evidently also reduced farmer bargaining power in negotiating contract conditions. These negotiations now take place bilaterally, between individual farmers and the large contracting firm, rather than via collective bargaining by farmer associations with government parastatals.

Conclusion

Agricultural markets play a crucial role in the process of economic development. Yet, by virtue of the spatial dispersion of producers and consumers, the temporal lags between input application and harvest, the variable perishability and storability of commodities, and the political sensitivity of basic food staples, agricultural markets are prone to high transactions costs, significant risks and frequent government interference. The relative power of developing country governments and private domestic or multinational firms in agricultural markets has varied over time. But the fundamental functions of input and output distribution, post-harvest processing and storage, as well as the persistent challenges of liquidity constraints, contract enforcement and imperfect information, have characterized agricultural markets in developing countries under all forms of organization.

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See also agriculture; agriculture and economic development; development economics; dual economies; foreign direct investment; marketing boards; spatial market integration; transaction costs

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