

Understanding Agricultural Commodity Markets

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In recent years, agricultural markets in India have grown in size and complexity, not only in terms of volumes and commodities traded but also in terms of regulatory reforms and a proliferation of new marketing channels and arrangements, with new and evolving roles played by both state and private players. A new generation of theoretically-grounded empirical research is urgently needed to make sense of these rapidly changing agricultural markets and their linkages. Such a renewed agenda, moreover, must both build systematically on the insights of previous work and engage with the new and emerging features and forces shaping diverse commodity markets and regions. The papers in this special issue make a small contribution in this direction.

India's vast system of agricultural marketing and distribution is at the heart of some of the most politically volatile and hotly contested areas of public policy in the country today. The current battle over foreign direct investment (FDI) in the retail sector has been pitched as a fundamental decision on the future of Indian agriculture and the character and control of its diversifying foodways. Closely related, the ongoing processes to amend or even abolish the Agricultural Produce Market Committee (APMC) Act, and the scope and pace of marketing reforms have generated considerable national and state-level debate. Foodgrain markets and their management are also central to the vital and pending decision on the final form of the National Food Security Bill, even as alternatives to the current public procurement and distribution system are being increasingly debated. All of this, moreover, has been gathering pace and profile over the last few years in the face of rising food inflation. Whatever one's position, the intensity of these debates reflects the high economic and political stakes of intervening in agricultural markets and their critical role in determining the livelihood and food security of millions of Indian farmers, traders, retailers, labourers and consumers.

With the spotlight on this vital sector of the economy, this is a particularly exciting time to have an opportunity to assemble a special issue of the EPW on agricultural commodity markets. It is also a rather anxiety-provoking one. First, this is because the rapid marshalling and extrapolation of a whole range of data and quick-fire analysis to bolster different political positions makes it difficult to find the space for more substantive engagement with the definitive feature of India's agricultural markets: their remarkable diversity, complexity and dynamism. The challenge is compounded by the very inadequate and uneven body of field-based scholarship that exists on agricultural markets in contemporary India, especially since they are not easily analysed from afar or powerfully illuminated from available statistical data alone. This gap is indeed surprising since rich historical material exists on the role of commodity markets and agricultural trade in Indian history, and the extraordinary diversity and differentiation of the agricultural landscape and the long and uneven processes of commercialisation (Habib 1999; Bayly 1983; Subrahmanyam 1995, 1990; Ludden 2005; Raj et al 1985). In the study of postcolonial India too, especially as the green revolution unfolded and gathered pace from the mid-1960s to the mid-to-late 1980s, across the disciplines of history, economics, sociology, social anthropology, and politics, variations in agrarian structure and the dynamics of agrarian change have been subjects of deep intellectual concern and debate, for which the EPW has been a vital

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intellectual forum.¹ More recently, the intensifying agricultural crisis in many regions of India, especially as unravelled in the 1990s – and in which markets have played a vital part – has been critically examined and extensively reported upon – (Reddy and Mishra 2010; Deshpande and Arora 2011). At the same time, agricultural markets have also grown in size and complexity, not only in terms of volumes and commodities traded, but also in terms of regulatory reforms and a proliferation of new marketing channels and arrangements, with new and evolving roles played by both state and private players.² Today, a new generation of theoretically-grounded empirical research is urgently needed to make sense of rapidly changing agricultural markets and their linkages. Such a renewed agenda, moreover, must both build systematically on the insights of previous work and engage with the new and emerging features and forces shaping diverse commodity markets and regions.

Understanding Structure and Dynamics

The collection of papers presented here attempts to make a small contribution to this cause. At the outset, this is a far from comprehensive or even adequately systematic exploration of the subject. It does, however, represent an effort – and an invitation – to try to better understand the structure and dynamics of agricultural markets and to examine more closely critical facets of the major policy decisions being so hotly debated at the present time. A mix of review essays and recent primary research, the articles cover a range of commodity configurations in diverse regional contexts and address various aspects of the marketing system, practices and relations. Even as they draw on different disciplines, methods and scales of analysis, they begin from an acknowledgement that empirical specification is a general requirement when trying to illuminate the workings of agricultural commodity markets and their linkages. At the same time, empirical research and data collection need rigorous theoretical frameworks that can sustain and not simplify away the persistent complexity and contradiction that characterise these markets.

To this end, Muhammad Ali Jan and Barbara Harriss-White embark on a review of the literature on agricultural commodity markets in India, especially in relation to the three vital roles that they argue these markets play: those of efficiency, extraction, and exploitation. Examining the strengths and weaknesses of different approaches, they develop the case for a theoretical framework for markets as complex systems and draw upon field research over four decades to provide insights into the internal complexity and linkages of commodity markets. In particular, they identify three dimensions critical for analysing markets as systems. First, how the system works in itself – through its elements – firms, their social organisation; technologies and sites; through its relations – flows of commodities and money; and through its regulative practices – state and non-state – and shock-absorbing practices. Second, how it works in relation to agricultural production including the control of the labour process, the flows of commodities and money. Third, how the structure and relations of marketing change

over time. This framework enables us to better place a number of these elements when they are later analysed in specific empirical contexts in the articles that follow. Finally, the authors argue, that a holistic view of markets, can assist realistic policymaking in a context where state intervention is already thoroughly implicated in the marketing system and its dynamics, but equally where growing calls for the removal of such intervention, in terms of “deregulation” must be more accurately understood as pushes towards “re-regulation” in favour of capital.

Policy Interventions

Policy interventions in agricultural markets are the focus of Ramesh Chand's paper, which reviews the content and performance of various agricultural market policies implemented in India since the early 1960s. In doing so, Chand provides an assessment of a range of measures and forms of state intervention – regulatory and legal instruments (most importantly, the APMC Acts and the Essential Commodities Act), market infrastructure, institutions, supply chains, alternative marketing models and agricultural price policy. As agricultural marketing is a state subject, he notes that changes have been implemented unevenly across different states and commodity markets, with some significant achievements and many persistent problems. The essay emphasises the need for a competitive environment, strong physical and institutional infrastructure and a responsive regulatory system for markets, and specifies its key elements and enabling conditions. While the challenges remain severe, Chand also presents a number of directions for reform, emphasising that no single approach will work and multiple mechanisms, channels and institutions need to be strengthened and activated.

The presence and penetration of such diverse institutions and marketing channels on the ground is certainly evident in the five papers that follow. Abhijit Banerji, Neha Gupta and J V Meenakshi raise the important question of the impact of open auctions on the price received by farmers. This article builds a range of hypothetic scenarios and conducts a set of thought experiments based on surveys conducted in the grain markets of north India to test the extent of collusion in markets, which can potentially lower the prices received by the farmer. Their results show that on the whole, the auction mechanism is beneficial to farmers. They also observe that the introduction of new markets by private firms for direct purchase of grain from the farmers actually end up in either bypassing or completely doing away with the auction system. Their key message is that “auctions matter” both for engendering efficient outcomes in given markets and in mediating the impact

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on farmers of new markets that may be set up without an auction mechanism. This forcefully brings back the point that we need to look at the actual mechanisms of price formation and discovery in agricultural markets while discussing APMC reforms. As the authors note, the role of auctions is not adequately mentioned or mandated in the Model APMC Act, but should be a critical element of state regulation of primary markets for wheat and paddy. It would be very useful to extend this study of auctions to other kinds of agricultural commodities, to investigate the role of auctions in allocating different qualities of produce sold in a multi-buyer market, and to examine the relative benefits of newer auctioning techniques, such as e-tenders and online auctions that are being gradually introduced in different contexts.

State as a Buyer

While Banerji et al look at the state as a regulator, Mekhala Krishnamurthy's article looks at it as a buyer. One of the significant developments in foodgrain markets has been the substantial presence of the state as a buyer. One of the more recent, and still largely underexplored aspects of this process, is the rapidly changing landscape of government procurement. Based on ethnographic fieldwork conducted in one such "non-traditional" procurement site, Madhya Pradesh, she argues that the major decentralised procurement operation in the state, implemented over the last five years and deploying the government's own marketing agencies and agricultural cooperative societies, is dramatically altering the dynamics of wheat marketing. Interestingly, in contrast to the Banerji et al paper, in the Krishnamurthy paper the state is the dominant buyer in the wheat market, with state agencies buying directly from farmers at a fixed price higher than the market price, suspending the need for a multi-buyer auction for most of the produce sold in the *mandi*. The fixed price, however, triggers a whole range of fluctuating market practices and the article analyses in detail the micro-processes associated with market transactions, such as the timing and duration of procurement within a particular agricultural cycle and in relation to specific commodity characteristics, the different modes of payment, forms of documentation, and the circulation of *parchis* or transaction slips. These micro-processes have a crucial bearing on market participation and outcomes at different times. The rapid expansion, in terms of volume and spatial distribution, in Madhya Pradesh is important in the context of targets, processes and capacities needed to be met under the pending food security legislation, and also raises urgent questions on the distribution of the benefits from public procurement, and possible extension to other crops and regions.

From foodgrains, auctions and state procurement, the next two papers shift the focus to new commodity complexes, the new corporate interface and contract farming arrangements. Here, Sudha Narayanan's article analyses the emergence of new commodity complexes in interior Tamil Nadu, focusing on gherkins, marigold, broiler, cotton and papaya. Setting this "meso" level study firmly in the context of the structural changes in Tamil Nadu agriculture and describing the

particular trajectories of each commodity, Narayanan shows how all five commodities share three characteristics: first, they incorporate strong links to agribusinesses and, further downstream, to global markets; second, downstream players exert an unprecedented influence and control over on-farm production practices; and third, the need for control over quality demands particular transactional forms such as contract farming to maintain the system. The paper vividly reveals the ways in which the transaction interface between the farmers and agri-business is a deeply contested terrain, involving issues of protection of farm incomes, sustainability, enforcement of contracts, quality control and downstream market risks. Tracing how the market system evolved in response to crisis in the sphere of production, the paper simultaneously shows how new commodities alter an already existing market system and how regulation of both farms and firms have to be commodity-specific.

Market Failure and Contracts

While Narayanan shows that contractual arrangements arise as a response to production, Sukhpal Singh views them as a response to market failure. Singh's paper focuses his attention on recent and emerging experiences with contract farming from the perspective of smallholder farmers. Here, drawing on evidence from different parts of India, he finds that small farmers are significantly excluded from current contract farming arrangements, except in a small number of commodities. In such contexts, far from eliminating the need for intermediation, Singh argues that smallholder participation in contract farming requires investments in and the building of new kinds of institutions and collectivities, such as cooperatives and producer companies not only as aggregators but crucially as organisational support in dealing with contractual relations and new forms of market risk. Singh also emphasises the importance of increased state regulation, not only in the structuring and implementation of contracts, but critically in ensuring the presence of a well-functioning system of markets (including auctions), especially since in most cases supermarkets and contract farming agencies use APMCs to discover prices. This leads to a contradiction that emerges from Singh's analysis: on the one hand, contract farming is viewed as the result of "market failure", but, at the same time, these new interfaces and arrangements require well-regulated and functioning primary markets if they are to function effectively. Interestingly, both Singh and Chand remark on the non-existence of privately-run markets (as opposed to direct, contract-based purchases) even where regulations have made these possible, making local APMCs, no matter how problematic, the only regulated multi-commodity and multi-buyer markets currently on the ground.

Futures markets in agricultural commodities is a hotly debated topic. Sahadevan's paper argues in favour of a strong regulatory mechanism in commodity exchanges, something similar to the Securities and Exchange Board of India (SEBI) in stock markets. The paper shows that agricultural commodities have already lost their prominent position in futures markets

to bullion and other metals and lately to energy products. Most of the commodities where futures are allowed have failed to generate a significant volume of trade. Still, the problem of market volatility harming the farmers is high because the markets are likely to grow in importance. The processes by which the financialisation of agriculture proceeds and its implications need to be carefully examined. They seem to involve two related emerging developments. As Harriss-White and Ali Jan note in their review in this issue, "Unlike the earlier waves of agribusiness capital, today's agribusinesses bind agricultural marketing firms to portfolios in unrelated sectors of the economy". At the same time, commodity futures make large financial players with few, if any, direct stakes in agricultural production and processing, potentially important actors in the contemporary workings of agricultural markets. Moreover, while regulation is an important issue, the crucial relation between spot and futures markets remains to be explored in detail. As the Abhijit Sen Committee (GoI 2008) argues, an efficiently functioning futures market presupposes efficient and spatially integrated spot markets. Efficient spot markets require integration across geographical space, which in turn requires rural communication, transport and storage infrastructure. More research is needed on the role of futures trading in geographical integration of markets and in better price discovery by farmers.

Critical Perspectives

Taken together, these papers provide critical perspectives on some of the forces that are actively shaping the structure and social relationships of commodity markets in India today. They

reiterate the importance of a layered, commodity-based and region-specific understanding of markets. They bring out strong links between production structure and markets. Some of the papers show how power in a marketplace is constantly expressed and continually reproduced through practices such as auctions, contracts, quality control, weightment and modes and timing of payments. These papers also continuously engage with the state and the multiple, often competing and contradictory, roles that it plays in agricultural markets.

Moving forward, much more work needs to be done in what remains a fascinating but astonishingly understudied area for research. We need, for example, good collaborative and comparative studies across a greater range of commodities (pulses, oilseeds, sugar cane, non-timber forest produce, cotton and plantation crops), agro-ecological regions and regulatory regimes. Research is needed on the old and emerging institutions and sites of transformation (such as cooperatives, producer companies, supply chains and networks, *mandis*, private market yards, electronic commodity exchanges), and on the dense connections between agricultural commodity markets and the process of rural and urban transformation. An interesting but difficult idea to explore is how changing patterns of livelihoods and consumption in particular influence and interact with the character and behaviour of markets in contemporary India. Finally, new research is also needed to explore how shifting occupational and settlement patterns and altering natural resource landscapes interact with agricultural markets. These linkages, already intricate, are only likely to intensify, and we must find much more grounded and creative ways to engage with, rather than ignore, their complexity and consequences.

NOTES

- 1 Much of this literature is reviewed in the article by Muhammad Ali Jan and Barbara Harriss-White in this issue.
- 2 Agricultural markets now handle much higher volumes of a wide range of agricultural commodities every day. On account of an increase in production as well as a rise in the ratio of output marketed to total output, the marketed quantities of cereals has gone up by 10 times, oilseeds by 4.6 times, milk by 5.3 times and poultry products by 15.4 times (Acharya 2004). Moreover, there is a large but highly fragmented network of over 7,000 regulated market yards and over 27,000 rural periodic markets across different states.

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Survey

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Experimental Economics: A Survey

by

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Over the past few decades, experimental methods have given economists access to new sources of data and enlarged the set of economic propositions that can be validated. This field has grown exponentially in the past few decades, but is still relatively new to the average Indian academic. The objective of this survey is to familiarise the Indian audience with some aspects of experimental economics.

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