



**INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI
SHORT ABSTRACT OF THESIS**

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Thesis Title:

MOVEMENT OF AGRICULTURAL COMMODITY PRICES IN POST-REFORM INDIA

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SHORT ABSTRACT

At a time when several Asian countries are reeling under acute agrarian distress, this dissertation focuses on India to conduct disaggregated uni-variate time-series analysis on the behaviour of prices for four major agricultural commodities produced in the country. The study specifically analyses two important time-series components, viz. seasonal variations and irregular fluctuations (or volatility). To meet its objectives, the study examines prices reported in over 300 wholesale markets (*mandis*) across the country and uses monthly data spanning more than a decade (2003-2016). In order to obtain reliable and robust results, care has been taken not to compromise on the methodological rigour. Towards this end, the work has adapted from recent contributions made to the literature on price-behaviour estimation for agricultural commodities. The research objectives taken up in this study have been guided by a critical review of the academic literature.

When commodity prices are low in general, the nature of intra-year variability has crucial implications for farmers as the price received against harvest is a basic determinant of their income-streams. If primary agricultural-markets are prone to large seasonal price drops, it is an indication that certain constraints may be inhibiting farmer-sellers from behaving as rational economic agents. To obtain the estimates of price-seasonality, the dissertation tests harvest-pattern based specifications of seasonality (viz. trigonometric and saw-tooth functions) against an unrestricted dummy-variable specification to reduce estimation bias. The results show that there is a considerable variation in magnitudes of seasonal price gaps across space and commodity. In several cases, the seasonal price drops in domestic markets are higher than in international prices. Further, a cross-sectional analysis of the estimated seasonal gaps over socio-economic indicators reveals that the magnitude of the seasonal price drop has a direct

relationship with the proportion of resource-poor smallholders in the district to which a particular *mandi* belongs. Thus, the study infers that the smaller farmers are the ones who mostly engage in the sub-optimal behaviour of “sell-low”. And this leads to a glut in the market. Thus, they are the ones who receive the lowest price for their produce. Given their high economic vulnerability, negative shocks to income-streams of smallholder households may threaten their livelihood sustainability. Therefore, this finding raises critical concerns and calls for policy makers’ attention.

Since the global food-crisis of the last decade, volatility in food prices has become a major concern world over (Gilbert & Morgan, 2010; Ott, 2012; Bathla, 2012; Tripathi, 2014; Baffes & Haniotis, 2016; Gilbert et al., 2017). Although, volatility, in itself, is a short-run phenomenon, it can have adverse long-run implications in a country like India, which is teeming with resource-poor farmers. Therefore, this dissertation engages in a detailed investigation of the nature and degree of volatility in realised wholesale prices across the country. To accommodate for the possibility of time-changing variance, the study uses appropriate pre-estimation tests on each of the individual *mandi*-level series under study. Wherever the variance is non-stationary, a suitable generalised autoregressive conditional heteroscedasticity (GARCH) model has been identified to obtain an estimate of the price volatility. The findings, once again, highlight the wide dispersion in both the nature and magnitude of commodity price volatility across the country. On an average, for most of the commodities under study, the domestic market volatility estimates are close to international levels. Several markets also show evidence of time-varying volatility with marked clustering and persistence. Based on its findings, the study concludes that effective delivery of policy necessitates location-specific approaches. The diversity observed in price behaviour (both across and within the different states of the country) is an important contribution of this dissertation. It points out that certain locations are in more urgent need of policy support than others. Thus, continuing with blanket policy responses to the agrarian crisis may end up aggravating existing inequalities.