Onion market dynamics: insights into price trends and integration patterns across major markets in India

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The present study investigates the price behaviour, structural breaks, price cointegration and price transmission in major onion markets of India in light of the COVID-19 pandemic. The findings of this study revealed that seasonal price indices were highest in November for southern region markets. A major structural break in the selected markets was noted in August or September 2019, showing that the structural break did not align with the COVID-19 pandemic lockdown period as anticipated. Further, the study found 11 cointegration equations at 1% significance level by trace test, indicating long-term cointegration in onion markets despite their geographical segmentation. Some markets exhibited bi-directional or uni-directional influences of prices on other selected markets, with Delhi showing the highest number of bi-directional influences. Additionally, the impulse response function revealed that the Delhi price shock had a positive effect up to seven periods, which later became a follower.

Keywords: COVID-19 pandemic, impulse response function, price transmission, onion market, seasonal price

However, the onion market exhibits high volatility, characterized by fluctuating prices due to multiple factors such as seasonal production, inelastic demand and supply shocks resulting from excess rainfall or drought[4]. The onion prices are also influenced by other attributes such as variety, size, shape, moisture content and colour[5].

Understanding the seasonal price variation, integration and price transmission in onion markets is paramount for both onion farmers and stakeholders in the market. Similar concerns have been articulated for major onion markets in India in various studies[4–17]. Examining the post-COVID-19 landscape of onion markets is pivotal for informing policy decisions. In this study, we focus on price behaviour, structural breaks, price cointegration and price transmission in major onion markets of India in light of the COVID-19 pandemic.

Data and methods

For the present study the 12 major onion markets in India,