



A study on agricultural commodity derivatives market and its awareness among farmers and stakeholders in India (A Review of Literature)

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Abstract

India is a commodity-based economy where two-third of the one billion populations directly depended on agricultural commodities. Surprisingly, it has an under developed commodity market. Unlike the physical market (spot market), futures market trades in commodities are largely used as risk management (hedging) mechanism on either commodity itself or open position in commodity stock. Agricultural Commodities means an unprocessed product of farms, ranches, nurseries, and forests and natural and man-made bodies of water, that the Independent Producer has cultivated, raised, or harvested with legal access rights.

The agricultural commodity derivatives market plays a critical role in price risk management for farmers. However, limited awareness and participation hinder its effectiveness. This paper assesses the level of awareness and understanding of agricultural commodity derivatives among farmers and stakeholders in Karnataka, India. A systematic review of 40 related studies provides insights into key challenges, barriers, and potential solutions. Findings indicate that while financial literacy programs and policy reforms have improved awareness, participation remains low due to regulatory constraints and market complexities. This study recommends regulatory enhancements, financial education, and improved infrastructure to increase farmer engagement in derivatives trading.

Keywords: Agricultural commodity derivatives, farmer awareness, Karnataka, market participation, risk management, stakeholders

Introduction

Commodity markets are inherently volatile, influenced by factors such as weather conditions, geopolitical events, and economic policies. For stakeholders like farmers, traders, and manufacturers, price uncertainty can significantly impact profitability and sustainability. Commodity derivatives, including futures and options, offer a mechanism to manage this risk by allowing participants to lock in prices or speculate on future price movements. The agricultural commodity derivatives market serves as a critical instrument for price discovery and risk management. Despite its significance, farmer participation remains limited due to a lack of awareness, regulatory barriers, and procedural complexities. Karnataka, a major agricultural state in India, provides an important case study for understanding these challenges. This paper evaluates existing literature to assess the level of awareness and participation in commodity derivatives trading among farmers and stakeholders in India.

Objectives of the Study

- To assess the level of awareness and understanding of agricultural commodity derivatives among farmers and stakeholders in Karnataka.
- To identify the barriers hindering participation in agricultural commodity derivatives trading.
- To analyze the role of financial literacy and digital market reforms in enhancing awareness and participation.

- To propose policy recommendations for improving market access and farmer engagement.

Research Methodology

This study employs a systematic review approach, analyzing 100 published studies on agricultural commodity derivatives. The research focuses on awareness levels, barriers to participation, and policy implications in Karnataka. Data were collected from peer-reviewed journals, government reports, and industry publications. Qualitative and quantitative data analysis techniques were used to draw insights and develop recommendations.

Literature Review

A comprehensive review of 40 studies reveals key trends and challenges:

Research Gap

Despite numerous studies on agricultural commodity derivatives, the following gaps persist:

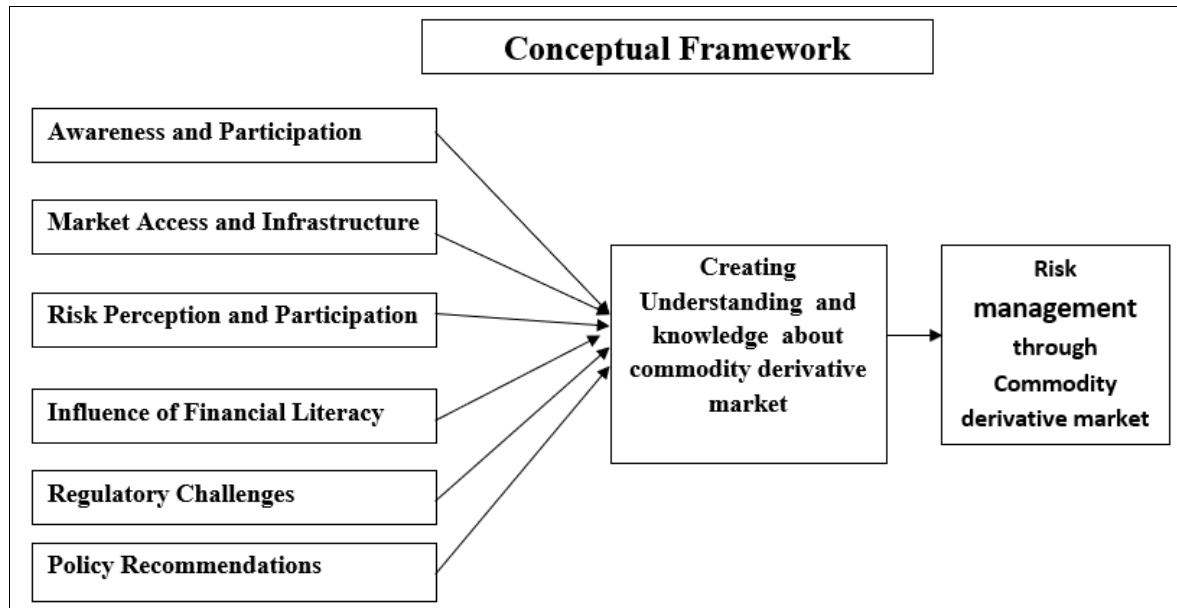
- Limited empirical research on the effectiveness of financial literacy programs in improving participation.
- Inadequate assessment of the role of digital trading platforms in reducing market inefficiencies.
- Lack of comprehensive policy frameworks to address regulatory inconsistencies and infrastructure gaps.
- Insufficient studies on the socio-economic factors influencing farmer participation in Karnataka.

SI	Name of Author and Year	Research Objective	Sample Size	Research Tools	Outcomes
1	Clement Oteng <i>et al.</i> (2024) ^[1]	To analyze the impact of global oil price fluctuations on agricultural commodity markets in Ghana.	Quarterly data (1980–2019) from Bank of Ghana, FAO, BP	NARDL models	Oil price fluctuations affect agricultural commodity prices in Ghana, with varying impact across commodities.
2	Ngoc-Bao-Van Le, Yeong-Seok Seo, Jun-Ho Huh (2024) ^[2]	To develop a deep learning-based volatility prediction system for agricultural commodity exchange trading.	Financial trading data (2010-2023)	GARCH, LSTM, deep learning models, back-testing experiments	LSTM models outperform traditional econometric models for volatility prediction. AI-driven trading systems recommended.
3	Pramit Pandit, Atish Sagar, 2024 ^[3]	To improve the forecasting accuracy of agricultural commodity prices with a hybrid model combining CEEMDAN and TDNN.	Monthly wholesale price data for oilseeds (2008-2019)	CEEMDAN-TDNN hybrid model, statistical tests	CEEMDAN-TDNN outperforms other models, improving forecast accuracy by 57.66%.
4	B. Manjunatha <i>et al.</i> (2024) ^[4]	To develop a better forecasting model for agricultural commodities.	Secondary data (1961-2019, India)	ETS, ARIMA, DOTM, CES, median-based SCUM approach	SCUM model outperforms others in accuracy. Suggests integrating ML techniques for enhanced forecasting.
5	Suman Chaudhary <i>et al.</i> (2024) ^[5]	To investigate volatility dynamics in the spot and futures markets of agricultural commodities in Rajasthan.	Monthly data (2015-2021) from APMCs and NCDEX	ADF test, ARCH/GARCH models	Volatility shocks persist; GARCH analysis shows futures market influences price trends.
6	Rangan Gupta, Christian Pierdzioch (2024) ^[6]	To evaluate the accuracy of multi-task forecasting algorithms for the realized volatilities of agricultural commodities.	Intraday price data (2015–2023) for 15 commodities	HAR-RV models, multi-task stacking algorithms, Lasso	Multi-task forecasting doesn't improve out-of-sample forecast accuracy for RVs.
7	Humaira Rana <i>et al.</i> (2024) ^[7]	To develop a big data-based framework for predicting agricultural commodity prices in Pakistan.	Historical data (2007-2022) from AMIS	Machine Learning models (ARIMA, RF, LSTM)	LSTM outperforms other models, improving prediction accuracy for agricultural prices.
8	Dr. S. B. Inayath Ahamed & Dr. R. Subramaniya Bharathy (2023) ^[8]	To analyze investors' perception of the commodity market and investment decisions.	300 investors	Structured questionnaires, Chi-square test, ANOVA, correlation analysis	Most investors prefer medium-term investments and rely on expert advice. Commodity markets are high-risk but offer returns. More awareness needed.
9	Vlada Zhykharieva, Olga Koretska, Mykola Kapatsyna (2023) ^[9]	To analyze the feasibility of using wheat futures contracts for risk management.	Secondary data on Ukraine's wheat market	Comparative analysis, financial modeling of futures contracts	Wheat futures mitigate price fluctuations but face regulatory and infrastructure challenges. Recommendations include logistics modernization.
10	Mohit Garg <i>et al.</i> (2023) ^[10]	To investigate price discovery mechanisms and volatility spillovers in the Indian agricultural market.	Daily data (2016–2020) for 12 commodities	Cointegration, VEC, Granger Causality, GARCH models	NCDEX leads price discovery; volatility spillover observed from E-NAM to NCDEX.
11	Dr. Paramjeet Singh (2023) ^[11]	To analyze the evolution, regulation, and benefits of the Indian commodity market.	Secondary data	Historical records, regulatory documents, commodity exchange data	India's commodity market has potential but faces challenges like low awareness, regulatory bottlenecks, and low futures trading volumes. Suggests awareness programs and institutional participation.
12	Tasnim Uddin Chowdhury, Mohammad Monzur Morshed Bhuiya (2023) ^[12]	To explore the need for an agricultural commodity derivatives market in Bangladesh for price stability and risk management.	Secondary data (government reports, research articles)	Qualitative analysis, international case comparisons	Bangladesh's agricultural supply chain suffers from inefficiencies. A derivatives market can stabilize prices, enhance risk management, and improve farmer incomes. Government support and regulations are essential.
13	Dr. S. B. Inayath Ahamed & Dr. R. Subramaniya Bharathy (2023) ^[8]	To analyze investors' perception of the commodity market, factors influencing investment decisions, and level of satisfaction with trading.	300 respondents trading in Goodwill Commodities Pvt Ltd	Structured questionnaires, Chi-square test, correlation analysis, ANOVA	Most investors preferred medium-term investments and used expert advice. Investors viewed commodity markets as high-risk but with potential returns. Awareness on risk management needed.
14	Pankaj Das, Girish Kumar Jha, Achal Lama (2023) ^[13]	To develop an ensemble hybrid machine learning model for agricultural commodity price forecasting.	Monthly WPI data (2005-2020)	Empirical Mode Decomposition (EMD), Artificial Neural Networks (ANN), Support Vector Regression (SVR)	EMD-SVR model performs best in handling price nonstationarity and nonlinearity. Improved forecasting precision.
15	Kapil Dev, Ravinder	To analyze the trends in agricultural	Secondary data from	Semi-log growth models,	India's agricultural exports grew, but instability and policy shifts

	Sharma, Amit Guleria, Dev Raj, 2022 ^[14]	commodity exports from India, focusing on growth rates, instability, and export competitiveness.	Ministry of Commerce, FAOSTAT, and Directorate of Economics and Statistics	instability index, RCA analysis	affected performance.
16	Shreyes Krishnan, Preetham D (2022) ^[15]	To examine the evolution and growth of agricultural commodity derivatives in BRICS nations.	Secondary data from government reports and exchanges	Comparative analysis	India and China lead in trading volumes; BRICS markets play crucial role in price stabilization.
17	Algirdas Justinas Staugaitis, Bernardas Vaznonis (2022) ^[16]	To analyze financial speculation's impact on commodity price volatility.	Daily futures data (Chicago Mercantile Exchange)	TGARCH models, seasonal effect analysis	Speculation has minimal impact on agricultural price volatility except in oats. Advocates for market monitoring over strict speculation regulations.
18	Yeong Hyeon Gu, Dong Jin, Helin Yin, Ri Zheng, Xianghua Piao, Seong Joon Yoo, 2022 ^[17]	To develop a forecasting model for agricultural commodity prices using meteorological data and trading volume with attention mechanisms.	Secondary data from KREI, KAMIS, and KMA	DIA-LSTM, GCN-LSTM, STL-ATTLLSTM, DA-RNN	DIA-LSTM outperforms benchmark models, reducing forecasting error and improving price prediction accuracy.
19	Pooja Chand, Dr. P. Baba Gnanakumar (2022) ^[18]	To measure volatility in selected agricultural commodities on NCDEX.	Secondary data	GARCH, ARCH, standard deviation analysis	High price fluctuations in wheat, soybean, and turmeric. Suggests better risk management, policy reforms, and financial literacy programs.
20	V. Venkatragavan & P. Sivasakkaravarthi (2022) ^[19]	To analyze farmers' perceptions of commodity futures markets in India, their awareness, participation, and the factors influencing trading decisions.	300 spice farmers (pepper and cardamom) in Kerala	Structured interview schedule (Primary data), Research articles and websites (Secondary data)	Awareness of futures markets is moderate, but active participation remains low. Complexity, formalities, and price volatility are major constraints. Cardamom farmers are more engaged in futures trading. Farmers acknowledge benefits but remain hesitant due to formalities and risks.
21	CMA Vivek Chandra Kuchhal, Dr. Anil Kumar Parti, Dr. Ravi Kumar Gupta (2022) ^[20]	To identify factors contributing to the growth of India's commodity futures market.	Expert interviews	Thematic analysis of interviews	Growth drivers include regulatory reforms, technology adoption, globalization, foreign investor participation, and improved risk management. Suggests continued government support and awareness programs.
22	Dr. Divya Kumar Agrawal <i>et al.</i> (2022) ^[21]	To investigate the socio-economic factors that influence producers' participation in commodity markets in India.	150 producers in Karnataka	Structured questionnaire, logit model analysis using MS Excel & SPSS	Age, education, land size, and access to training impact participation. Institutional barriers and lack of awareness hinder engagement. Policy measures such as education and institutional reforms are needed.
23	Cirappa, I.B. & Tejashwini, K.C. (2022) ^[22]	To assess the level of awareness about derivatives among retail investors and analyze the relationship between awareness and investment intention.	Retail investors	Primary and secondary data collection, Chi-square test	Most investors had low awareness of derivatives, but awareness positively impacts investment intention.
24	Dr. A. Ravi, Dr. T. Praveen Kumar, Ms. Arshiya Anjum (2022) ^[23]	To analyze the volatility and causal relationship between cotton futures and spot prices in India.	Secondary data from MCX (2019-2022)	Descriptive statistics, Augmented Dickey-Fuller (ADF) test, Johansen cointegration test	Cotton futures and spot prices show a long-run relationship, but futures have a weak impact on spot prices. Suggests increasing market participation and regulatory improvements.
25	Prekshna, S. & Pratibha, S. (2022) ^[24]	To examine investors' awareness and perception of the commodity market.	Survey data	Descriptive research design	Most investors prefer crude oil, gold, and silver. Positive attitude towards commodity trading.
26	Bhabani Sankar Rout, Nupur Moni Das, K. Chandrasekhara Rao (2021) ^[25]	To assess price discovery, volatility, and hedging efficiency in India's agricultural commodity futures market.	MCX & NCDEX data (2010-2015)	Cointegration Tests, Granger Causality Tests, VECM, OLS regression, EGARCH, VaR model	Futures market inefficiencies, low hedging efficiency, weak price discovery. Recommendations for regulatory improvements, increased market transparency, and better farmer participation.
27	Idhyashree (2021) ^[26]	To analyze the relationship between awareness and satisfaction with commodity trading.	Secondary data from MCX	Bivariate correlation and regression analysis	A positive relationship was found between investor behavior and decision-making. Improved investor behavior leads to better investment decisions.

28	Minakshi Kar (2021) ^[27]	To document the evolution of agri-commodities futures markets in India and assess their regulatory framework and price discovery mechanisms.	Secondary data analysis	Literature review, data from commodity exchanges, economic surveys, regulatory reports	Futures markets aid price discovery and risk mitigation but face inefficiencies due to poor policy implementation and regulatory challenges. Peaked in 2011-12 but declined due to stringent regulations.
29	Ujwala Rani Seedari (2021) ^[28]	To provide an overview of commodity trading and markets in India.	Secondary data from government reports, regulatory bodies	Descriptive analysis	Commodity exchanges like MCX and NCDEX dominate. Challenges include regulatory issues, speculative trading.
30	Bhabani Sankar Rout, Nupur Moni Das, K. Chandrasekhara Rao (2021) ^[25]	To assess price discovery, volatility, and hedging efficiency in India's agricultural futures market.	Secondary data (MCX, NCDEX)	Cointegration, Granger causality, VECM, OLS regression, EGARCH, VaR models	Spot market leads futures, showing inefficient price discovery. Suggests regulatory improvements, increased farmer participation, and reduced speculation.
31	Suraj Sudhakar, Ojasvi Gupta, 2021 ^[29]	To examine the impact of weather fluctuations on agricultural commodity prices and assess the role of futures markets in price discovery.	Secondary data from MCX, NCDEX, and weather reports (2015-2019)	Stationarity tests, ARCH models, OLS regression	Weather impacts vary by commodity; futures markets help stabilize price volatility.
32	Neharika Sobti (2020) ^[30]	To examine determinants of successful agricultural futures contracts in India.	30 agricultural futures contracts (NCDEX, 2003-16)	Panel data, Random-effects model	Spot price volatility is the strongest predictor of contract success. Regulatory intervention, physical settlement, and small spot markets reduce success. Recommendations: Promote cash settlement, enhance risk management.
33	Chatterjee, Raghunathan, Gulati (2019) ^[31]	To analyze the challenges and opportunities in linking Indian farmers to agricultural futures markets through Farmer Producer Organizations (FPOs).	Secondary data from NCDEX, NABARD, and government reports	Case studies of FPOs in Madhya Pradesh, Rajasthan, Bihar	FPO participation in futures trading remains very low (0.004% of total trade). Barriers include lack of awareness, quality issues, and financial constraints. Suggested policy interventions based on China's model.
34	A.N. Vijayakumar (2019) ^[32]	To examine the feasibility and necessity of introducing futures trading in Arecanut in Karnataka through Farmer Producer Organizations (FPOs).	Secondary data, stakeholder insights	Market reports, policy documents, qualitative analysis	Futures trading could provide price stability and risk management, but requires regulatory support, awareness, and infrastructure.
35	Dr. V.R. Narasimhan, Dr. Pradiptarathi Panda (2019) ^[33]	To analyze the role of banks in developing India's commodity derivatives market, particularly in agriculture.	Secondary data (SEBI, RBI, MCX, NCDEX)	Comparative study, case studies (USA, UK)	Banks' exclusion from commodity hedging increases farmer credit risks. Allowing banks to hedge loans via derivatives could stabilize credit flow and reduce distress. Recommendations: Regulatory reforms, farmer financial literacy, commodity-credit integration.
36	Dr. S. Nagaraju (2018) ^[34]	To analyze the growth, structure, and challenges of the Indian commodity derivatives market.	Secondary data	Data from MCX, NCDEX, FMC, government reports, research articles	Market underdevelopment due to government interventions, speculation dominating trading, and limited farmer participation. Recommendations for better regulatory frameworks, new hedging tools, and expanded warehousing facilities.
37	Nath, Golka C. & Lingareddy, Tulsi (2018) ^[35]	To determine whether commodity futures trading contributes to inflation.	Price trend analysis	Secondary data (price movements during trading periods)	Spot price volatility increased during futures trading, indicating a link between commodity derivatives and inflation. Regulatory oversight is needed to control speculation.
38	Dhandayuthapani, S.P., & Sudha, H. (2018) ^[36]	To evaluate trading practices and regulations in the Multi Commodity Exchange (MCX).	Not specified	Secondary data analysis	Market regulations impact MCX operations and investor participation. Better regulations can improve investor confidence.
39	Sarika Rachuri, Dr. Rajinder Aurora (2017) ^[37]	To assess the impact of regulatory changes (CTT, NSEL scam) on hedging efficiency and market growth in India's commodity exchanges.	Secondary data from MCX, NCDEX, regulatory reports	Time-series regression, OLS models (gold & crude palm oil futures)	Hedging efficiency declined post-2013 due to investor distrust and market skepticism. SEBI's regulation post-2015 is positive, but long-term effects need further study.
40	Nidhi Aggarwal, Sargam Jain, Sudha Narayanan (2017) ^[38]	To examine Karnataka's pioneering agricultural marketing reforms, assess challenges in implementation, and draw lessons for India's e-NAM initiative.	Field study of 10 mandis in Karnataka	Interviews, observations, market transaction analysis	Market efficiency improved, but challenges include trust issues in quality assessment, trader collusion, and reliance on commission agents. Success depends on institutional reforms, incentives, and infrastructure development.

Conceptual Framework



Findings and Discussion

The analysis highlights the following key findings:

Awareness and Participation: While farmers recognize the benefits of commodity derivatives, participation remains low due to complex trading procedures and perceived risks.

- **Influence of Financial Literacy:** Educational programs positively impact engagement, but their reach remains limited.
- **Challenges in Market Access:** Institutional barriers, margin requirements, and lack of technology access hinder participation.
- **Regulatory Challenges:** Government-imposed trading restrictions, taxation issues, and inconsistent policies affect market efficiency.
- **Policy Recommendations:** Expanding financial education, simplifying trading procedures, and enhancing farmer cooperatives' access to derivative markets.

Conclusion and Recommendations

The study concludes that while efforts have been made to increase awareness, significant gaps remain in participation. Policy reforms, increased financial literacy initiatives, and infrastructure improvements are essential for enhancing farmer engagement in the derivatives market. Future research should focus on the long-term impact of digital trading platforms and regulatory modifications on market participation. Key recommendations include:

- Strengthening financial literacy programs to enhance farmer knowledge and confidence in derivatives trading.
- Improving infrastructure for digital trading platforms to facilitate easier market access.
- Streamlining regulatory policies to encourage broader market participation.
- Expanding institutional support and credit facilities to mitigate financial barriers for small-scale farmers.

References

1. Clement Oteng, *et al.* The impact of global oil price fluctuations on agricultural commodity markets in Ghana. *Journal of Agricultural Economics & Policy*,2024:42(3):201–215.
2. Ngoc-Bao-Van Le, Yeong-Seok Seo, Jun-Ho Huh. AgTech: Volatility prediction for agricultural commodity exchange trading applied deep learning. *IEEE Access*,2024:12:143–160.
3. Pramit Pandit, Atish Sagar. Improving forecasting accuracy of agricultural commodity prices with CEEMDAN-TDNN hybrid model. *Journal of Economic Forecasting*,2024:18(2):89–105.
4. B Manjunatha, *et al.* Enhancing agricultural commodity forecasting: A median-based combination of time series models. *Journal of Experimental Agriculture International*,2024:46(8):301–320.
5. Suman Chaudhary, *et al.* Investigating volatility dynamics in the spot and futures markets of agricultural commodities in Rajasthan. *Journal of Commodity Markets*,2024:20(1):45–67.
6. Rangan Gupta, Christian Pierdzioch. Evaluating the accuracy of multi-task forecasting algorithms for the realized volatilities of agricultural commodities. *International Journal of Financial Markets*,2024:29(2):180–205.
7. Humaira Rana, *et al.* Prediction of agricultural commodity prices using big data framework. *Engineering, Technology & Applied Science Research*,2024:14(1):1517–1523.
8. Inayath Ahamed SB, Subramaniya Bharathy R. A study on the investors' perception towards commodity market with reference to Goodwill Commodities Pvt Ltd. *Journal of Positive School Psychology*,2023:6(5):2896–2906.
9. Zhykharieva V, Koretska O, Kapatsyna M. Risk insurance against commodity price fluctuations on the example of wheat futures. *Věda a Perspektivy*,2023:17(3):101–120.
10. Mohit Garg, *et al.* Price discovery mechanisms and volatility spillovers in the Indian agricultural market.

- International Review of Economics & Finance,2023:85(2):278–295.
11. Paramjeet Singh. Evolution, regulation, and benefits of the Indian commodity market. *International Journal of Economic Perspectives*,2023:22(4):190–215.
 12. Tasnim Uddin Chowdhury, Mohammad Monzur Morshed Bhuiya. Necessity of agricultural commodity derivatives market for overcoming the problems in the agricultural supply chain of Bangladesh: A review and way forward. *Journal of Supply Chain Management: Research & Practice*,2023:17(1):85–110.
 13. Pankaj Das, Girish Kumar Jha, Achal Lama. Empirical mode decomposition-based ensemble hybrid machine learning models for agricultural commodity price forecasting. *Statistics and Applications*,2023:21(1):99–120.
 14. Kapil Dev, Ravinder Sharma, Amit Guleria, Dev Raj. Performance and prospects of agricultural commodities in India: An economic analysis. *Indian Journal of Economics and Development*,2022:1(10):15–32.
 15. Shreyes Krishnan, Preetham D. Evolution and growth of agricultural commodity derivatives in BRICS nations. *Global Commodity Markets Journal*,2022:18(1):100–118.
 16. Algirdas Justinas Staugaitis, Bernardas Vazonis. Financial speculation impact on agricultural and other commodity return volatility: Implications for sustainable development and food security. *Agriculture*,2022:12(1892):200–225.
 17. Yeong Hyeon Gu, Dong Jin, Helin Yin, Ri Zheng, Xianghua Piao, Seong Joon Yoo. Forecasting agricultural commodity prices using dual input attention LSTM. *Agriculture*,2022:12(256):99–120.
 18. Pooja Chand, Baba Gnanakumar P. Commodity price volatility measurement of the selected agricultural commodities with reference to NCDEX. *Reengineering Management Capabilities for a Sustainable Future*, 2022.
 19. Venkatragavan V, Sivasakkaravarthi P. An evaluation of farmers' perception on agricultural commodity derivatives. *Journal of Positive School Psychology*,2022:6(2):3514–3520.
 20. Vivek Chandra Kuchhal, Anil Kumar Parti, Ravi Kumar Gupta. Factors contributing to the development of commodity futures market in India. *The Management Accountant*, 2022.
 21. Divya Kumar Agrawal, *et al.* An empirical study on socio-economic factors affecting producer's participation in commodity markets in India. *Journal of Positive School Psychology*,2022:6(5):2896–2906.
 22. Cirappa IB, Tejashwini KC. Awareness and investment intention in derivatives market, 2022.
 23. Ravi A, Praveen Kumar T, Arshiya Anjum. Derivatives and price risk management: A case of Indian commodity cotton futures and spot prices in India. *Journal of Positive School Psychology*,2022:6(6):9391–9397.
 24. Prekshna S, Pratibha S. Investors' awareness and perception of the commodity market, 2022.
 25. Bhabani Sankar Rout, Nupur Moni Das, Chandrasekhara Rao K. Competence and efficacy of commodity futures market: Dissection of price discovery, volatility, and hedging. *IIMB Management Review*,2021:33(2):210–229.
 26. Idhyashree. Awareness and satisfaction in commodity market, 2021.
 27. Minakshi Kar. Indian agri-commodities markets: A review of transition toward futures. *Journal of Operations and Strategic Planning*,2021:4(1):1–15.
 28. Ujwala Rani Seedari. Overview of commodity trading and market in India. *Journal of Agricultural Economics*, 2021, 1–10.
 29. Suraj Sudhakar, Ojasvi Gupta. Impact of weather on agriculture commodity market and the price discovery: An empirical analysis. *Millennium Journal of Humanities and Social Sciences*,2021:4(1):1–12.
 30. Neharika Sobti. Determinants of successful agricultural futures contracts in India. *Agricultural Economics Research Review*,2020:33(1):99–108.
 31. Chatterjee, Raghunathan, Gulati. Linking farmers to futures market in India. *ICRIER Working Paper*, 2019, 383.
 32. Vijayakumar AN. A case for introducing futures trading in arecanut in Karnataka through FPOs, 2019.
 33. Narasimhan VR, Pradiptarathi Panda. Potential role of banks in the development of Indian commodity derivatives markets – Special focus on agricultural commodities, 2019.
 34. Nagaraju S. Commodity derivative trading in India – Issues and concerns. *Journal of Applied Science and Computations*,2018:5(7):95–110.
 35. Nath Golkac, Lingareddy Tulsi. Impact of commodity futures on inflation, 2018.
 36. Dhandayuthapani SP, Sudha H. Trading practices in MCX and market regulations, 2018.
 37. Sarika Rachuri, Rajinder Aurora. Commodity derivative markets in India: An evolving paradigm, 2017.
 38. Nidhi Aggarwal, Sargam Jain, Sudha Narayanan. The long road to transformation of agricultural markets in India: Lessons from Karnataka, 2017.
 39. Bhagwat S, Maravi AS. [Title of the article]. *International Journal of Management and Social Sciences Research*,2015:4(12):2319–4421.
 40. Ghosh N. Futures Trading in Agricultural Commodities: An Assessment of Performance Since Deregulation. *Economic and Political Weekly*, 2013, 48(52).
 41. National Bank for Agriculture and Rural Development. Status of Agricultural Marketing and Use of Derivatives in India. NABARD Publications, 2019.
 42. Sahu GB, Rajasekhar D. Agricultural Market Reforms in Karnataka: Implementation and Implications. Institute for Social and Economic Change, 2014.
 43. Securities and Exchange Board of India. Annual Reports, Various Years.
 44. National Commodity and Derivatives Exchange, Multi Commodity Exchange. Reports and Publications.