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## **Navigating the Nexus of Economic Policy Uncertainty and Stock-Commodity Correlations in Brazil**

**Victor Lana and Leonardo Bornacki**

*Selected presentation for the International Agricultural Trade Research Consortium's (IATRC's) 2023 Annual Meeting: The Future of (Ag-) Trade and Trade Governance in Times of Economic Sanctions and Declining Multilateralism, December 10-12, 2023, Clearwater Beach, FL.*

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## **2023 IATRC Annual Meeting**

Clearwater Beach, FL

# **Navigating the nexus of economic policy uncertainty and stock-commodity correlations in Brazil**

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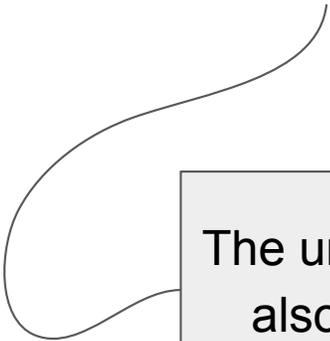
Dec 12, 2023

# Introduction

- The importance of economic interactions involving **commodities** is multiple.
  - Standardized commodity contracts are negotiated in futures exchanges allowing producers and consumers to gain access to goods in a centralized and liquid marketplace
  - Means of portfolio diversification

# Introduction

- Unexpected **shocks** lead to a risk premium that is embedded in interest rates, making loans less affordable, which affects earnings projections, reducing **stock prices** and driving instability in financial markets



The uncertainty of the economic policy could affect financial markets, and also, how they interact with commodity futures in several economies.

# Introduction

- Although commodities and economic uncertainty might have achieved prominence in every country in the world, it is probable that these variables have a contrasting effect on **developing** and developed nations.
- Corruption scandals, a serious fiscal crisis, and the presidential impeachment symbolize some events in the Brazilian government that could illustrate this relationship



## Introduction

- Therefore, there is still room for investigations of this nature

This paper adds to the emerging set of studies on the role of economic policy uncertainty on financial market correlations, particularly for a less advanced economy like Brazil

It provides a thorough analysis of the correlations between stocks and several commodities negotiated in the Brazilian futures exchange

## Aims and objectives

- **Aim**

- To examine whether economic policy uncertainty affects the correlations between the stock and commodity markets in Brazil from January 2018 to June 2022

- **Objective**

- To test if economic uncertainty emanating from abroad (China, the US, and global) is as important as domestic uncertainty in determining the Brazilian stock-commodity markets correlations

## Conceptual model

- We employ the theory set out in Pástor and Veronesi (2013) for the association between uncertainty and financial markets.
- After that, based on the portfolio selection model of Markowitz (1952), we provide theoretical insights into the links between the stock and commodity markets.

## Research design, methods, and data

- Initially, we estimate the **dynamic conditional correlations** between the stock market and different commodities futures.
  - We use the DCC-GARCH model to estimate the dynamic conditional correlations between the Bovespa index and closing futures prices
- After that, we evaluate how economic uncertainty affects these correlations.
  - We verify the existence of an effect running from economic policy uncertainty towards the estimated correlations

## Research design, methods, and data

economic policy uncertainty

economic activity index

$$Cor_t = \beta_1 + \beta_2 EPU_{j,t} + \beta_4 IPG_t + \beta_5 EAI_t + \beta_6 Cor_{t-1} + \xi_t$$

industrial production growth

## Research design, methods, and data

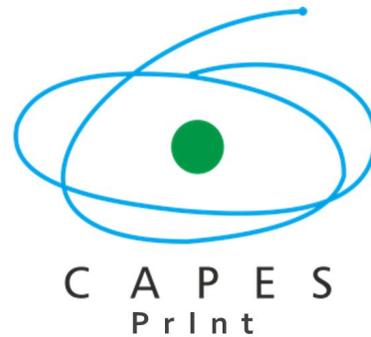
- Monthly data for Brazil from January 2018 to June 2022
  - Monthly data instead of information on a daily basis. For this, we ought to calculate correlations from day-to-day figures through their means within each month.
- Data on the Bovespa index as well as on closing commodity futures prices - **B3**.
  - Different commodities (arabica coffee, soybean, corn, crystal sugar, crude oil, gold, hydrous ethanol, and live cattle)
- Data on economic uncertainty - **Baker et al. (2016)** and **Ferreira et al. (2019)**
- Industrial production growth - **Institute of Economic Applied Research**
- Economic activity index - **Central Bank of Brazil**

## Next steps

- Collect data to try and understand traded volume and market liquidity
- Estimate correlations
- Evaluate the effect of uncertainty on these correlations
- Investigate regressors that could be included in our estimation

# Acknowledgements

Thank you for your attention.



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