The Costs of Populism: Evidence from a Gas Price Holiday in Brazil

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Motivation and Purpose

- Resurgence of populism and populist regimes across the world (Guiso et al., 2020)

- Supply of populism as a 'thin-centered ideology':
  - Need to develop a *political platform* [maximize votes and likelihood of winning the election]
  - Need to build a *political coalition* [secures majority to be able to govern]

- Mechanisms:
  - 'Buy votes' [artificial set of domestic price in key commodity markets]
  - 'Buy politicians' [Assign oversight of agencies and government control enterprises to key members of other parties in the political coalition]

Examine the social costs of and opportunity cost of populism

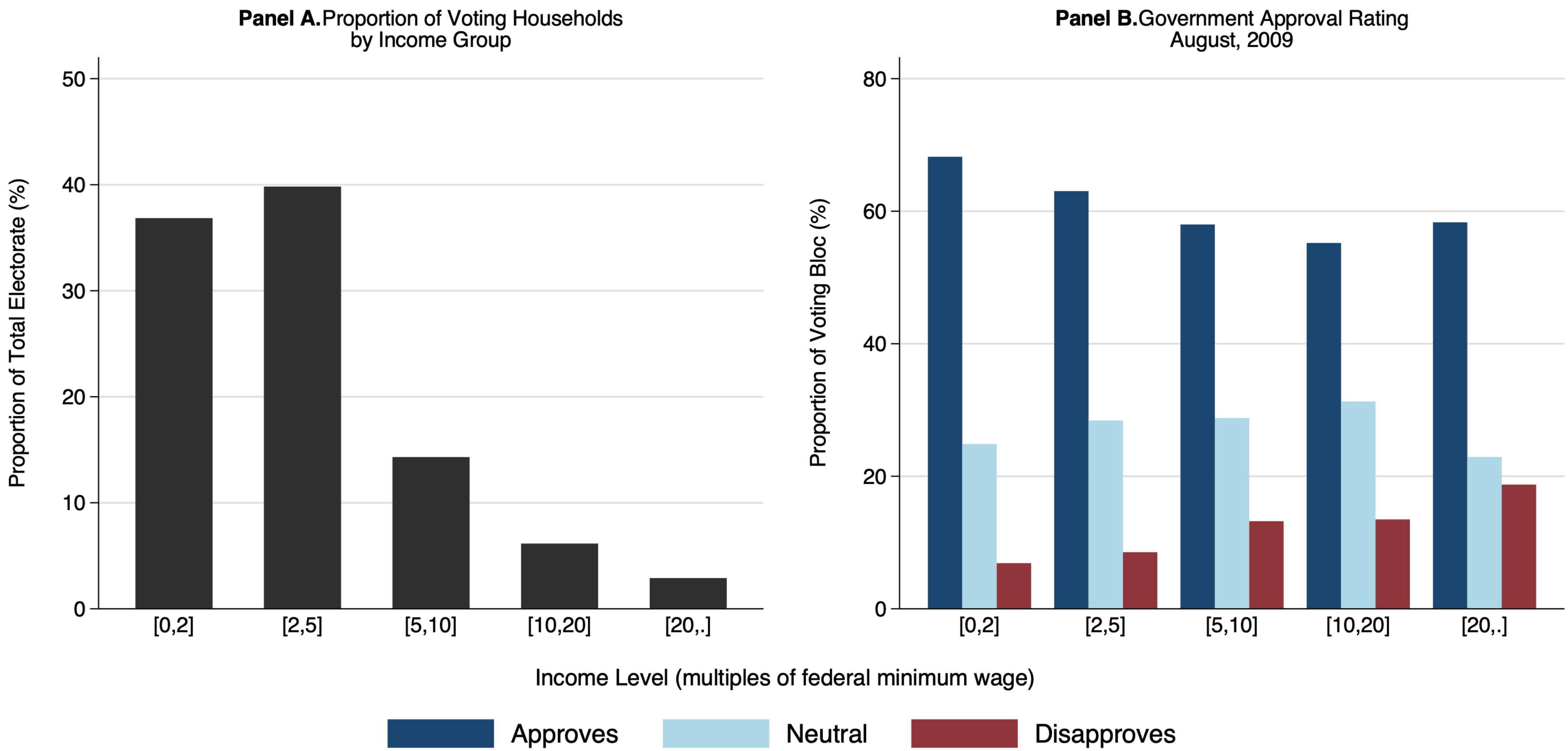
A primer on Populism in Brazil

- Since the end of dictatorship, no single political party has won elections with majority [need to ‘buy politicians’ to secure coalition to govern]

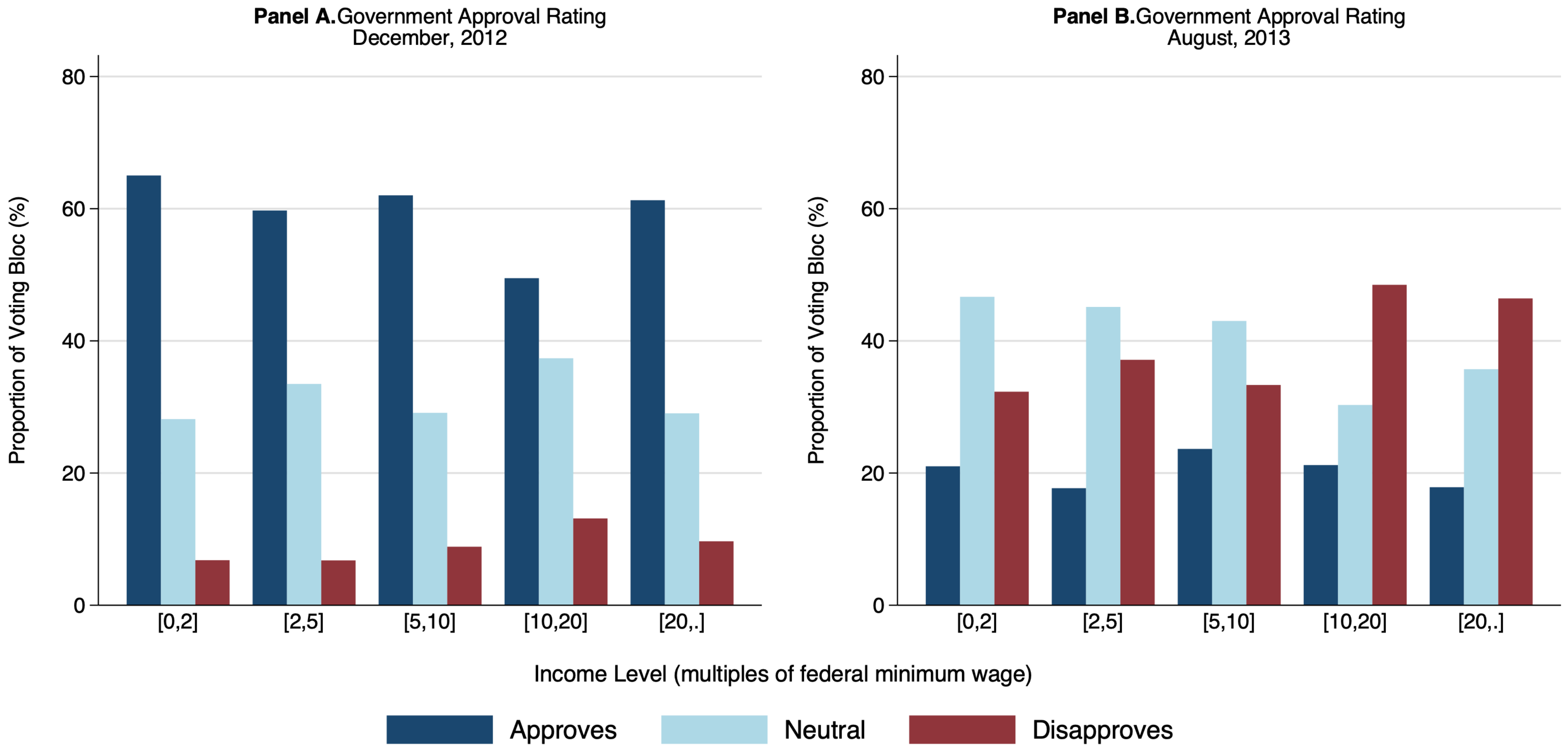
- Fuel Markets are easy targets to implement populist strategies
  - Government influence on Petrobras
  - Populism Benefits are likely higher than Political costs
    - Salience of fuel prices at the pump and economywide benefits of low diesel prices
    - Relatively smaller number of private shareholders to be anger by losses due to domestic price-controls
  - Drawback: Financial unsustainable overtime, given size of fuel markets

- 2002-2010 - Success of the Lula Administration also depended on a left-wing ‘pro-poor’ agenda [expansion of cash-transfer programs]

Support for Lula at the end of the administration's mandate



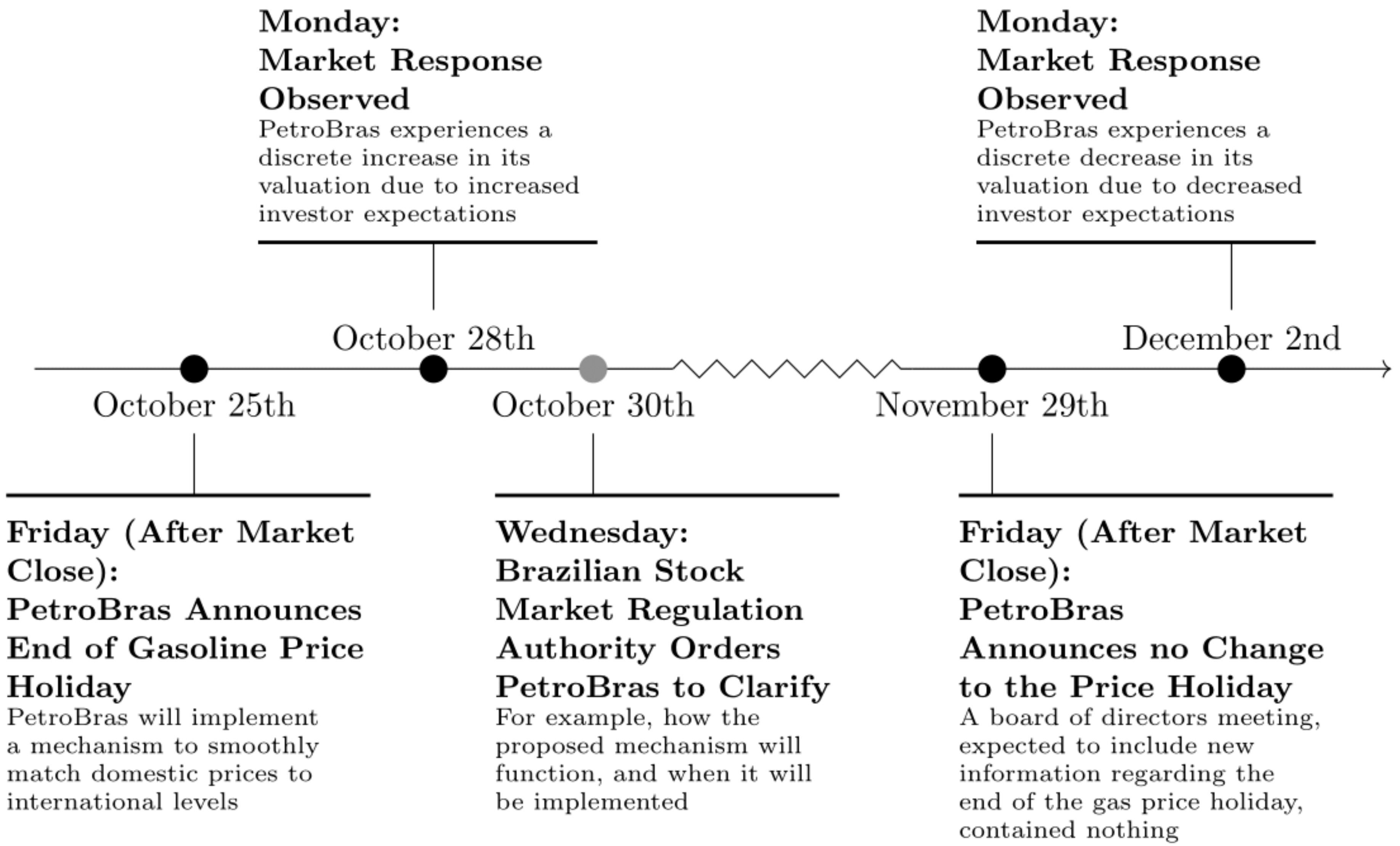
Financial unsustainability of Petrobras becomes a problem



Early 2013 Petrobras removes their price support for diesel

Protests and demonstrations eroding the support for the administration

Unexpected announcement: eliminate gasoline price control

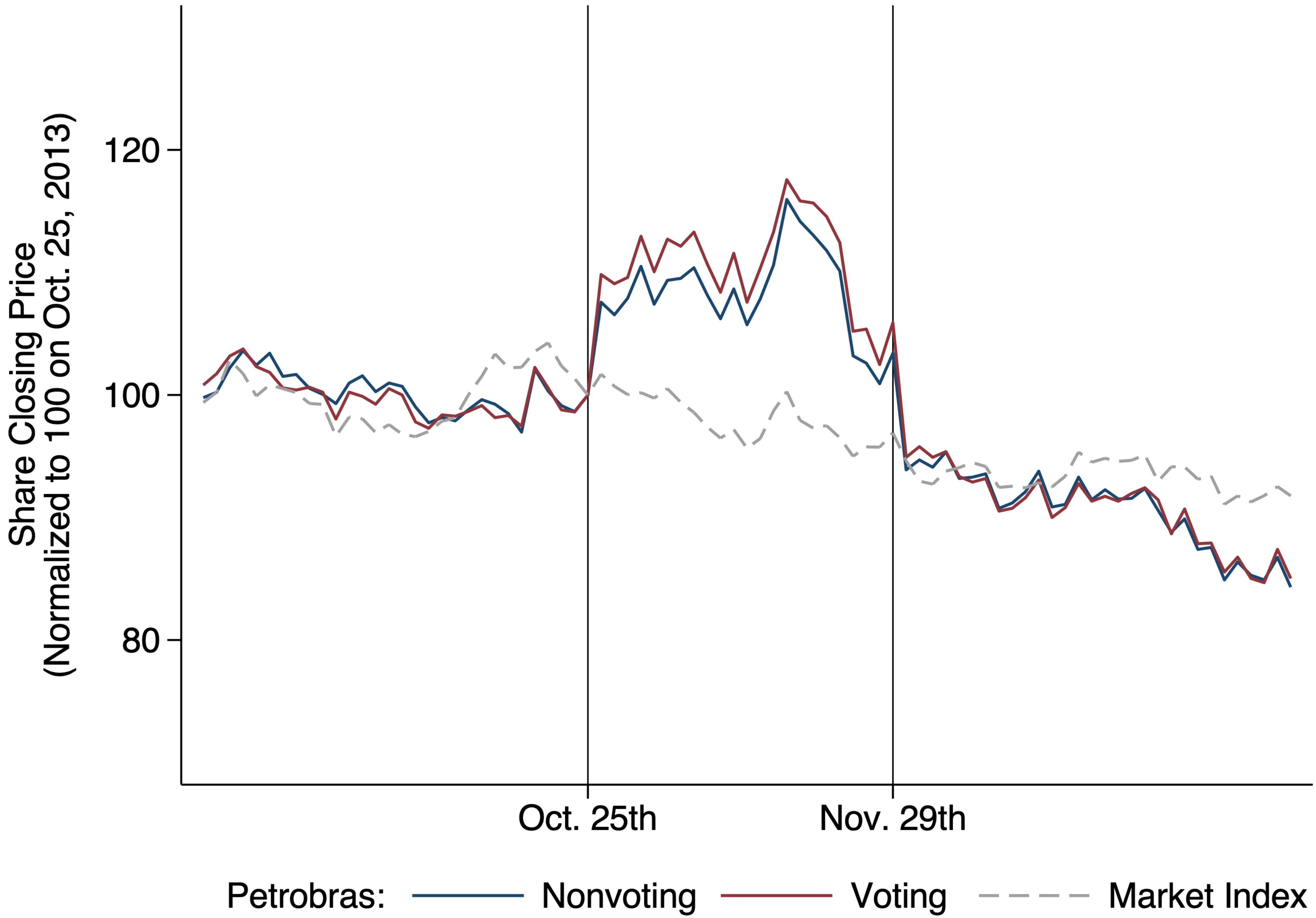


- Event study – effect of announcement on daily returns of stock prices
- Use the econometric estimates to measure the social costs and opportunity cost of populism

Data

- Daily Closing Stock Share Price and Trading Volumes [2012-2014]
  - São Paulo Stock Exchange (BOVESPA) and New York Stock Exchange
  - Voting and Non-Voting Shares
  - Construct log daily returns as the ratio of closing price today/yesterday
- Other major components of data
  - Market Index [value weighted portfolio of the most liquid stocks traded on the BOVESPA and NYSE Markets]
  - Fama-French Factors [capture additional forms of volatility and risk]
  - Daily closing stock share price for twenty-four publicly traded large Brazilian firms
  - Daily Wholesale price of crude oil and gasoline [EIA]
  - Daily Exchange rate

Event manifested in Petrobras share closing price



Empirical Strategy

$$r_{it} = \beta_i^{Fri} D_t^{Fri} + \beta_i^{Mon} D_t^{Mon} + \beta_i^{Tue} D_t^{Tue} + \delta_i X_{it} + \epsilon_{it}$$

- Event Window:
  - Announcement – Friday, Nov 25th
  - Event Day – Monday, Nov 28th
  - Event Window – Include Friday and Tuesday
- Estimation Window – centered 200 trading days
- Xit – Market index; Oil and Exchange Rate; Fama-French
- Error Term – specified as a Garch (1,1)

Effect of the announcement on the log returns

	Panel A. Nonvoting Shares Log Excess Returns		
	(1)	(2)	(3)
Friday	0.0146	0.0164	0.0166
	(0.0242)	(0.0139)	(0.0121)
Monday	0.0740**	0.0522***	0.0530***
	(0.0242)	(0.0134)	(0.0118)
Tuesday	−0.0086	−0.0061	−0.0025
	(0.0239)	(0.0135)	(0.0127)
Market Index Control		Yes	Yes
All Other Controls			Yes
	Panel B. Total Impact on Petrobras Value		
Δ Firm Value (%)	6.926	6.535	6.457
Δ Firm Value (2013US Bil.)	8.799	6.442	6.365

Notes: ***, **, and * represent significance at 0.1%, 1%, and 5%, respectively.

Inference and Thread to Identification

- GARCH model assumes a specific distribution of the error term

  Assess statistical significance via alternative methods, e.g. Sample Quantile test

- Other Events Any *simultaneous* event?
  1. Anecdotal news sources suggest nothing
  2. Examine the 2nd announcement, which would plausibly have equal but opposite magnitude

- The estimation window may not reflect normal behavior of share price
  1. Shortened estimation window
  2. Leading vs centered window

- Anticipation or delay in capitalization of information
  1. Trading volumes show no major deviations in normal trading behavior before or after the event
  2. Include (prior) Thursday and (following) Wednesday in event window

1. the market index may not be the ideal 'control group'

Market Index vs Synthetic Control

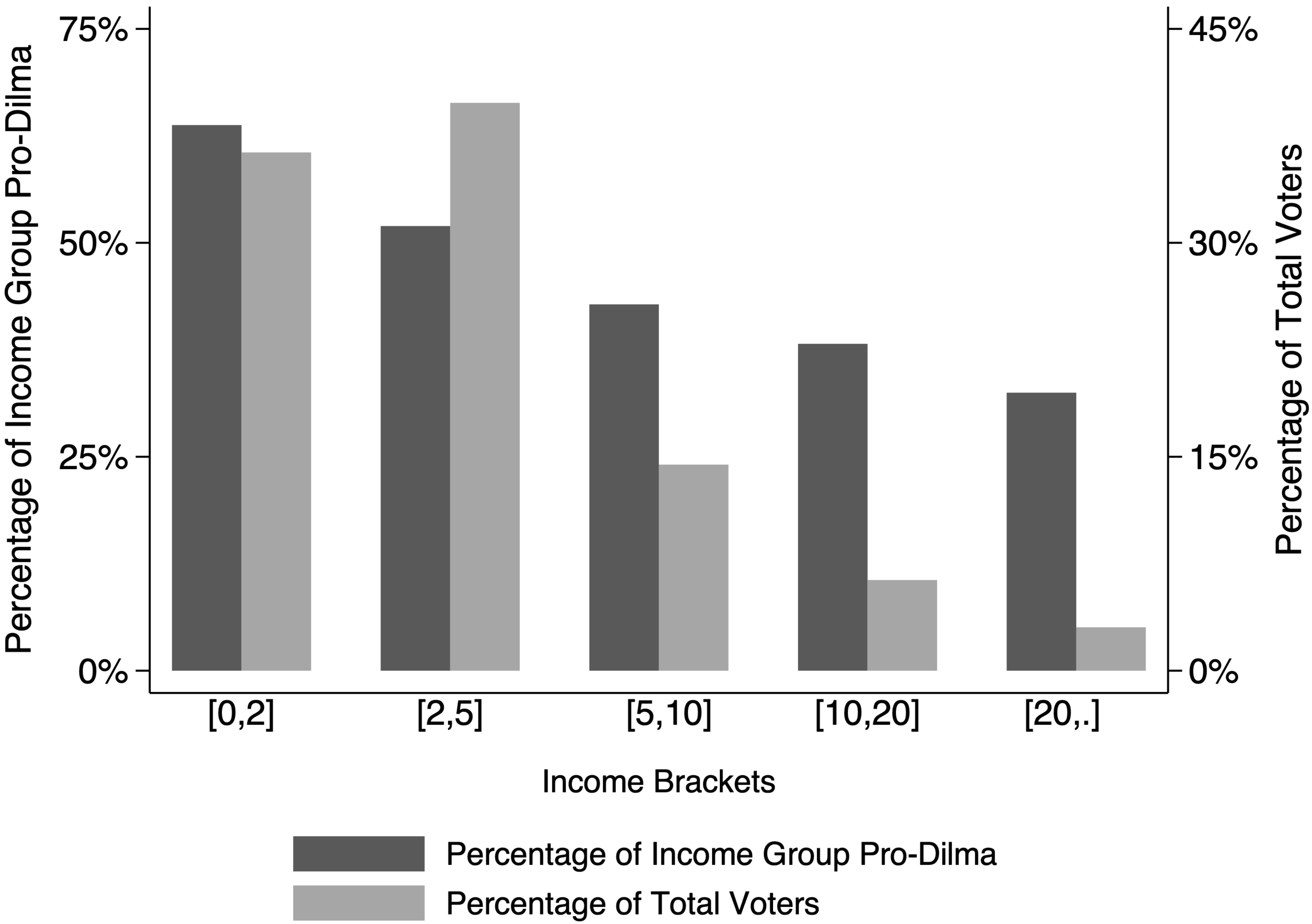
	Non-Voting Shares Log Excess Returns			
	Market Index		Synthetic Control	
	BOVESPA	NYSE	BOVESPA	NYSE
	(1)	(2)	(3)	(4)
Friday	0.0166	0.0156	0.0210	0.0170
	(0.0121)	(0.0181)	(0.0193)	(0.0176)
Monday	0.0530***	0.0588**	0.0646**	0.0688***
	(0.0118)	(0.0179)	(0.0193)	(0.0171)
Tuesday	−0.0025	−0.0055	−0.0090	−0.0069
	(0.0127)	(0.0187)	(0.0191)	(0.0181)
Controls				
Market Index	Yes	Yes		
Synthetic Index			Yes	Yes
All Other Controls	Yes	Yes		

Notes: ***, **, and * represent significance at 0.1%, 1%, and 5%, respectively.

The costs of Populism

	Panel A. Gross Cost and its Components (Million 2013USD)		
	12 months	13 months	14 months
Costs to PETROBRAS	6,365	6,365	6,365
Direct Transfer to Consumers	3,389	3,671	3,954
Cost of Absorbing Oil Price and Exchange Rate Volatility	1,644	1,867	2,106
	Panel B. Social Cost of Populism		
Implied Marginal Excess Burden	0.88	0.73	0.61

Opportunity Cost of Populism



Conclusions

- Taking advantage of an unexpected announcement to end a gas price holiday, conducted an event study to estimate the effects of the announcement on returns to stock shares

- Embed these estimates to calculate the social costs of populism and opportunity cost

- Populist policy doesn't have an extremely large MEB but it quickly Becomes unsustainable, given the size of fuel markets

- Populist policy appears to be regressive

- Opportunity cost of populism reveals that the poor would have Benefited much more from a benevolent social planner with a pro-poor agenda