

# How do FOMC Actions and U.S. Macroeconomic Data Announcements Move Brazilian Sovereign Yield Spreads and Stock Prices?

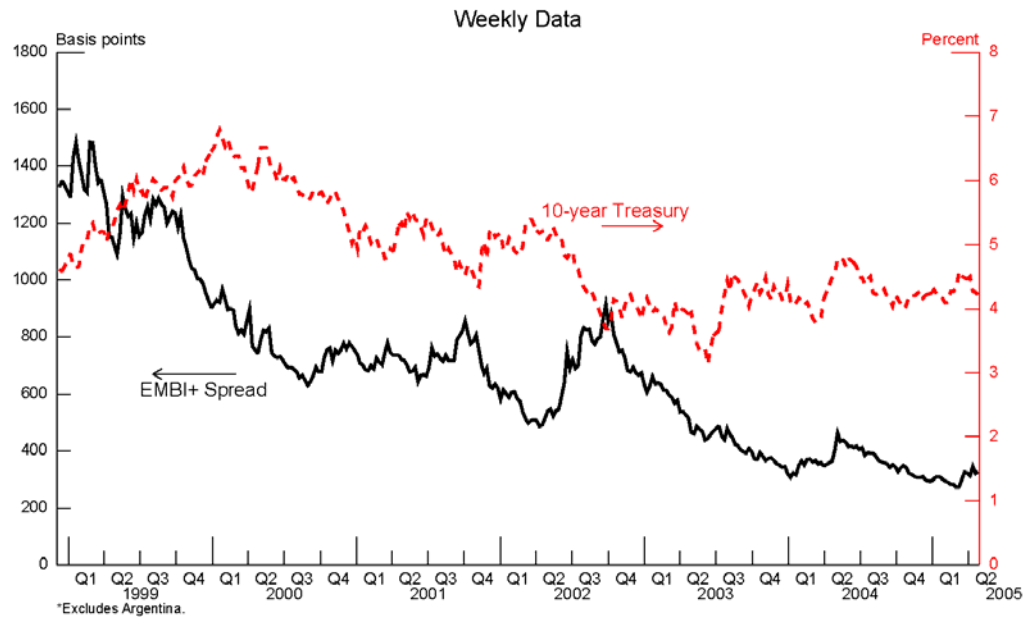
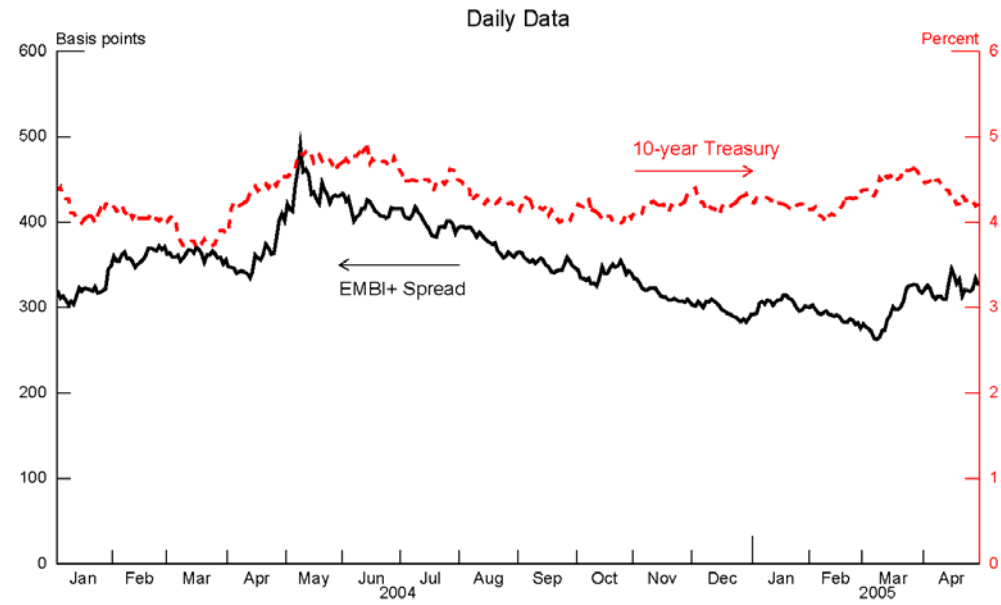
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- Motivation

- Many studies have investigated relationship between in U.S. interest rates and yields in dollar-denominated sovereign debt issued by Emerging Market Economies (EMEs).
- Focus of attention usually Embi spreads (JP Morgan index of bond yield spreads over U.S. Treasuries).
- Motivated in part by view that U.S. monetary policy tightenings helped trigger the LDC crisis, Mexican 1994 crisis, and other periods of financial turbulence in EMEs.
- These fears were resurrected over first 5 months of 2004 in particular as several events, including FOMC statements, led investors to put higher odds on probability that FOMC would raise interest rates.

- Problems with most of the existing studies
  - look at relationship between *realized* changes in U.S. rates and EME spreads.
  - Realizes changes incorporate both anticipated and unanticipated movements.
  - Do not distinguish among various reasons of movements in U.S. rates. Influence of U.S. rates on EME yields and yield spreads depends on source of the shock.

Figure 1: Yield on US Ten-Year Treasury Bond vs. EMBI+ Spread\*



- Over certain periods, U.S. rates and EMBI spreads appear to move together (e.g., 2004-early 2005)...
- ...but over longer periods, the relationship is not so clear.
- Relationship not stable because the factors that drive the co-movement change over time

- A rise in U.S. interest rate is thought to lead to a rise in EME credit risk spread because
  - Rise in U.S. rates raises the cost of new dollar borrowing for EMEs. Could reduce EME's ability to service their debts.
  - Default possibly more likely, increasing credit risk premiums.
  - Rise in U.S. rates would lead to unwinding of “reach for yield.”
- But if U.S. rates rise following news that the U.S. economy is stronger than what investors had previously thought
  - investors might be more optimistic on growth prospects in EMEs, raising EME asset prices and consequently lowering credit risk spreads

- Ultimately, which influence dominates is an empirical issue.
- Other work: VAR-based
  - Uribe and Yu (2003) use structural VAR to study dynamic response of EME risk spreads to U.S. monetary policy shock. Use quarterly data on panel over 1994-2001.
  - Not a realistic depiction of systematic component of monetary policy, as U.S. ST rate is allowed only to respond to *past* ST rate. So impulse responses, Variance Decompositions not picking up effects of U.S. monetary policy shock.
  - Miniane and Rogers (2005), VAR employed to look at effect of U.S. monetary shocks on ST rates on *local* currency denominated instruments. Attempts to deal with identification problem for monetary policy shock with robustness checks (over 200 sets of identifying assumptions).
  - ....whether a monetary policy shock can be adequately isolated in VARs remains controversial.

## – Event study: alternative approach

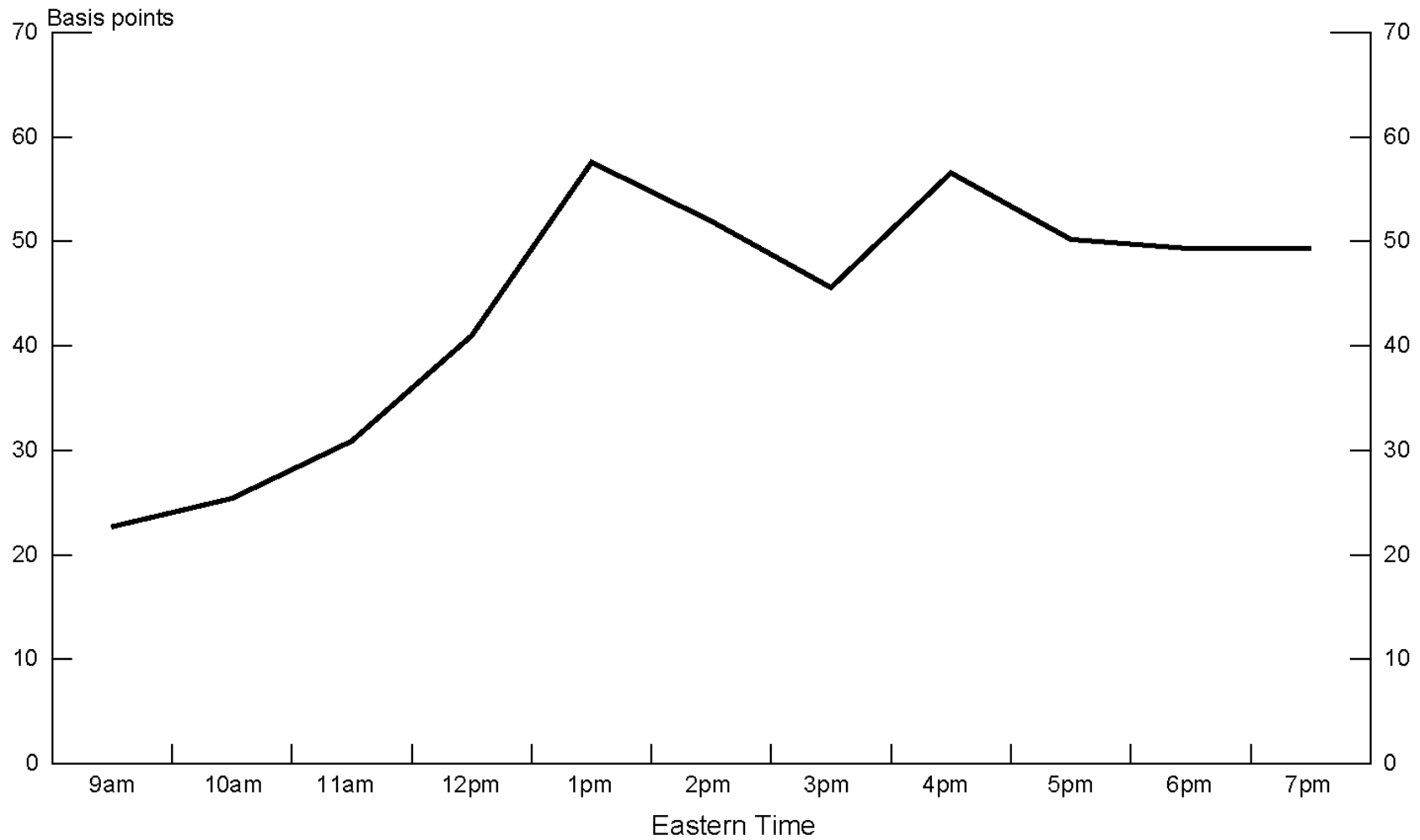
- Armed with measures of surprises associated with FOMC and U.S. macro announcements...
- ...and with intradaily data...
- ...we study response of Brazilian credit risk spread and stock price index (IBOVESPA) to the surprise component of these announcements.



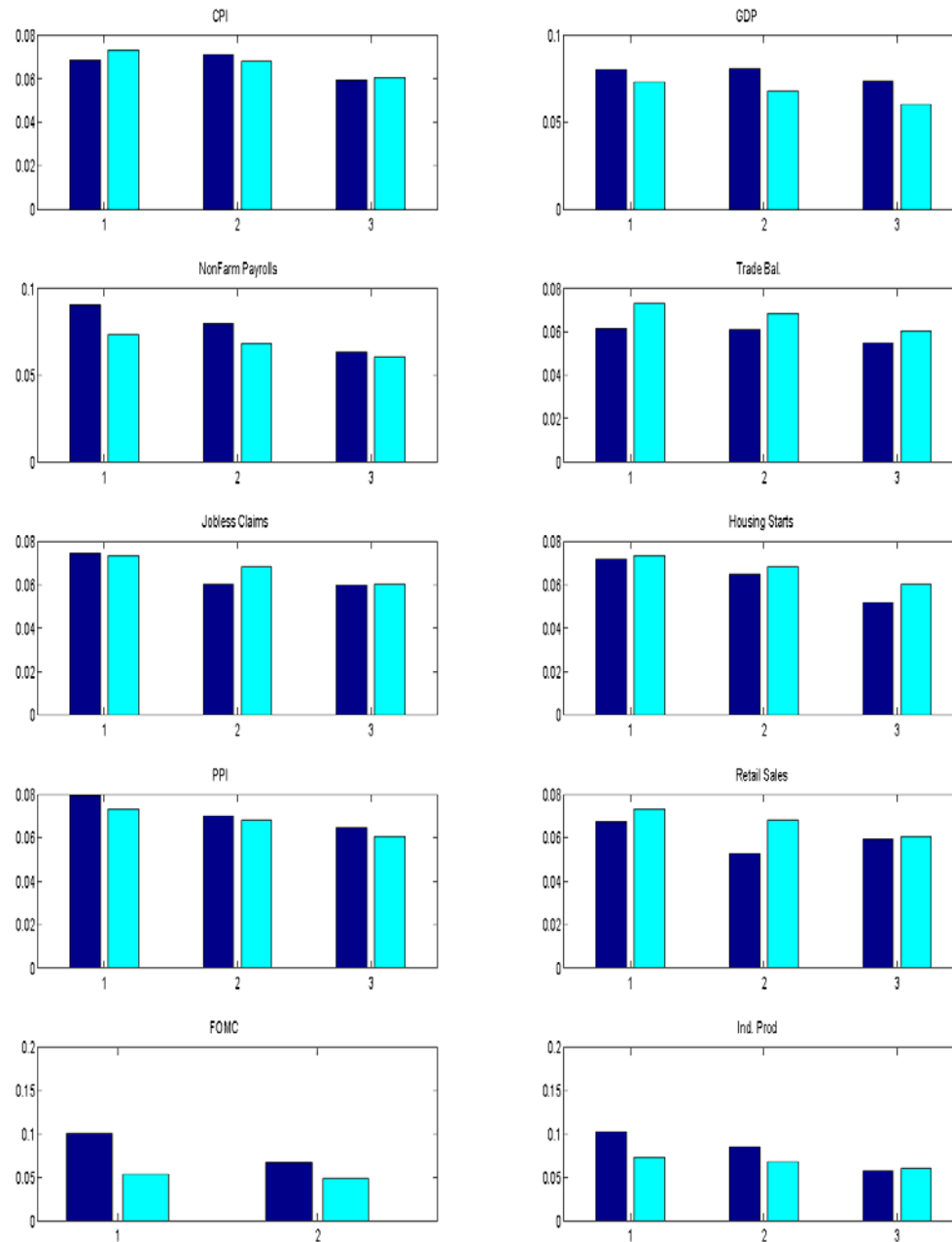
- FOMC announcements: Surprise measure is market-based (extracted from interest rate futures contracts)
- Surprise change in fed funds target rate measured over one-half hour bracketing the 2:15 announcements (throw out 3 intermeeting moves in 2001—Jan 3, April 18, and Sept 17)
- 10 U.S. Macro announcements
  - surprise measure is survey-based

- Sample: Feb 1999-Apr 2005
  
- Brazilian C-bond yield spread over U.S. treasuries
  - Data hourly, on the hour
  - C-bond was the most actively traded EME bond
  - Bond market open roughly 3 am-5 pm Eastern Time
  - Some observations dropped (events in Argentina/Brazil)
  
  - Data not ideal
    - » Based on indicative bond prices, not transactions prices
    - » missing data for 1 month after 9/11 and on other dates
  
- IBOVESPA index:
  - Data at five-minute intervals

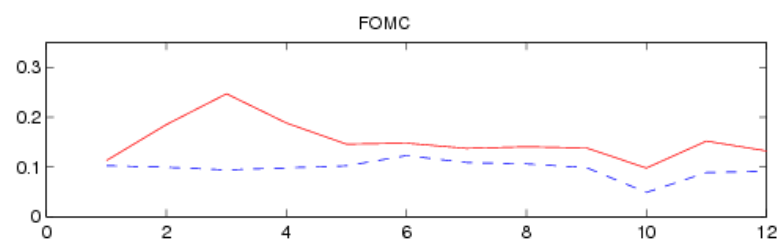
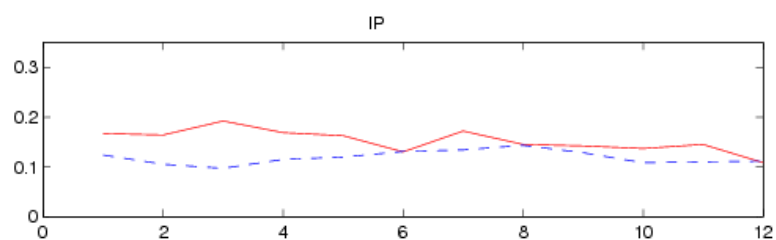
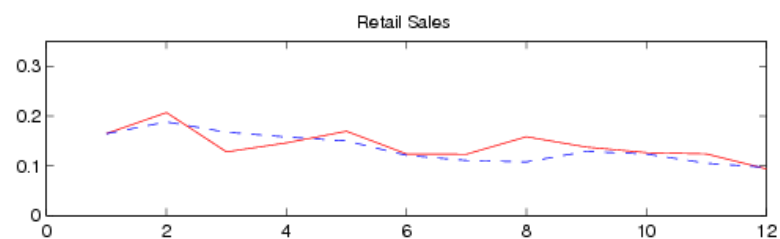
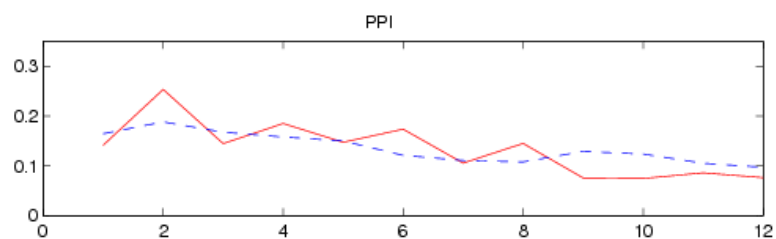
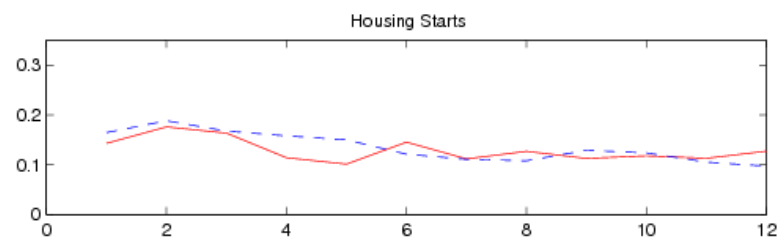
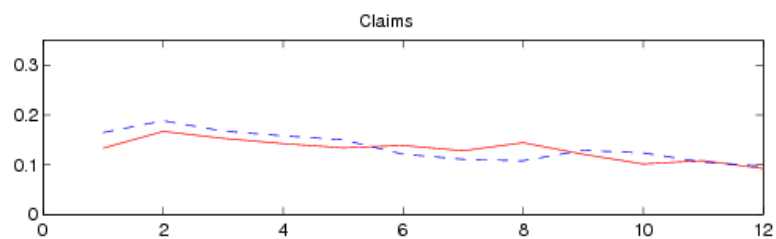
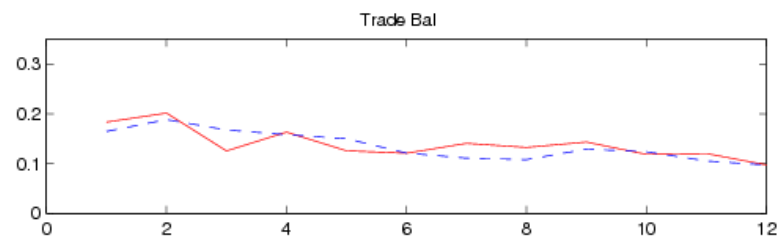
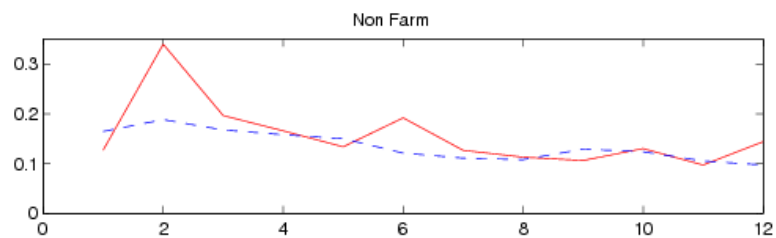
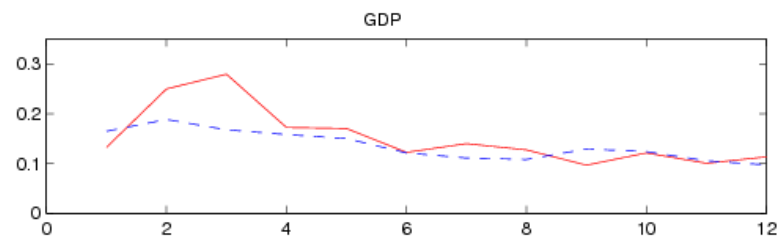
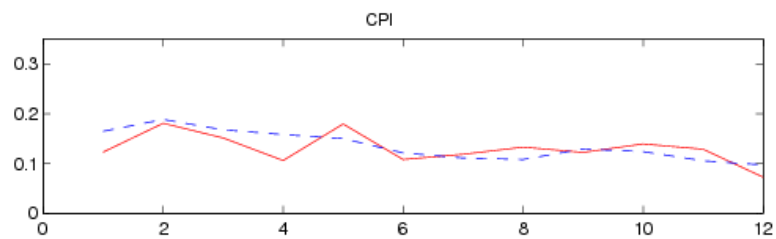
**Figure 3: Cumulative Change in C-bond Spread over U.S. Treasuries  
Following April 2, 2004 Non-Farm Payroll Release**



**Figure 4: Mean Absolute Change in Spread on Announcement vs. non-Announcement Days**



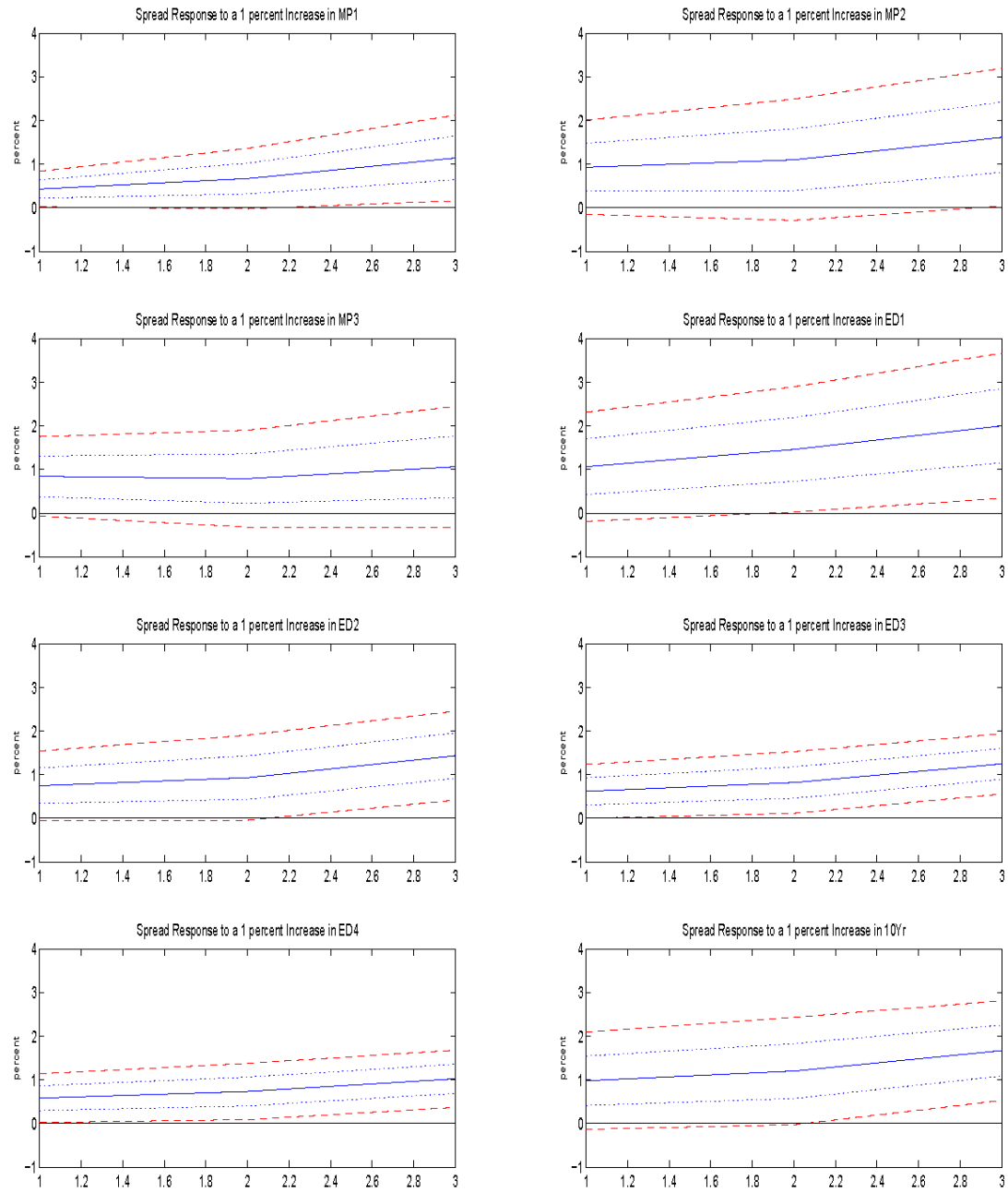
**Figure 5: Mean Absolute Brazilian Stock Returns on Announcement vs. Non-Announcement Days (Contemporaneous Markets)**



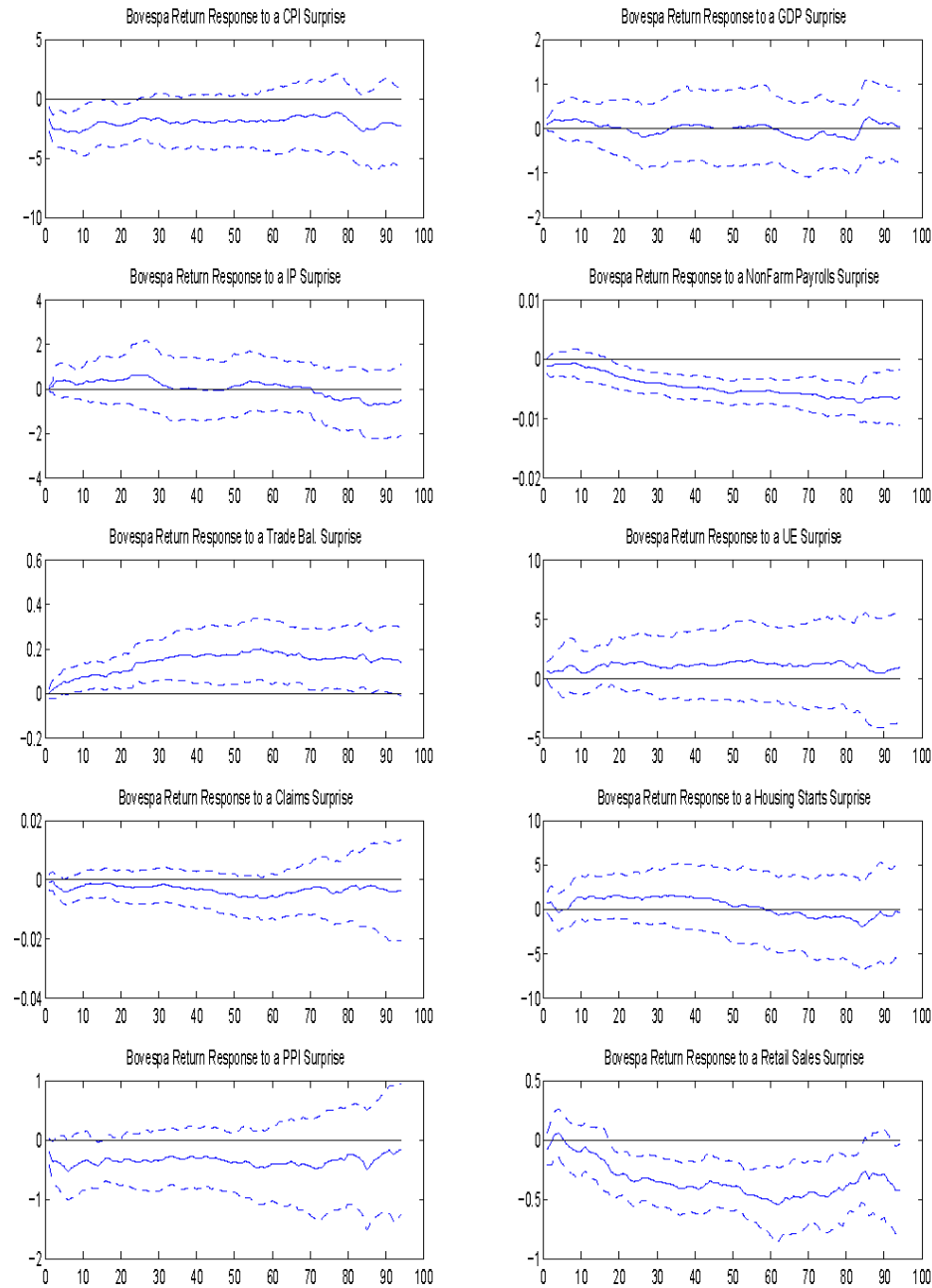
**Table 3**  
**Response of Brazil C Bond Spread to U.S Macro and Monetary Policy Announcements**

	no. obs.	surprise units	1 Std. Dev. Surprise	Surprise Coefficient (0-1)	Surprise Coefficient (0-2)	R- squared (0-1)	R- squared (0-2)
CPI	53	percent	0.16	<b>0.196</b> <i>0.084</i>	<b>0.230</b> <i>0.117</i>	0.087	0.059
GDP	68	percent	0.60	0.013 <i>0.041</i>	0.035 <i>0.035</i>	0.004	0.024
Nonfarm Payrolls	71	100k	1.1	0.009 <i>0.016</i>	<b>0.049</b> <i>0.022</i>	0.007	0.084
Industrial Prod.	60	percent	0.30	-0.042 <i>0.051</i>	-0.041 <i>0.068</i>	0.008	0.005
Trade Balance	72	billions	2.60	-0.004 <i>0.003</i>	-0.003 <i>0.006</i>	0.021	0.006
Unemployment	50	percent	0.15	-0.074 <i>0.114</i>	0.081 <i>0.214</i>	0.011	0.004
Jobless Claims	294	100k	0.19	-0.026 <i>0.03</i>	0.004 <i>0.05</i>	0.002	0.000
Housing Starts	57	percent	0.09	-0.004 <i>0.098</i>	-0.053 <i>0.163</i>	0.000	0.001
PPI	57	percent	0.51	<b>0.041</b> <i>0.018</i>	<b>0.042</b> <i>0.021</i>	0.032	0.029
Retail Sales	67	percent	0.79	-0.003 <i>0.011</i>	-0.001 <i>0.010</i>	0.001	0.000
FOMC*	40	percent	.04	<b>0.433</b> <i>0.209</i>	0.671 <i>0.354</i>	0.033	0.029

**Figure 7: Spread Response to Changes in U.S. Interest Rates on FOMC Announcements**

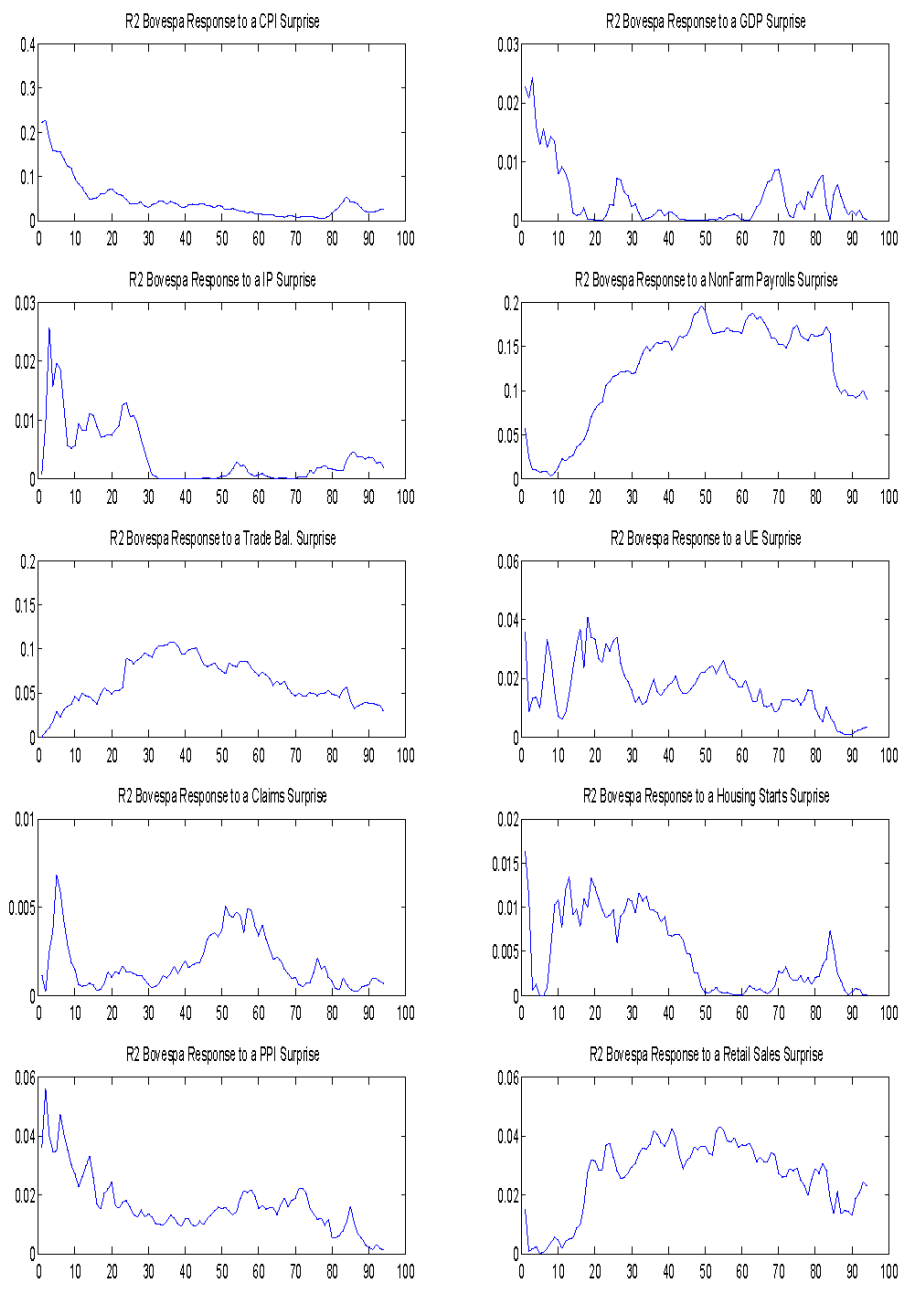


**Figure 8: Brazilian Stock Price Responses to U.S. Macro Surprises**

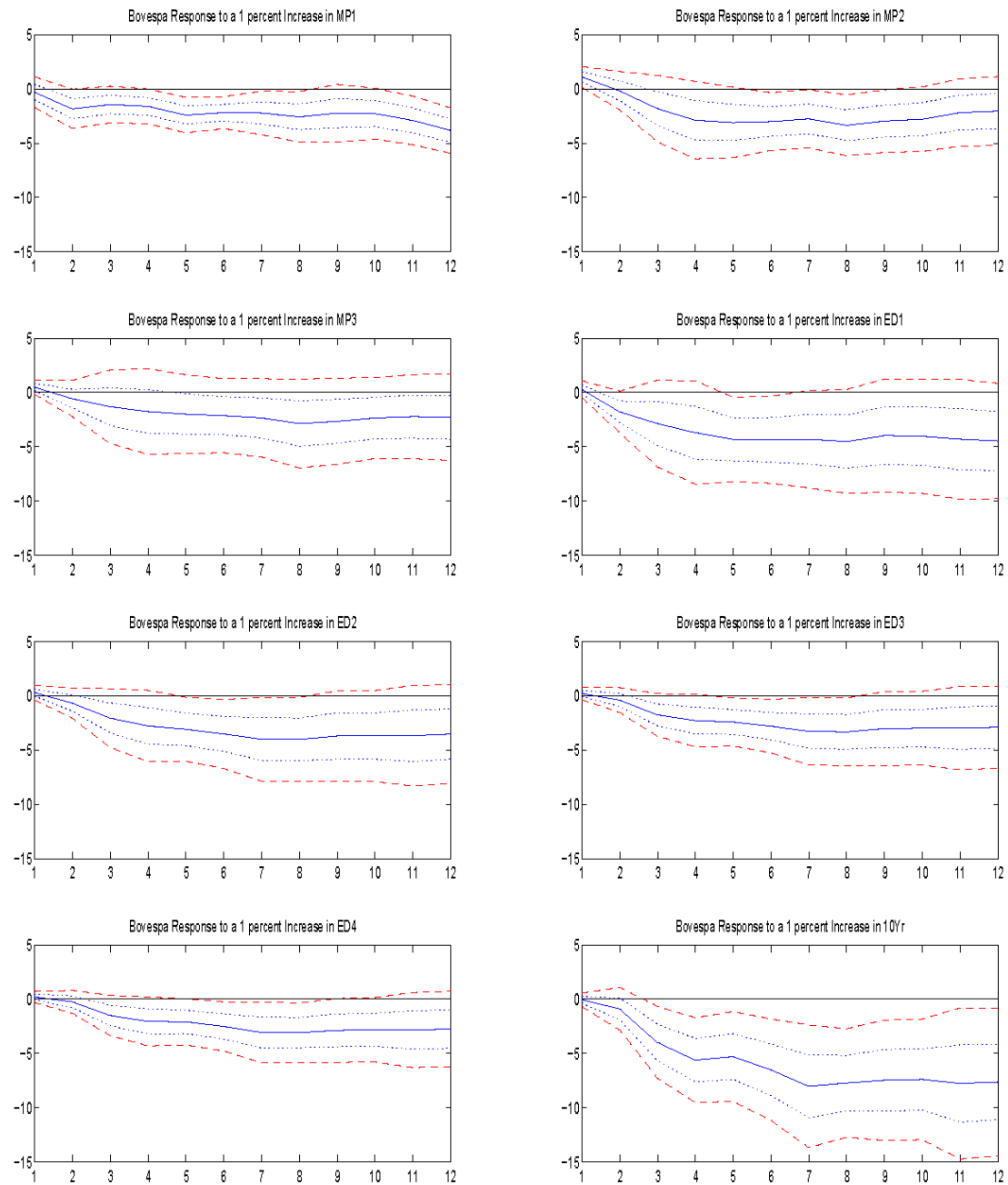




**Figure 9: Uncentered R-squared Statistics for Brazilian Stock Price Regressions**



**Figure 10: Brazilian Stock Price Response to Changes in U.S. Interest Rates on FOMC**



# Findings

- FOMC announcements:
  - Increases in U.S. rates following FOMC announcements are associated with a rise in Brazilian credit risk spread
  - But FOMC decisions have more mixed effects on Brazilian stock price index. Stock price moves only to the extent that FOMC decision moves long-term U.S. rates.
  - Information about future monetary policy decisions plays an important role in Brazilian asset prices
  - FOMC decisions explain only small portion of movement in Brazilian asset prices

# Findings

- U.S. macro announcements..
  - Some U.S. macro announcements move Brazilian spreads and stock prices.
  - Better-than-expected news about U.S. economy, if it matters, is associated with rise in credit risk spread and decline in stock price.
  - Payrolls announcements especially move Brazilian asset prices (similar to other studies).
  - Again, U.S. macro announcements explain only small portion of movements in Brazilian asset prices

- Caveats

- Sample size small and covers only a recent period
- As with other event studies, it is difficult to draw conclusions about longer run effects of FOMC decisions and U.S. macro data releases on asset prices.

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