The US, Economic News, and the Global Financial Cycle

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Motivation

Global Financial Cycle (GFC)

- Global co-movement in risky asset prices, capital flows, leverage, and credit

  The global financial cycle appears in co-movements of gross flows, asset prices, leverage, and credit creation....
  — Rey (2013)

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- Common narrative
  - In good times: capital flows in, asset prices appreciation, credit and leverage expand
  - In bad times: capital flows reverse, asset prices fall, credit and leverage contract

  $\Rightarrow$ External/supply-driven source of volatility

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Global Financial Cycle (GFC)

- Global co-movement in risky asset prices, capital flows, leverage, and credit

  The global financial cycle appears in co-movements of gross flows, asset prices, leverage, and credit creation.... But what are its drivers?
  — Rey (2013)

- Common narrative
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  - In bad times: capital flows reverse, asset prices fall, credit and leverage contract

  $\Rightarrow$ External/supply-driven source of volatility

- But: Could be driven by common shocks, not necessarily inefficient (Bernanke, 2017)

Motivation

Prior Literature

1. US monetary policy shocks only established driver of GFC (Miranda-Agrippino and Rey, 2020)
    - But: typically explain small amount of business cycle variation (Ramey, 2016)

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2. Special role of US in intl. financial and monetary system
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What role do developments in US economy play for GFC?

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What role do developments in US economy play for GFC?

- How can we establish a causal link?
- What can we learn about mechanisms?

This Paper

1. **Study effect of US macro news on intl. risky asset prices**
    - Intraday event study $\Rightarrow$ clean identification
    - Macro release surprises (GDP, nonfarm payrolls,...)
    - Stock indexes of 27 countries, VIX, and commodity prices

This Paper

1. **Study effect of US macro news on intl. risky asset prices**

2. **Quantify persistence of effect at lower frequencies**
   - Two-step approach by Altavilla et al. (2017)
   - Explanatory power at monthly and quarterly frequencies

This Paper

1. **Study effect of US macro news on intl. risky asset prices**

2. **Quantify persistence of effect at lower frequencies**

3. **Study underlying mechanisms**

   - News surprise $\neq$ structural shock
   - Common shock or transmission?
     $\Rightarrow$ Study macro news of other G7 countries
   - Stock prices driven by interest rates, risk premium, or cash flows?
     $\Rightarrow$ Study stock-bond correlation
   - Role of financial integration & exchange rate

Preview of Findings

Three new empirical facts

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Three new empirical facts

US macro news

1. have strong effects on intl. risky asset prices
    - e.g. GDP $\uparrow \Rightarrow$ stock prices $\uparrow$, VIX $\downarrow$, and commodity prices $\uparrow$
    - magnitude similar to S&P 500 response

Preview of Findings

Three new empirical facts

US macro news

1. have strong effects on intl. risky asset prices
2. generate co-movement in stock markets across countries
    - stock markets respond in the same direction to US macro news
    - defining feature of GFC

Preview of Findings

Three new empirical facts

US macro news

1. have strong effects on intl. risky asset prices
2. generate co-movement in stock markets across countries
3. explain sizable fraction of variation at lower frequencies
    - $\approx$ 15% of intl. stock markets at quarterly frequency (18% of S&P 500)
    - e.g. 17% of Italian FTSE MIB
    - much more than US monetary policy *shocks*

Preview of Findings

Three new empirical facts

US macro news

1. have strong effects on intl. risky asset prices
2. generate co-movement in stock markets across countries
3. explain sizable fraction of variation at lower frequencies

$\Rightarrow$ Supports view of US as origin or hub of GFC

Preview of Findings

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Underlying mechanism

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Underlying mechanism

1. Findings not driven by common shocks
    - Macro news of other G7 countries do not have similar effects

Preview of Findings

Three new empirical facts

US macro news

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Underlying mechanism

1. Findings not driven by common shocks
2. Results consistent with effect on investors' risk-taking behavior

   $\Rightarrow$ US monetary policy cannot explain findings

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Underlying mechanism

1. Findings not driven by common shocks
2. Results consistent with effect on investors' risk-taking behavior
3. Countries' responsiveness correlated with financial integration

   $\Rightarrow$ Consistent with models of financial market frictions

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Related Literature

- Global financial cycle:
  - antecedents: Diaz-Alejandro (1983, 1984); Calvo et al. (1993, 1996); Reinhart and Reinhart (2008)
  - existence, implications, and US monetary policy: Rey (2013); Bruno and Shin (2015); Obstfeld (2015); Jordà et al. (2019); Cerutti et al. (2019); Monnet and Puy (2019); Miranda-Agrippino et al. (2020)

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- US as center of intl. monetary and financial system:
  - world banker: Gourinchas and Rey (2007)
  - dollar dominance: Goldberg and Tille (2008); Gopinath (2015); Gopinath et al. (2020); Maggiori et al. (2020)

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- US macro news and asset prices:
  - domestic: McQueen and Roley (1993); Boyd et al. (2005); Rigobon and Sack (2008); Beechey and Wright (2009); Swanson and Williams (2014); Gilbert et al. (2017); Law et al. (2018); Gürkaynak et al. (2018)
  - international: Faust et al. (2007); Andersen et al. (2007); Ehrmann et al. (2011)

Outline

1. Data
2. High-frequency Effects of US Macro News on GFC
3. Explanatory Power of US Macro News
4. Inspecting the Mechanism
5. Conclusion

1. Data

US Macro News

Example

- *Employment Situation Summary*, 8:30 a.m. (EDT) Friday, October 2, 2020

  Total nonfarm payroll employment rose by 661,000 in September, and the unemployment rate declined to 7.9 percent, the U.S. Bureau of Labor Statistics reported today. (BLS, 2020)

US Macro News

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Data Overview

- Source: Bloomberg Economic Calendar
- Release date and time, value, median market expectation prior to release
- Surprise of announcement y

$$s^{y}_{US,t} = \frac{y_{US,t} - E\left[y_{US,t}|\mathcal{I}_{t-\Delta^-}\right]}{\hat{\sigma}^{y}_{US}}$$

- Sample period: November 1997 - June 2019
- Broad set of US macro news releases (66 Series)

US Macro News

Focus on 12 major releases

	Release Time	Frequency	Category	Observations
Capacity Utilization	9:15 am	Monthly	Real Activity	268
CB Consumer Confidence	10:00 am	Monthly	Real Activity	268
Core CPI	8:30 am	Monthly	Price	269
Core PPI	8:30 am	Monthly	Price	269
Durable Goods Orders	8:30 am	Monthly	Real Activity	260
GDP A	8:30 am	Quarterly	Real Activity	89
Initial Jobless Claims	8:30 am	Weekly	Real Activity	1140
ISM Mfg Index	10:00 am	Monthly	Real Activity	271
New Home Sales	10:00 am	Monthly	Real Activity	261
Nonfarm Payrolls	8:30 am	Monthly	Real Activity	268
Retail Sales	8:30 am	Monthly	Real Activity	270
UM Consumer Sentiment P	10:00 am	Monthly	Real Activity	241

▸ Figure — Time Series ▸ Table — All News

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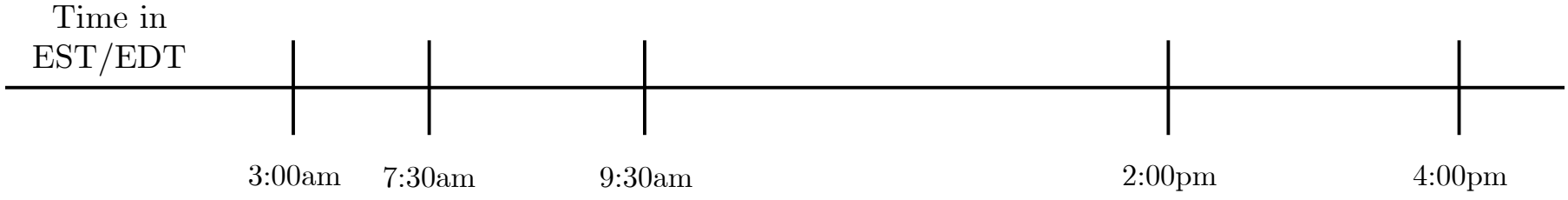
- Divide releases into real activity and price news (Beechey and Wright, 2009)

▸ Figure — Time Series ▸ Table — All News

Sample of 27 countries based on trading hours



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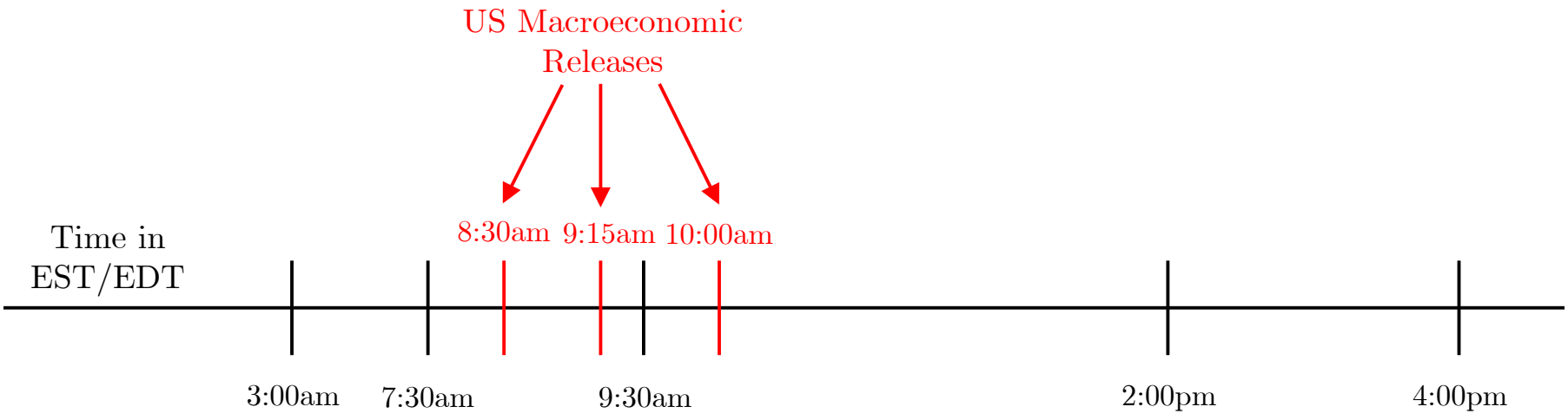
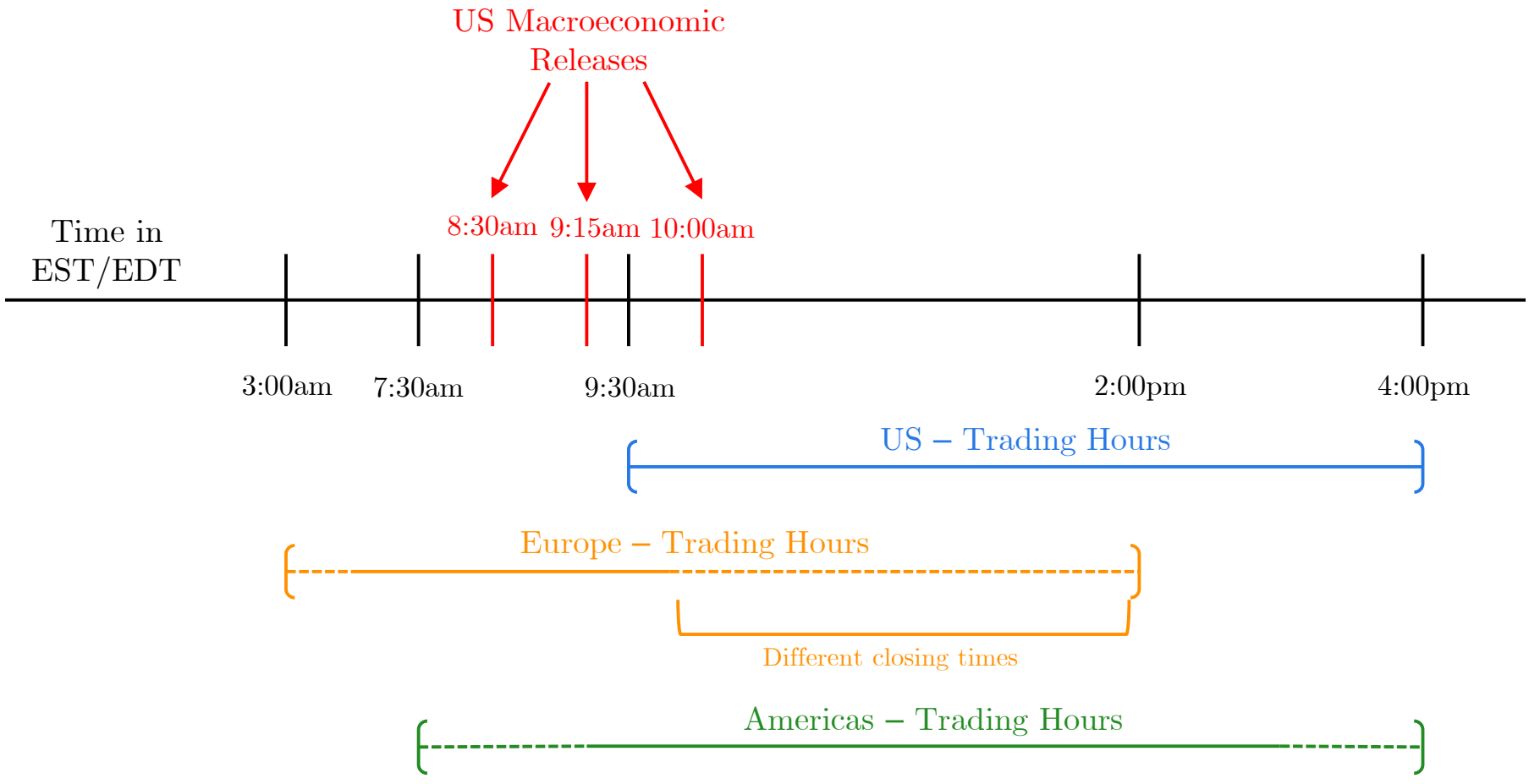


International Stock Markets

Sample of 27 countries based on trading hours



Overview of Intraday Financial Data

Name	Sample	Country	ISO	Name	Sample	Country	ISO
International Stock Indexes							
MERVAL	1996–2019	Argentina	ARG	FTSE/Athex Large Cap	1997–2019	Greece	GRC
ATX	1996–2019	Austria	AUT	BUX	1997–2019	Hungary	HUN
BEL 20	1996–2019	Belgium	BEL	ISEQ	1996–2019	Ireland	IRL
Bovespa	1996–2019	Brazil	BRA	FTSE MIB	1996–2019	Italy	ITA
S&P/TSX	2000–2019	Canada	CAN	S&P/BMV IPC	1996–2019	Mexico	MEX
SMI	1996–2019	Switzerland	CHE	AEX	1996–2019	Netherlands	NLD
IPSA	1996–2019	Chile	CHL	OBX	1996–2019	Norway	NOR
PX	1999–2019	Czech Republic	CZE	WIG20	1997–2019	Poland	POL
DAX	1996–2019	Germany	DEU	PSI-20	1996–2019	Portugal	PRT
OMX Copenhagen 20	2000–2019	Denmark	DNK	MOEX Russia	2001–2019	Russia	RUS
IBEX 35	1996–2019	Spain	ESP	OMX Stockholm 30	1996–2019	Sweden	SWE
OMX Helsinki 25	2001–2019	Finland	FIN	BIST 30	1997–2019	Turkey	TUR
CAC 40	1996–2019	France	FRA	FTSE/JSE Top 40	2002–2019	South Africa	ZAF
FTSE 100	1996–2019	United Kingdom	GBR				
Other Risky Asset Prices							
E-mini S&P 500 Futures	1997–2019						
VIX	1996–2019						
VIX Futures	2011–2019						
S&P GSCI Agriculture	2007–2019						
S&P GSCI Energy	2007–2019						
S&P GSCI Industrial Metals	2007–2019						

2. High-frequency Effects of US Macro News on GFC

Pooled Effect

Estimation

$$\Delta q_{i,t} = \alpha_i + \gamma^y s^y_{US,t} + \sum_{k \neq y} \gamma^k s^k_{US,t} + \varepsilon_{i,t}$$

- Event study of announcement y at time t
- $\Delta q_{i,t}$: 30-min log-change of country i's stock market index
- $s^y_{US,t}$: surprise of interest (pooled effect γ^y)
- $s^k_{US,t}$: other surprises about US macro variables
- Standard errors clustered by announcement and country
- ▸ Figure — Impulse Responses

Pooled Effect — Results

	Capacity Utilization	CB Consumer Confidence	Core CPI	Core PPI	Durable Goods Orders	GDP A
Stock Index (bp)						
News	4.98**	12.61***	-9.06***	-4.58***	5.63***	17.81***
	(2.30)	(2.07)	(1.86)	(1.37)	(1.61)	(3.43)
R^2	0.06	0.13	0.11	0.15	0.10	0.26
Observations	5907	5903	5576	5686	5468	1864
	Initial Jobless Claims $\cdot(-1)$	ISM Mfg Index	New Home Sales	Nonfarm Payrolls	Retail Sales	UM Consumer Sentiment P
Stock Index (bp)						
News	4.86***	11.36***	4.23***	17.24***	10.14***	5.71***
	(0.74)	(2.28)	(1.47)	(3.02)	(2.28)	(1.57)
R^2	0.09	0.12	0.03	0.13	0.15	0.04
Observations	23741	5393	5743	5556	5672	5562

***, **, and * indicate significance at the 1, 5, and 10 percent level.

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- Positive real activity news increases stock prices
- Inflation news (positive price news) decreases stock prices

▸ Table — Rel. to US Stocks

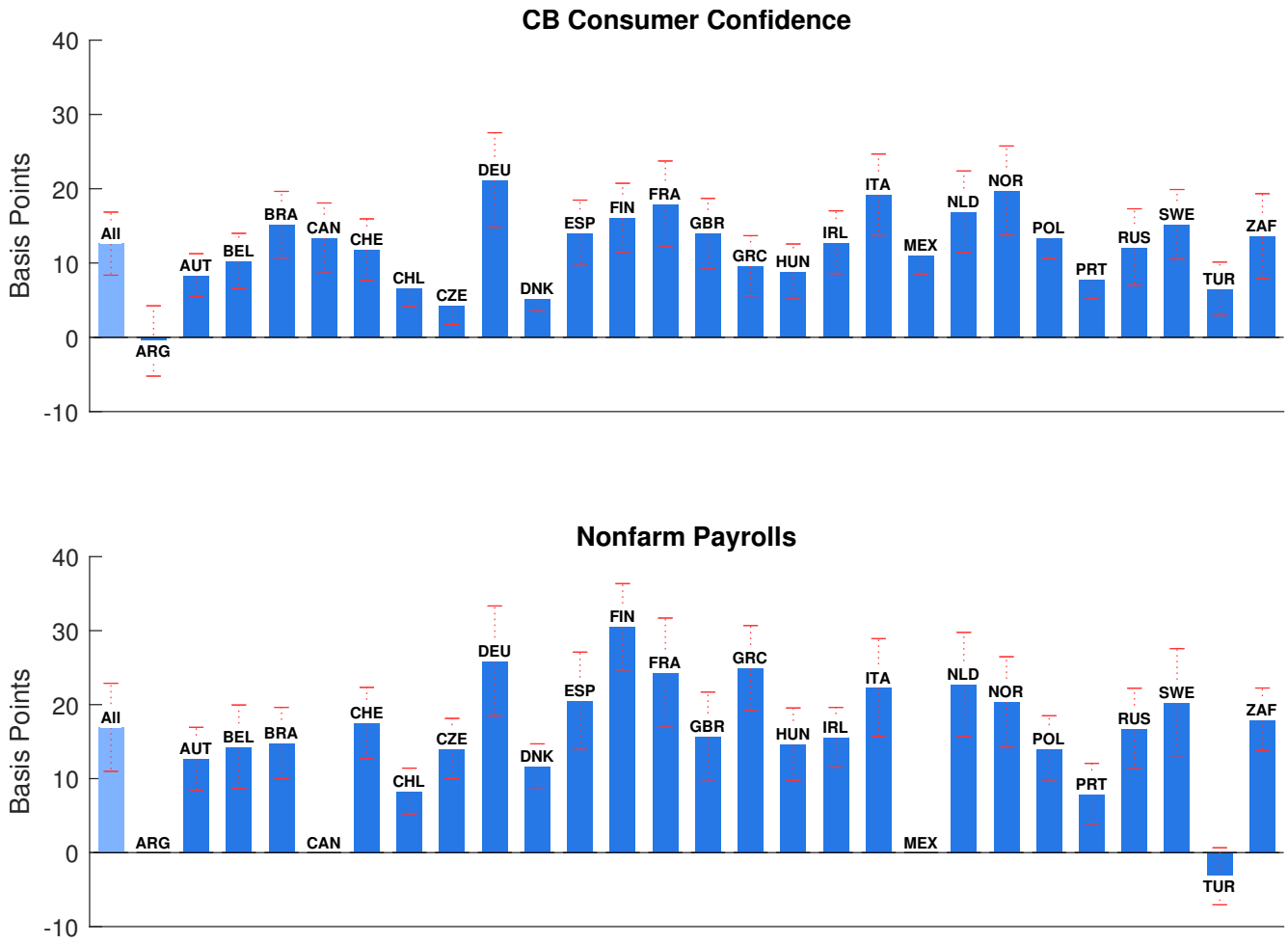
Cross-country Heterogeneity

Estimation

$$\Delta q_{i,t} = \alpha_i + \gamma_i^y s_{US,t}^y + \sum_{k \neq y} \gamma_i^k s_{US,t}^k + \varepsilon_{i,t},$$

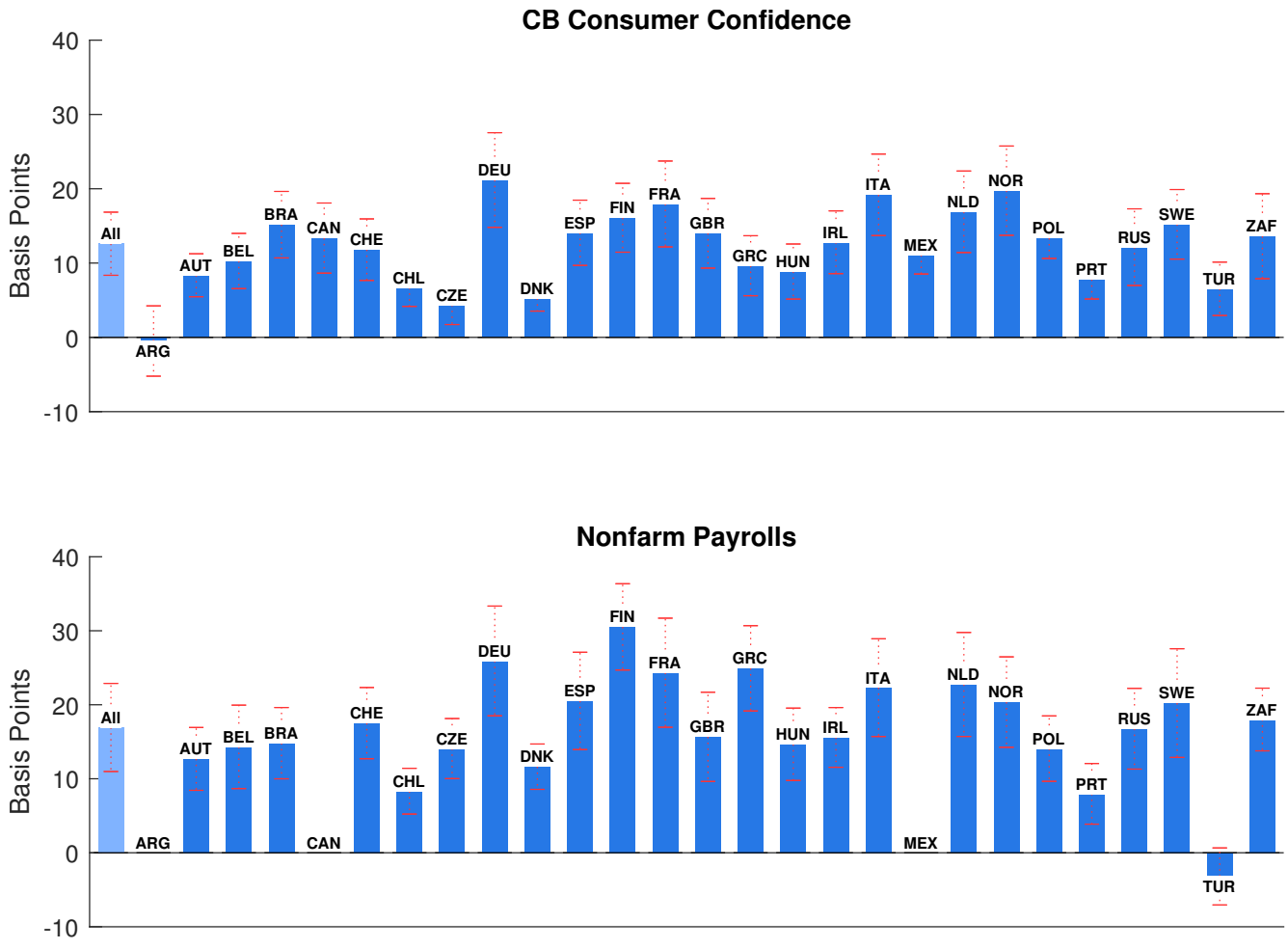
- Country-specific coefficients γ_i^y

Cross-country Heterogeneity — Results I



▸ Figure — More Releases

Cross-country Heterogeneity — Results I

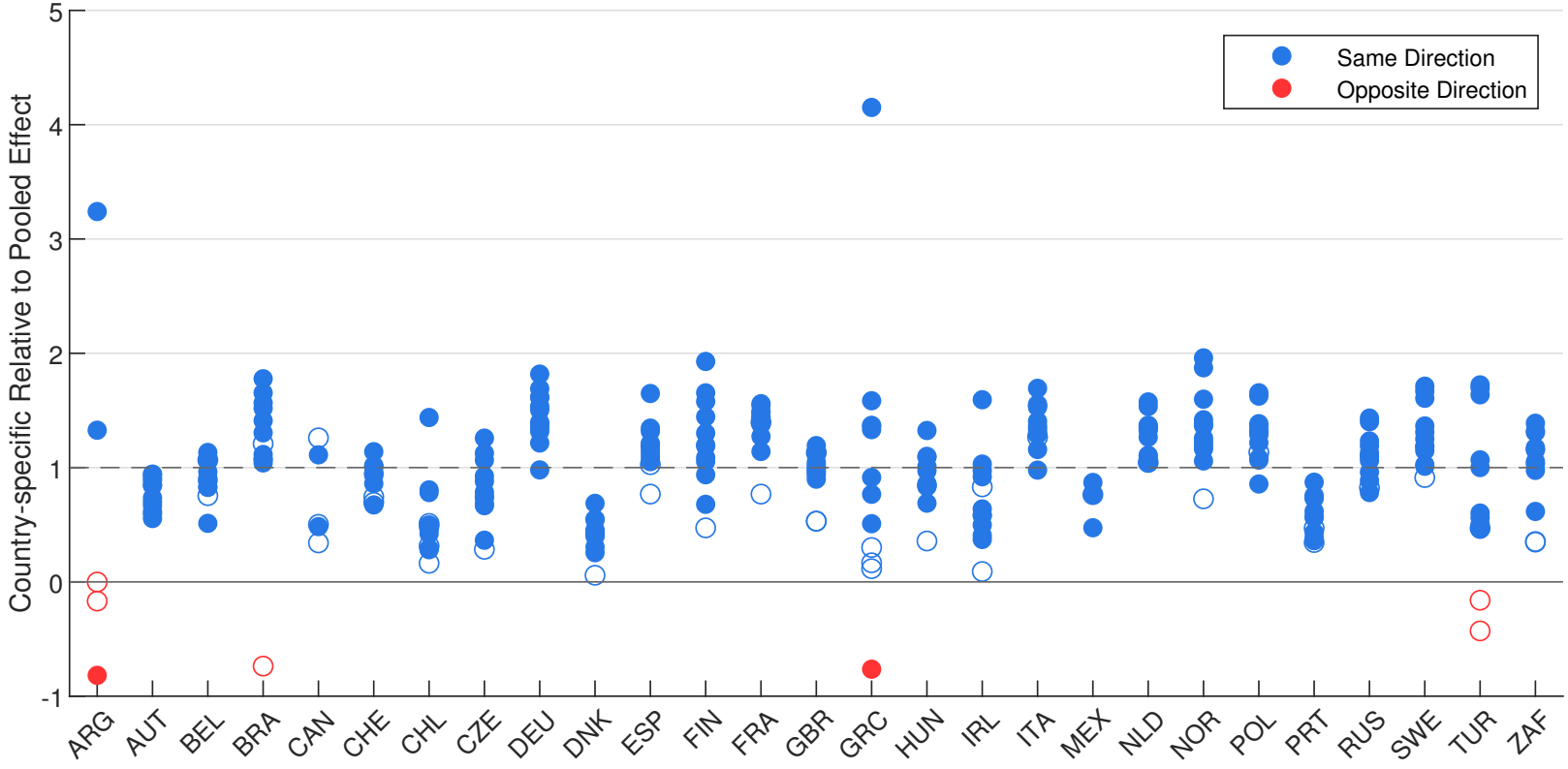


⇒ US News introduce co-movement of stock markets

▸ Figure — More Releases

Cross-country Heterogeneity — Results II

All main releases



Other Risky Asset Prices

	Capacity Utilization	CB Consumer Confidence	Core CPI	Core PPI	Durable Goods Orders	GDP A
VIX (bp)						
News	-13.75	-64.43***	43.27***	-7.97	-4.42	-51.40***
	(12.75)	(12.79)	(15.92)	(8.63)	(5.61)	(18.27)
R^2	0.05	0.14	0.24	0.43	0.27	0.37
Observations	102	265	99	102	102	34
Commodity Factor (bp)						
News	0.65	18.24***	-3.16	-1.34	6.78*	24.12**
	(4.00)	(5.12)	(3.97)	(3.29)	(3.63)	(11.19)
R^2	0.11	0.15	0.15	0.13	0.18	0.31
Observations	146	146	145	146	145	48
	Initial Jobless Claims $\cdot(-1)$	ISM Mfg Index	New Home Sales	Nonfarm Payrolls	Retail Sales	UM Consumer Sentiment P
VIX (bp)						
News	-15.40**	-60.07***	-25.08*	-114.08***	-92.44***	-41.66***
	(6.57)	(18.01)	(14.29)	(28.69)	(25.11)	(15.20)
R^2	0.14	0.12	0.05	0.31	0.33	0.05
Observations	438	264	258	101	100	224
Commodity Factor (bp)						
News	7.44***	15.96***	12.36**	40.00***	17.52***	-0.25
	(1.76)	(4.48)	(5.09)	(8.81)	(3.93)	(4.23)
R^2	0.11	0.23	0.12	0.26	0.25	0.01
Observations	632	145	145	142	145	146

***, **, and * refer to significance at the 1, 5, and 10 percent level.

▸ Details — Commodity Factor

Digression: Structural Interpretation of News Releases

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Empirical Specification: $\Delta q_{i,t} = \gamma_i^y s_{US,t}^y + \varepsilon_{i,t}$

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How to interpret γ_i^y?

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How to interpret γ_i^y?

$\Rightarrow$ **Build Framework**

- Extension of Faust et al. (2007) to international setting
- Log-linear multi-country world with a unique equilibrium
- State vector $x_{i,\tau}$ of country i at time τ (e.g. $x_{US,\tau}$)

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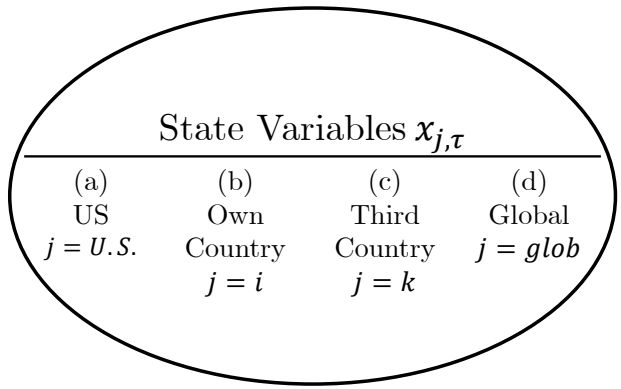
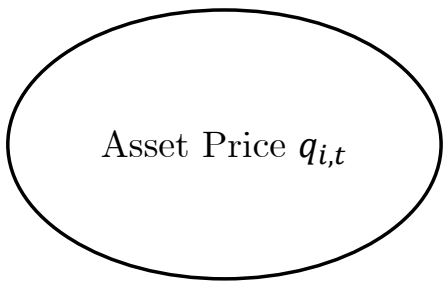
How to interpret γ_i^y?

$$\gamma_i^y =$$





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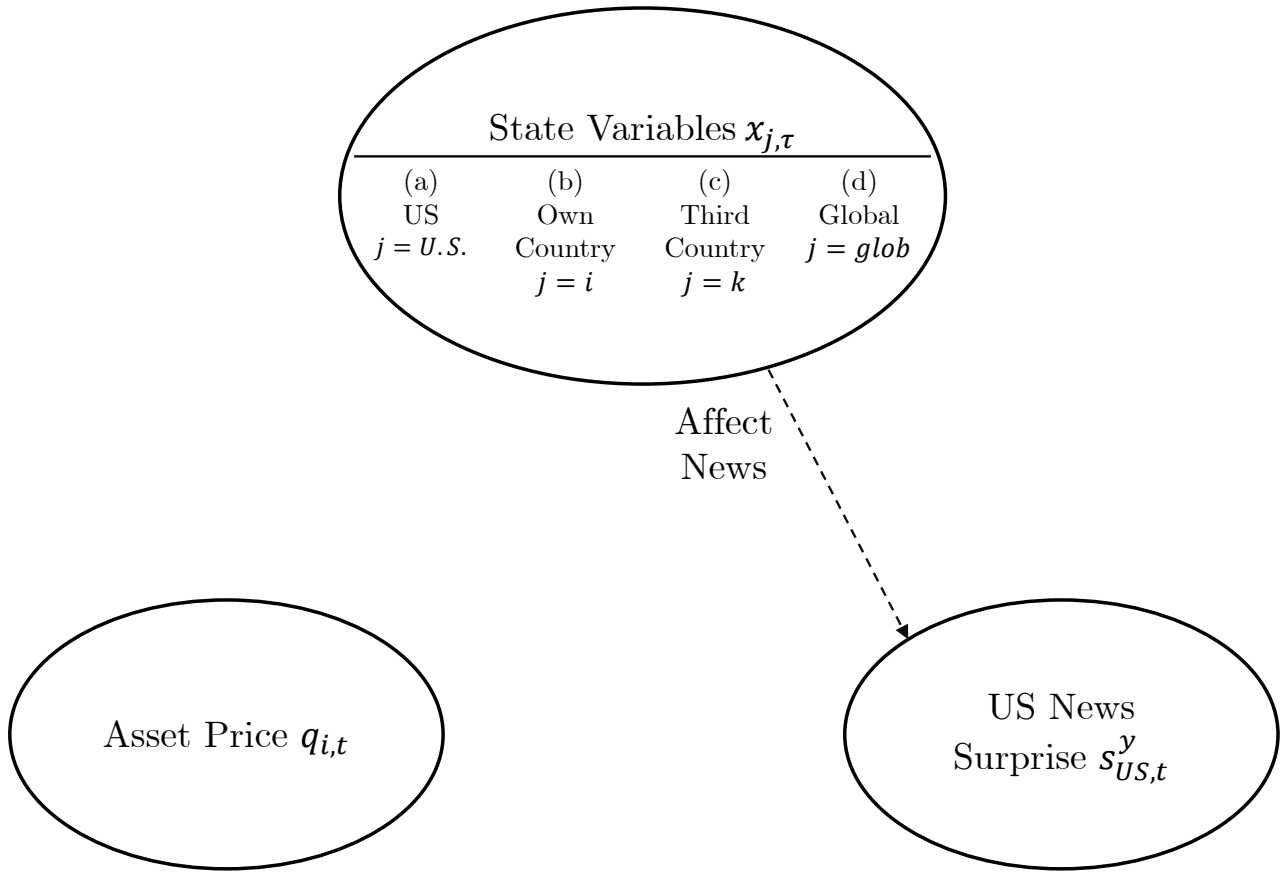

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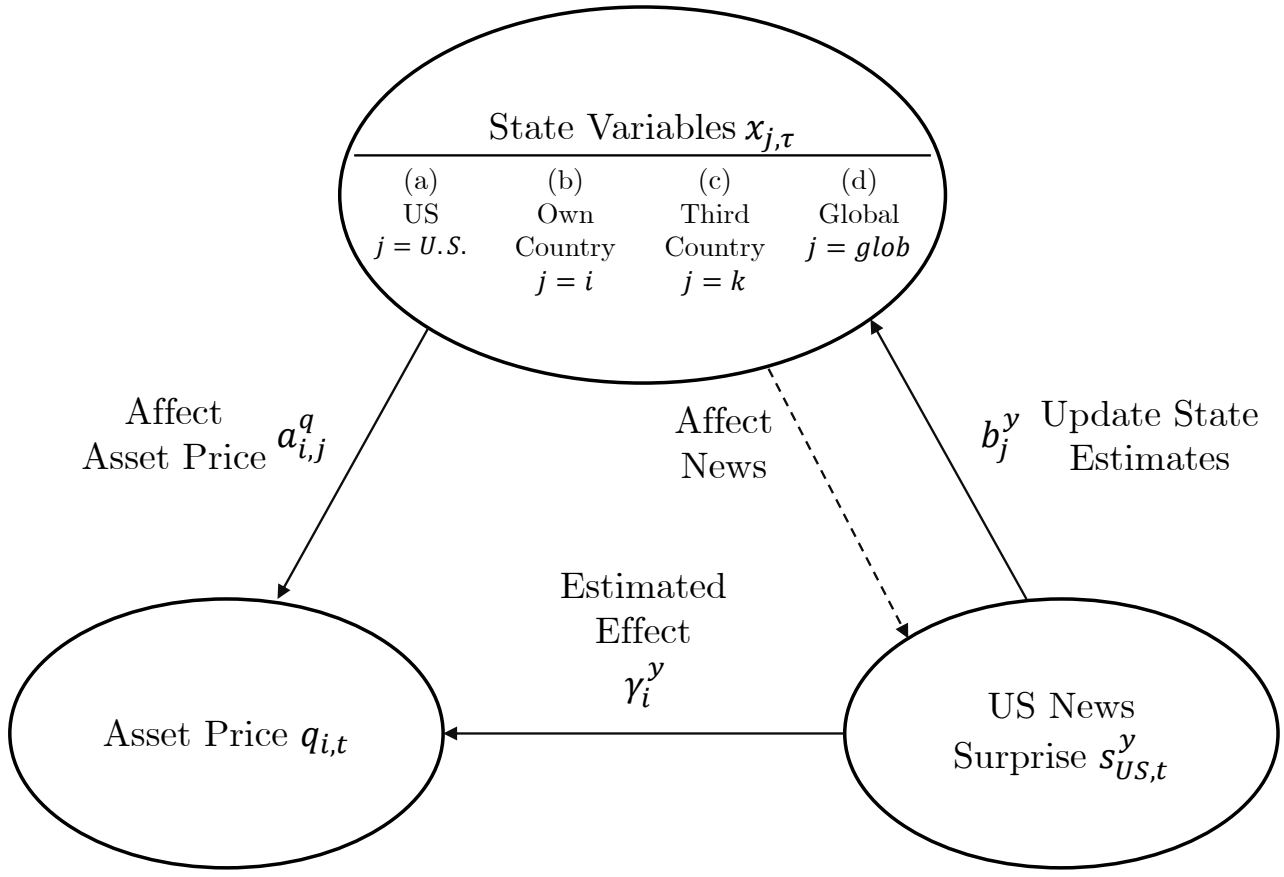

Digression: Structural Interpretation of News Releases

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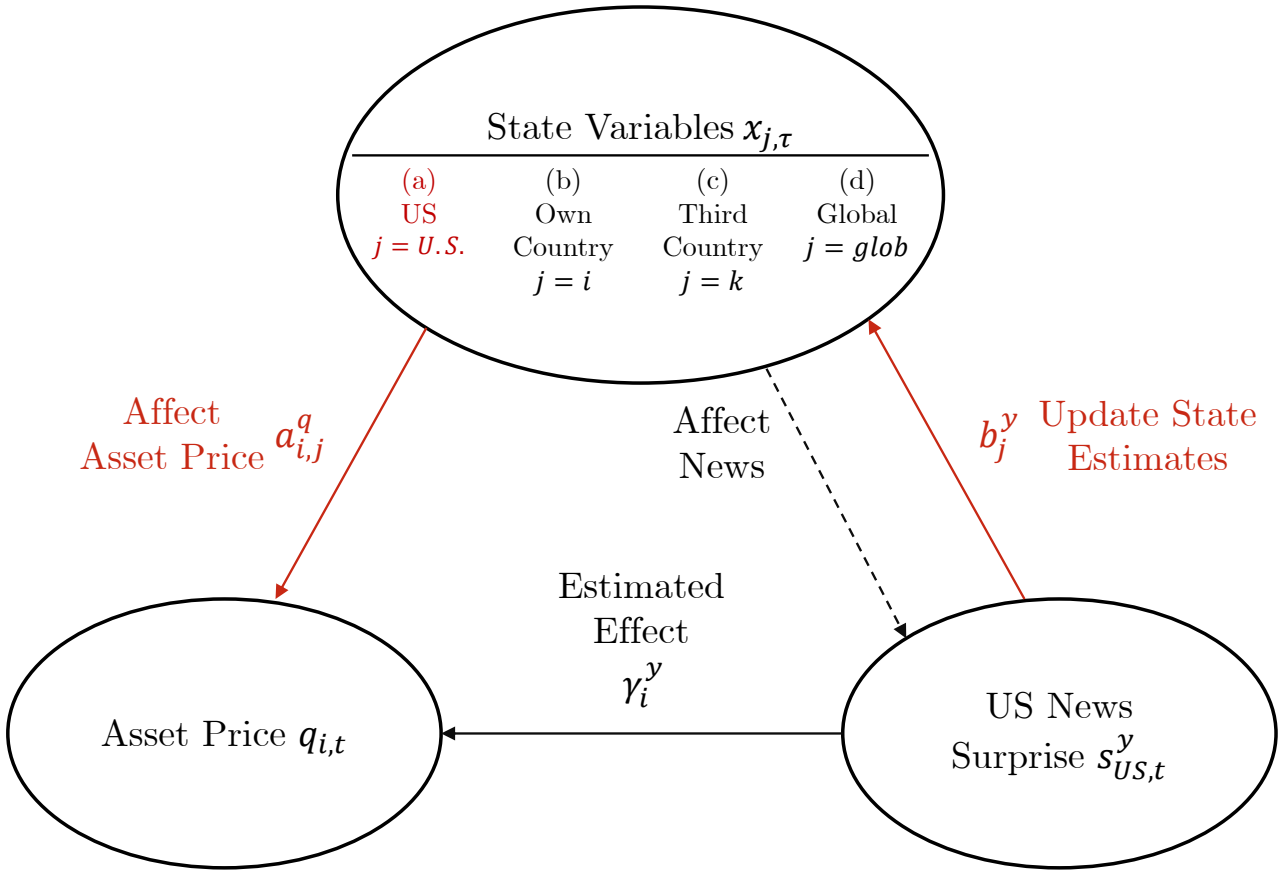
How to interpret γ_i^y?

$$\gamma_i^y = a_{i,US}^q b_{US}^y$$



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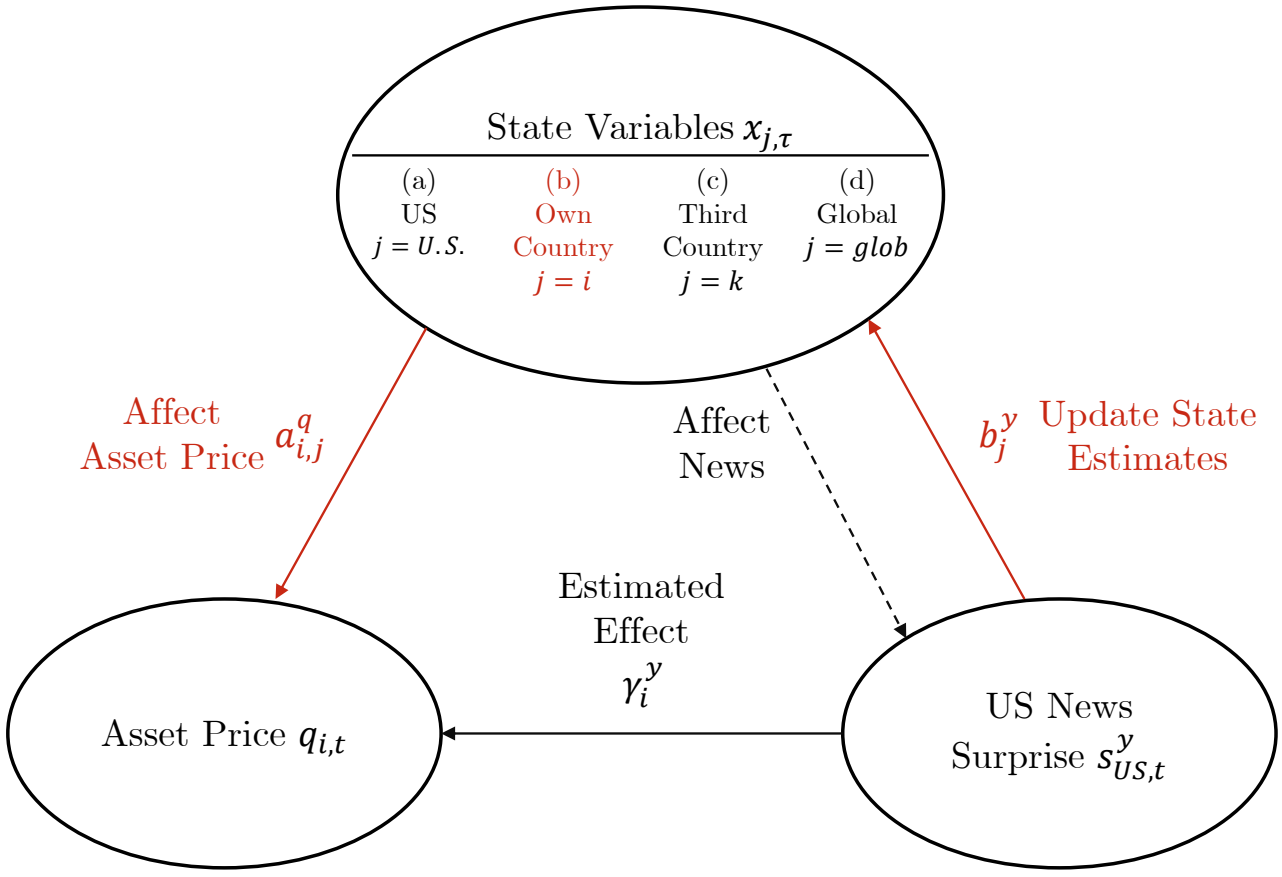

Digression: Structural Interpretation of News Releases

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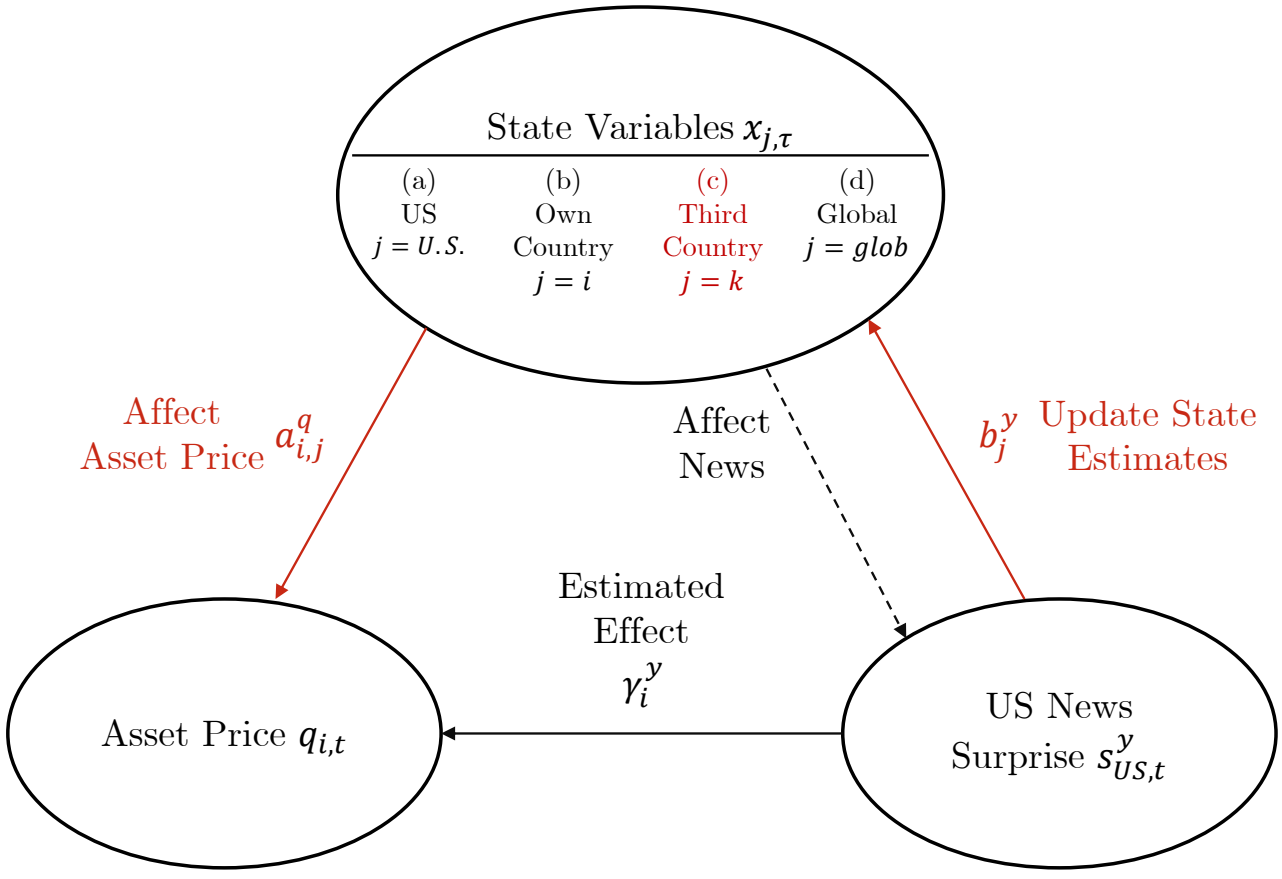

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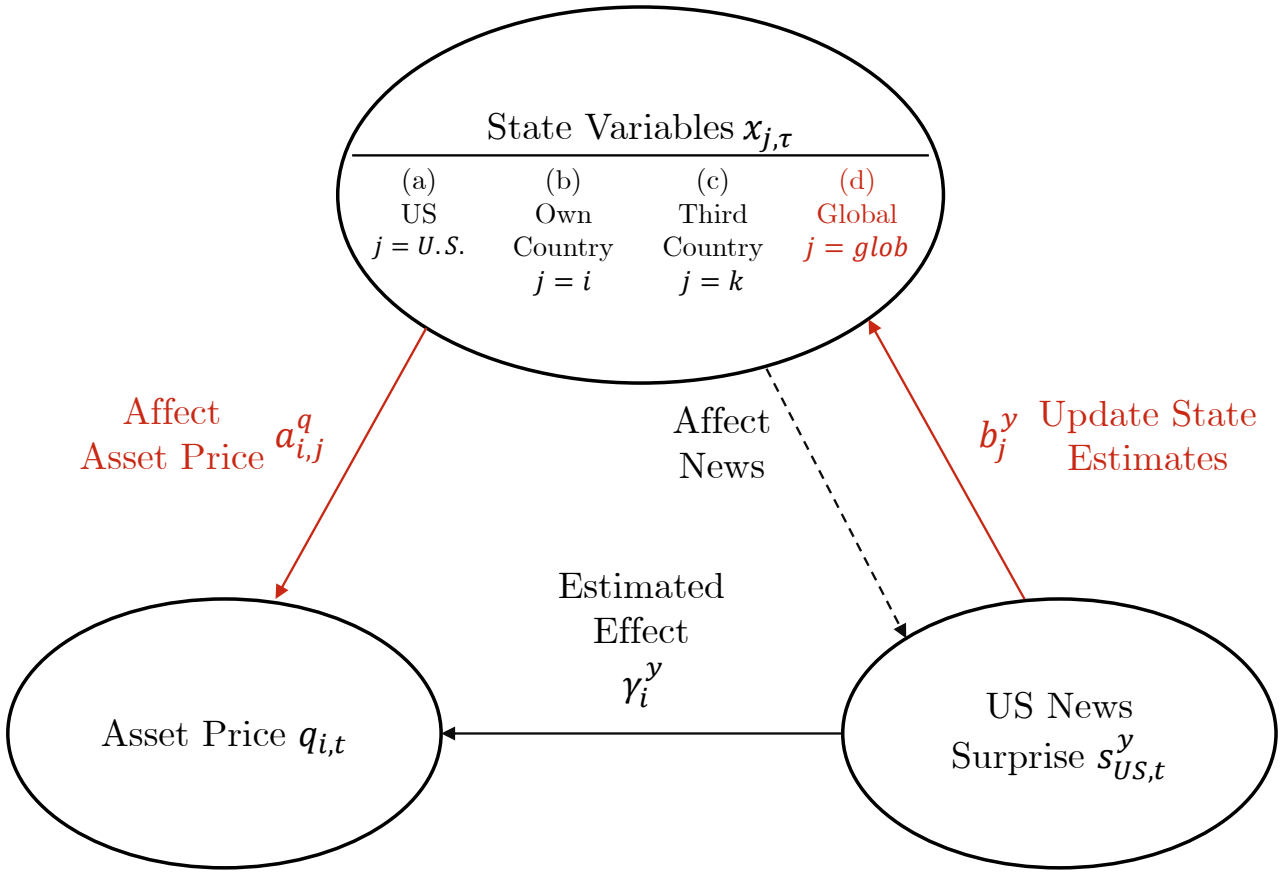

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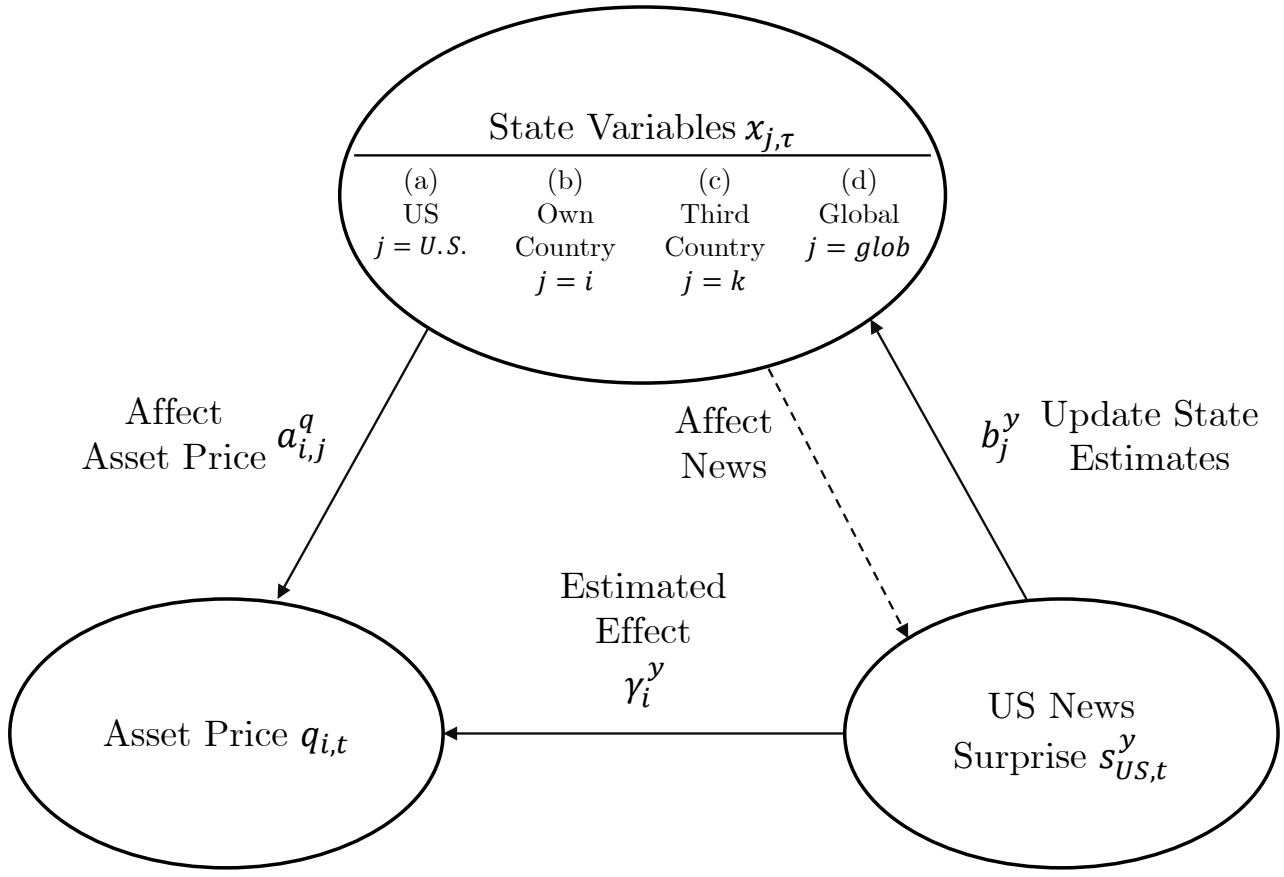

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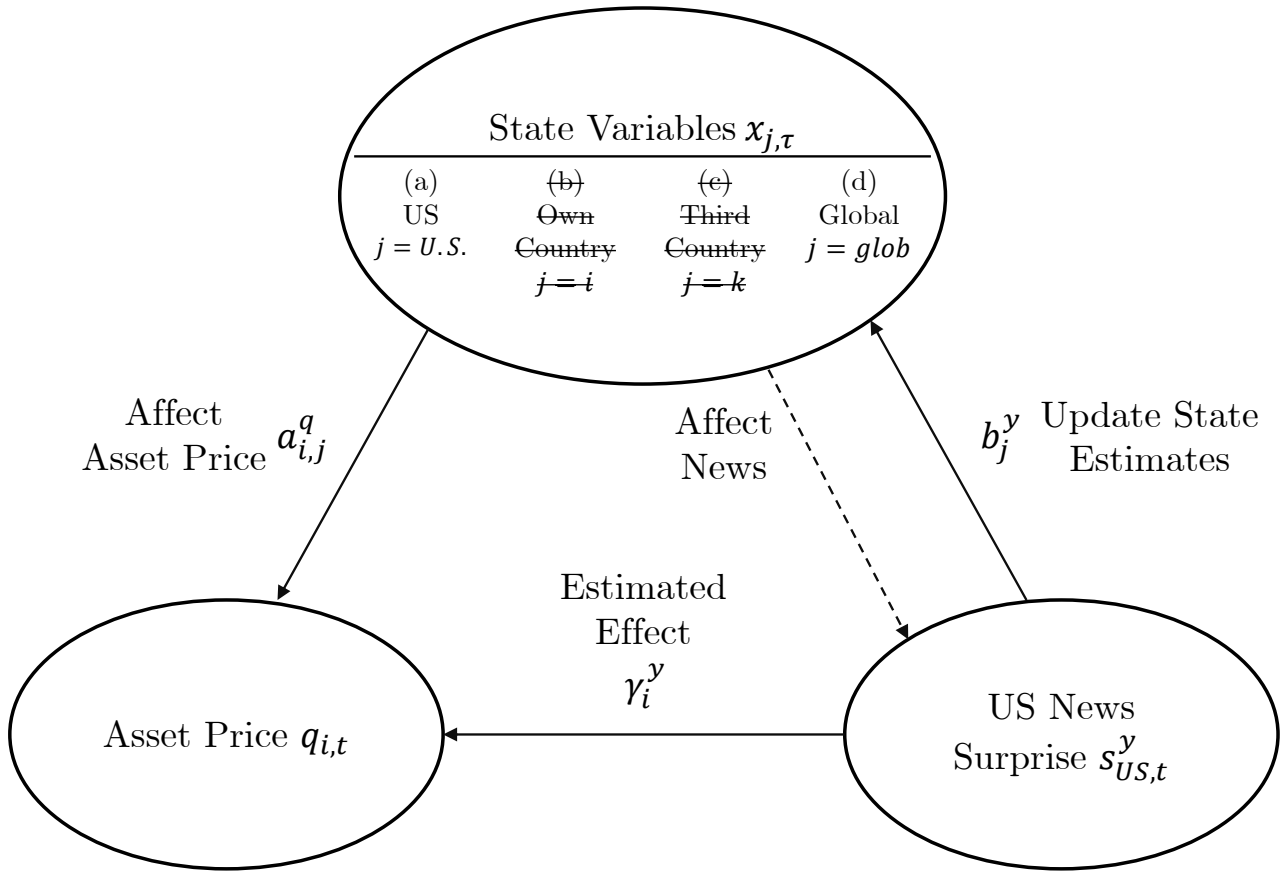

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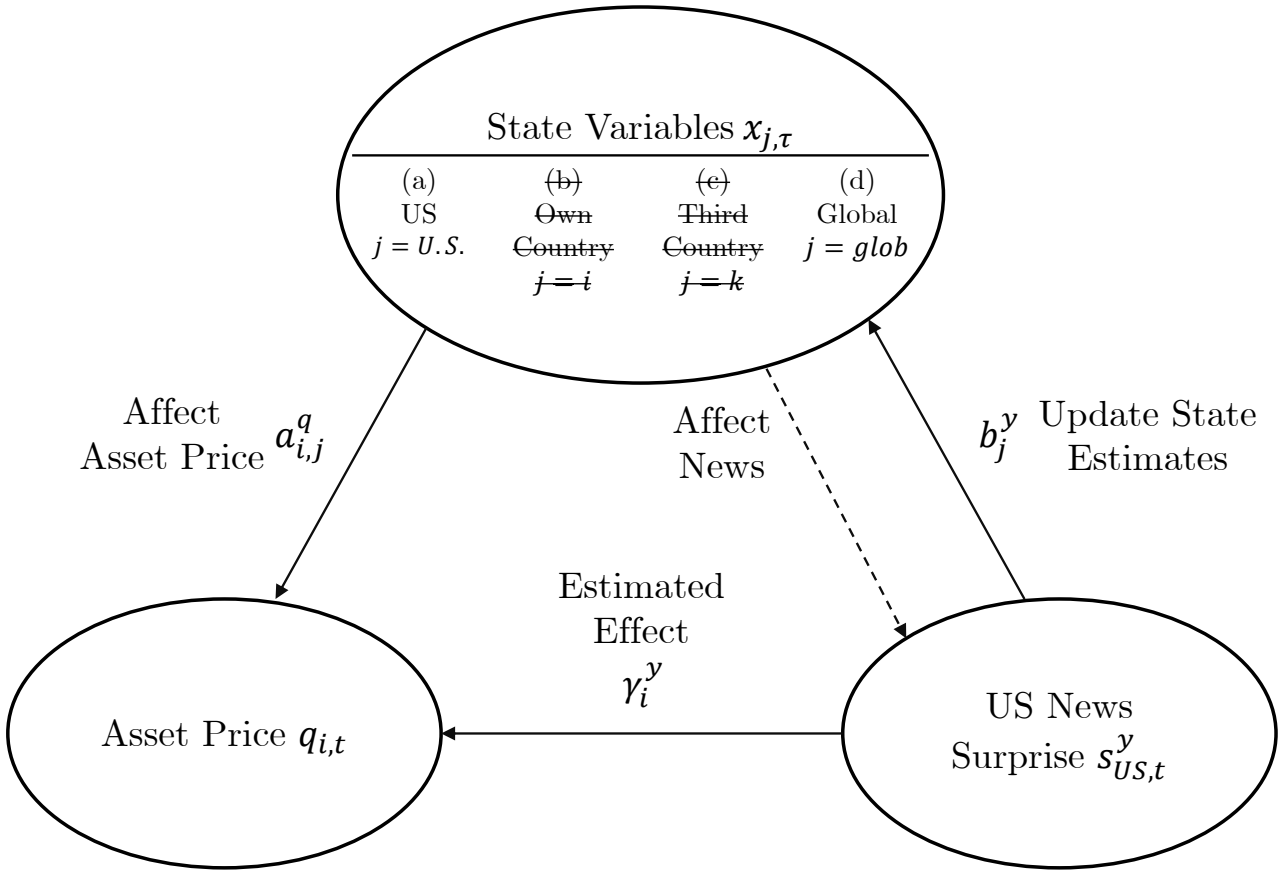

3. Explanatory Power of US Macro News

Overview

Questions

- Can US macro news account for a sizable fraction of variation of international stock markets?
- How does this compare to US monetary policy news?

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Note

- Explanatory power of headline news is conservative (Gürkaynak et al., 2018)

Methodology (Altavilla et al., 2017)

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1. Daily regression

$$\Delta q_{i,d} = \alpha_i + \sum_k \beta_i^k s_{US,d}^k + \varepsilon_{i,d}.$$

- $\Delta q_{i,d}$: Daily (close-close) of asset price q of country i
- $s_{US,d}^k$: U.S. macro news k on day d

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2. **Calculate fitted values**

$$nix_{i,d}^q := \widehat{\Delta q_{i,d}} \qquad nix_{i,d,h}^q = \sum_{j=0}^{h-1} nix_{i,d-j}^q$$

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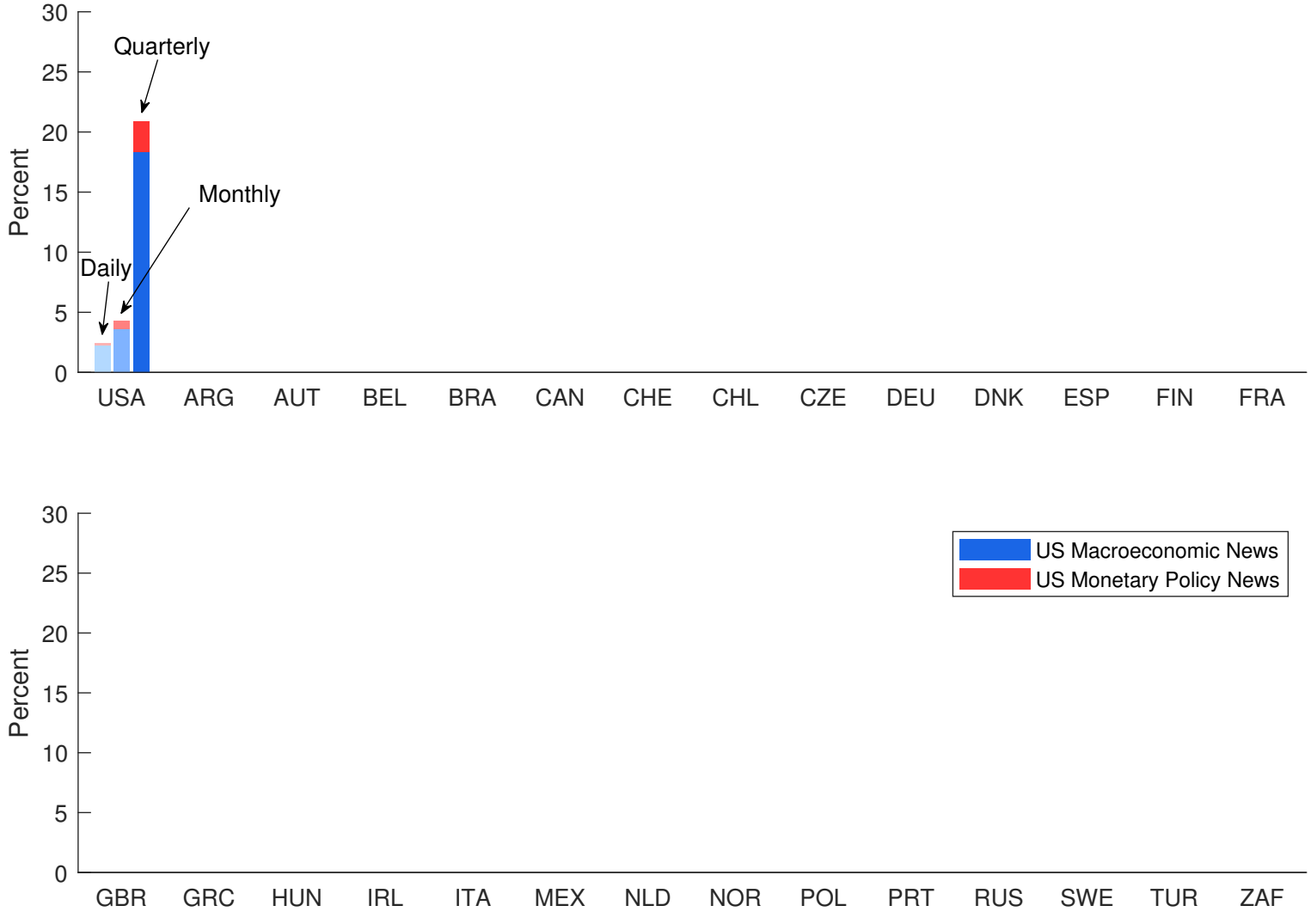
3. **Monthly/Quarterly regression**

$$\Delta_h q_{i,d} = \alpha_{i,h} + \beta_i^{q,h} nix_{i,d,h}^q + \varepsilon_{i,d,h}.$$

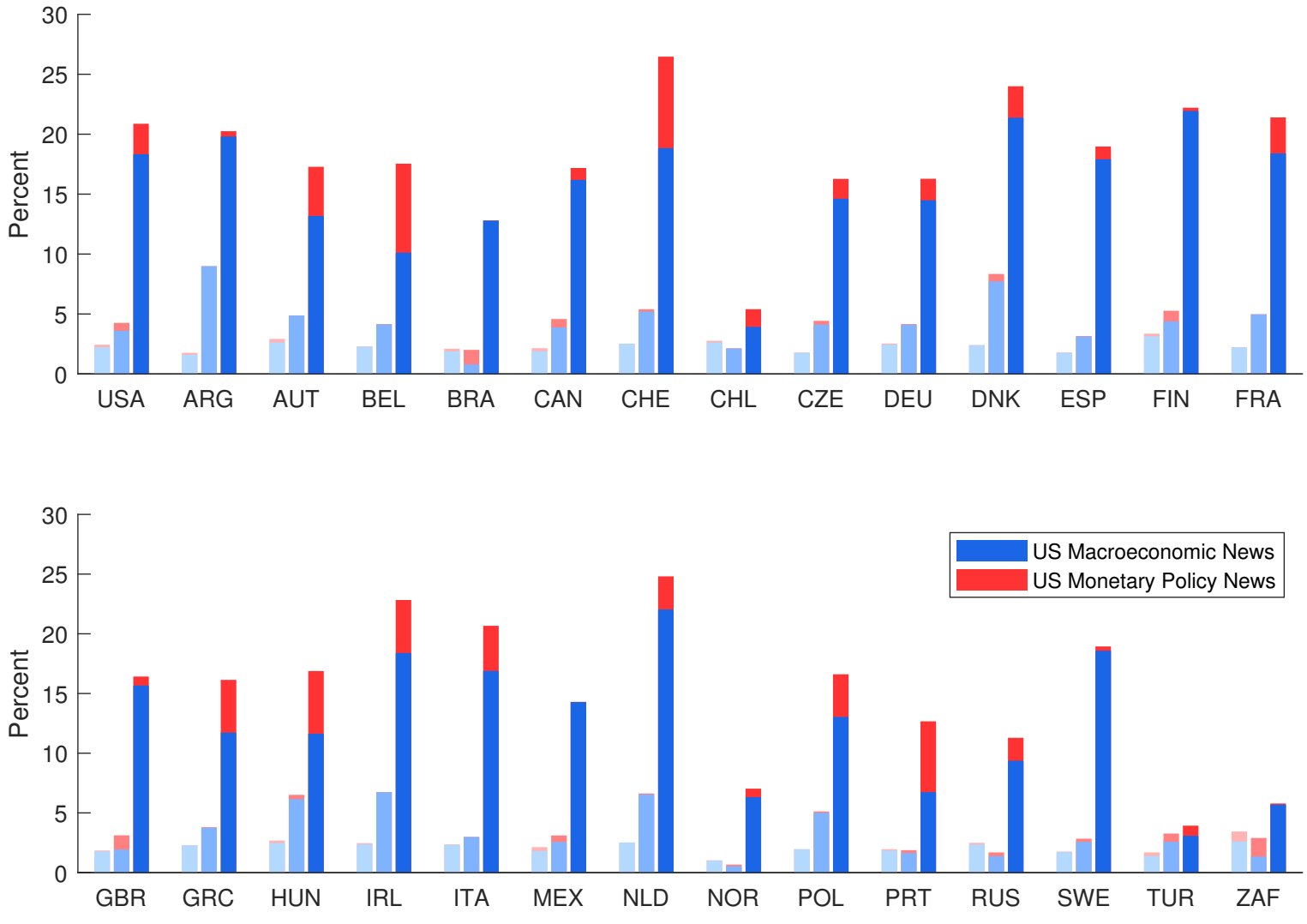
- R-squared: explanatory power of US macro news at horizon h
- Comparison w/ US monetary policy news (Nakamura and Steinsson, 2018)

R-squared: Stock Indexes



▸ Figure — VIX & Commodity Prices

R-squared: Stock Indexes



▸ Figure — VIX & Commodity Prices

4. Inspecting the Mechanism

Common Shocks vs. Transmission

Question

- Can we disentangle *transmission* from *common shocks*?

Overview

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Approach

- If international asset price respond to US macro news due to update of global common state, then US asset prices should respond to foreign news as well

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Note

- US is *large*
- "Test" sharper for smaller countries

Effect of Foreign Macro News

S&P 500 (bp)	Consumer Confidence	CPI	GDP	Industrial Production	PPI	Retail Sales	Unemployment Rate
Canada							
News		1.84**	-1.17		1.24	0.34	-0.99
		(0.89)	(1.12)		(1.14)	(0.97)	(1.01)
Observations		192	79		246	255	257
France							
News	-0.03	1.62	0.20	-0.87	2.99		0.52
	(0.73)	(1.09)	(1.03)	(1.16)	(3.70)		(0.82)
Observations	222	225	83	239	155		147
Germany							
News	0.93	-0.28	3.54**	2.10	1.27	0.58	-0.12
	(0.73)	(0.38)	(1.52)	(1.33)	(0.92)	(0.78)	(0.68)
Observations	152	196	75	249	229	222	254
Italy							
News	-0.42	-0.25	0.99	0.73	-0.28	0.79	-0.51
	(1.07)	(0.65)	(1.20)	(0.90)	(1.52)	(0.83)	(0.94)
Observations	210	234	66	229	175	169	134
Japan							
News	-0.27	-0.23	2.45*	0.20	-1.18	0.02	0.17
	(0.51)	(0.39)	(1.37)	(0.45)	(0.84)	(0.68)	(0.46)
Observations	143	196	69	222	184	187	216
United Kingdom							
News	-0.01	1.10	5.10***	-0.33	-0.46	1.94**	-1.19
	(0.55)	(0.97)	(1.80)	(0.97)	(0.96)	(0.78)	(0.93)
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Magnitudes of effects much smaller

Few significant effects concentrated in largest economies

4. Inspecting the Mechanism

Interest Rate, Risk Premium, & Cash Flow Channel

Overview

Question

- What are the underlying forces of stock price response?

Overview

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Stock Price Decomposition (Boyd et al., 2005)

$$\Delta q_{i,t} \approx c_i \left[\left(\underbrace{\Delta g_{i,t}}_{\text{cash flow}} - \underbrace{\Delta ep_{i,t}}_{\text{risk premium}} \right) - \underbrace{\Delta r_{i,t}}_{\text{interest rate}} \right]$$

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- Use 10-year govt. bond yield to estimate $\gamma^{y,r}$
- Stock & bond yield co-movement informative about dominant channel:
  - If cov $(\gamma^{y,q}, \gamma^{y,r}) < 0 \Rightarrow$ interest channel dominant
  - If cov $(\gamma^{y,q}, \gamma^{y,r}) > 0 \Rightarrow$ cash flow and risk premium channel dominant

Stock Return & Bond Yield

	Capacity Utilization	CB Consumer Confidence	Core CPI	Core PPI	Durable Goods Orders	GDP A
Stock Index (bp)						
News	4.98**	12.61***	-9.06***	-4.58***	5.63***	17.81***
	(2.30)	(2.07)	(1.86)	(1.37)	(1.61)	(3.43)
R^2	0.06	0.13	0.11	0.15	0.10	0.26
Observations	5907	5903	5576	5686	5468	1864
10-Year Bond Yield (bp)						
News	0.21***	0.54***	0.66***	0.44***	0.29***	0.88***
	(0.06)	(0.08)	(0.11)	(0.08)	(0.10)	(0.16)
R^2	0.02	0.10	0.05	0.10	0.04	0.19
Observations	4424	4214	4345	4452	4260	1386
	Initial Jobless Claims $\cdot(-1)$	ISM Mfg Index	New Home Sales	Nonfarm Payrolls	Retail Sales	UM Consumer Sentiment P
Stock Index (bp)						
News	4.86***	11.36***	4.23***	17.24***	10.14***	5.71***
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▸ Table — Time-varying

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Observations	23741	5393	5743	5556	5672	5562
10-Year Bond Yield (bp)						
News	0.28***	0.88***	0.27***	1.67***	0.46***	0.28***
	(0.04)	(0.09)	(0.06)	(0.20)	(0.09)	(0.07)
R^2	0.03	0.17	0.04	0.23	0.15	0.03
Observations	18753	3956	4128	4378	4431	3985

Dominant Channel?

cash flow and risk premium channel dominant

interest channel dominant

▸ Table — Time-varying

Implications for Role of US Monetary Policy

Can US monetary policy *reactions* explain findings?

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$\Rightarrow$ US monetary policy cannot explain foreign stock price responses

4. Inspecting the Mechanism

Role of Financial Integration

Overview

Motivation

- Literature on GFC emphasis models with financial frictions
    - International credit channel (Bernanke and Gertler, 1989; Bernanke et al., 1999)
    - Risk-taking channel (Adrian and Shin, 2014; Bruno and Shin, 2015)

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Question

- What role does country's financial integration play for its stock market's sensitivity to US news?

Role of Financial Integration — Data

Financial Integration Measure

- Data source: Lane and Milesi-Ferretti (2007, 2017)
- Financial integration of country i in year τ:

$$\text{finInt}_{i,\tau} = \frac{\text{FA}_{i,\tau} + \text{FL}_{i,\tau}}{\text{GDP}_{i,\tau}}$$

- $\text{FA}_{i,\tau}$ ($\text{FL}_{i,\tau}$) stock of foreign assets (liabilities)

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- $\text{FA}_{i,\tau}$ ($\text{FL}_{i,\tau}$) stock of foreign assets (liabilities)
- Components:
  1. Portfolio investment
  2. Foreign direct investment
  3. Other investments (e.g. loans, deposits, and trade credits)
  4. Financial derivatives
  5. Reserve assets

Role of Financial Integration — Estimation

$$\Delta q_{i,t} = \alpha_i + \gamma^y s^y_{US,t} + \delta^y \left(s^y_{US,t} \times \text{finInt}_{i,t-} \right) + \sum_{k \neq y} \gamma^k s^k_{US,t} + \sum_{k \neq y} \delta^k \left(s^k_{US,t} \times \text{finInt}_{i,t-} \right) + \zeta \, \text{finInt}_{i,t-} + \varepsilon_{i,t},$$

- $\Delta q_{i,t}$: 30-min change around announcement y at time t
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- $\Delta q_{i,t}$: 30-min change around announcement y at time t
- $\text{finInt}_{i,t-}$: predetermined measure of financial integration
- δ^y: differential response of country with one std. dev. greater-than-average degree of financial integration

Role of Financial Integration — Results

	Capacity Utilization	CB Consumer Confidence	Core CPI	Core PPI	Durable Goods Orders	GDP A
Stock Index (bp)						
News	5.82**	13.64***	-9.28***	-5.13***	6.22***	18.45***
	(2.38)	(2.31)	(2.07)	(1.52)	(1.68)	(3.62)
Fin. Integration × News	1.43	1.35	2.85***	2.19***	0.08	-0.42
	(1.11)	(1.06)	(0.92)	(0.76)	(0.86)	(1.99)
R^2	0.07	0.15	0.11	0.18	0.11	0.27
Observations	4037	3998	3767	3824	3676	1253
	Initial Jobless Claims $\cdot(-1)$	ISM Mfg Index	New Home Sales	Nonfarm Payrolls	Retail Sales	UM Consumer Sentiment P
Stock Index (bp)						
News	5.39***	12.35***	4.51***	21.77***	11.44***	5.92***
	(0.85)	(2.47)	(1.51)	(3.45)	(2.42)	(1.73)
Fin. Integration × News	1.15**	4.41**	0.97	14.63***	3.72***	0.49
	(0.51)	(1.66)	(0.90)	(2.48)	(1.09)	(0.75)
R^2	0.10	0.14	0.04	0.20	0.18	0.05
Observations	15941	3673	3888	3725	3846	3788

▸ Table — Trade Int. & Industry Sim.

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⇒ Consistent with amplification of cash flow and risk premium channel

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4. Inspecting the Mechanism

Role of US Dollar Exchange Rate

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Question

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    $\Rightarrow$ lending capacity (global liquidity) $\uparrow$

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  - US dollar $\downarrow \Rightarrow$ foreign firms' balance sheet $\uparrow$
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    $\Rightarrow$ lending capacity (global liquidity) $\uparrow$

$\Rightarrow$ Prediction: foreign stock price $\uparrow$ + foreign currency rel. to US dollar $\uparrow$

Stock Return & US Dollar Exchange Rate

	Capacity Utilization	CB Consumer Confidence	Core CPI	Core PPI	Durable Goods Orders	GDP A
Stock Index (bp)						
News	4.98**	12.61***	-9.06***	-4.58***	5.63***	17.81***
	(2.30)	(2.07)	(1.86)	(1.37)	(1.61)	(3.43)
R^2	0.06	0.13	0.11	0.15	0.10	0.26
Observations	5907	5903	5576	5686	5468	1864
Exchange Rate (bp)						
News	0.00	-0.28	-6.02***	-3.28***	-1.43	-7.91***
	(1.06)	(1.23)	(1.38)	(0.86)	(0.82)	(2.55)
R^2	0.02	0.02	0.10	0.08	0.07	0.11
Observations	3849	3894	3721	3804	3695	1256
	Initial Jobless Claims $\cdot(-1)$	ISM Mfg Index	New Home Sales	Nonfarm Payrolls	Retail Sales	UM Consumer Sentiment P
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News	-0.56	-3.95**	-1.37*	-11.82***	-2.43*	-0.88
	(0.51)	(1.41)	(0.74)	(2.78)	(1.33)	(0.84)
R^2	0.05	0.06	0.04	0.17	0.14	0.01
Observations	16101	3875	3820	3777	3787	3588

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- US macro news important driver of GFC
- Striking difference between US & foreign macro news
- Risk-taking capacity of intl. investors as key channel

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Bernanke (2017): Existence of GFC $\nRightarrow$ Financial spillovers

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Bernanke (2017): Existence of GFC $\nRightarrow$ Financial spillovers

- This paper: US economy $\Rightarrow$ GFC $\Rightarrow$ other countries

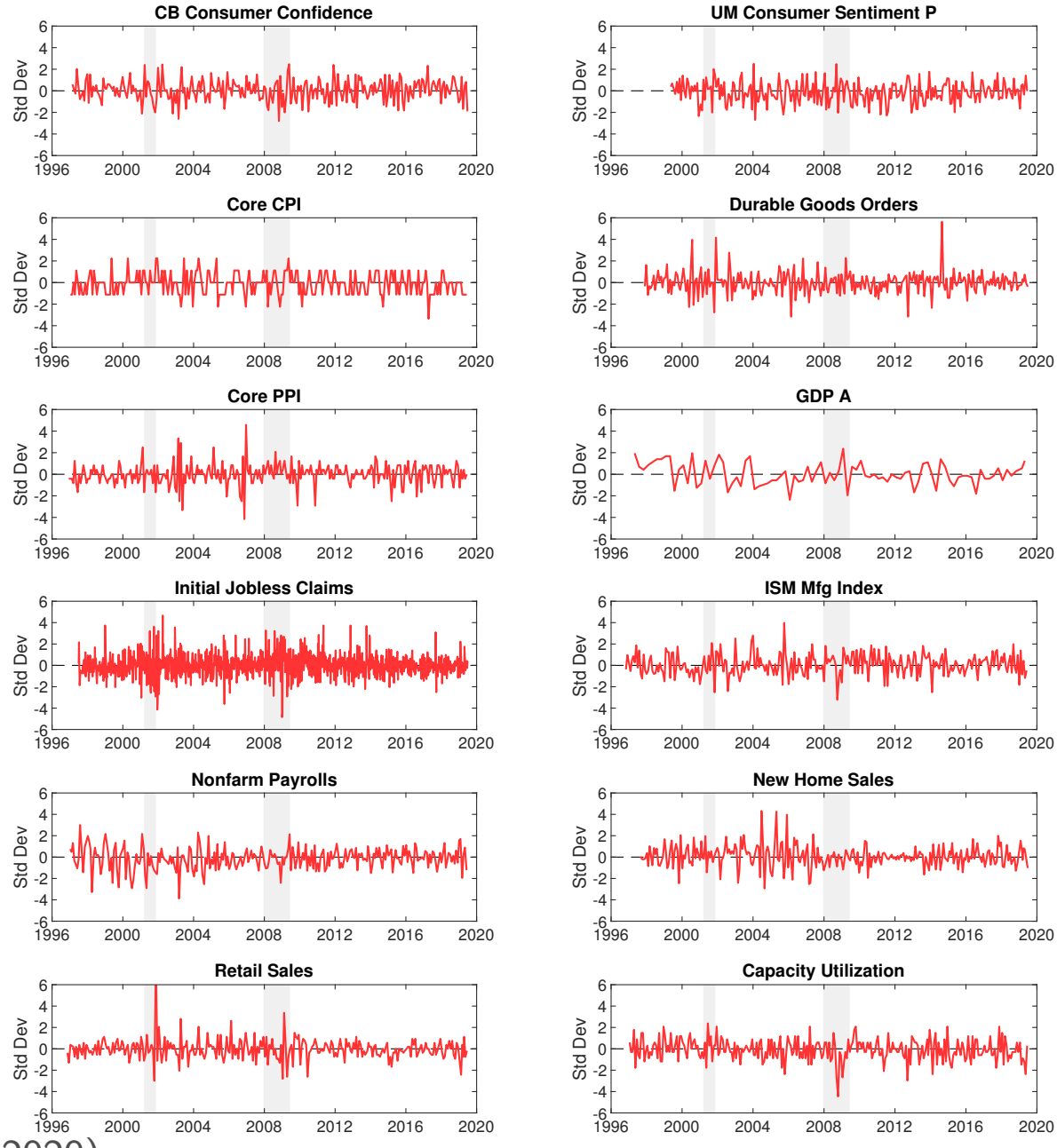
Overview of All US Macroeconomic News

Return

Name	Frequency	Category	Observations	Name	Frequency	Category	Observations
ADP Employment	Monthly	Real Activity	154	Import Price Index	Monthly	Price	247
Average Hourly Earnings	Monthly	Price	252	Initial Jobless Claims	Weekly	Real Activity	1140
Chicago Fed Nat Activity Index	Monthly	Real Activity	101	Continuing Claims	Weekly	Real Activity	839
Capital Goods Orders	Monthly	Real Activity	106	Industrial Production	Monthly	Real Activity	271
Capital Goods Shipments	Monthly	Real Activity	89	CB Leading Economic Index	Monthly	Real Activity	266
ISM Chicago Index	Monthly	Real Activity	269	Business Inventories	Monthly	Real Activity	263
Consumer Credit	Monthly	Real Activity	271	Wholesale Inventories	Monthly	Real Activity	264
Construction Spending	Monthly	Real Activity	246	ISM Non-Mfg Index	Monthly	Real Activity	245
CB Consumer Confidence	Monthly	Real Activity	268	ISM Mfg Index	Monthly	Real Activity	271
UM Consumer Sentiment F	Monthly	Real Activity	242	ISM Prices Paid	Monthly	Price	228
UM Consumer Sentiment P	Monthly	Real Activity	241	Private Payrolls	Monthly	Real Activity	110
Unit Labor Costs F	Quarterly	Price	79	Nonfarm Payrolls	Monthly	Real Activity	268
Unit Labor Costs P	Quarterly	Price	79	Mfg Payrolls	Monthly	Real Activity	246
Capacity Utilization	Monthly	Real Activity	268	Housing Starts	Monthly	Real Activity	254
CPI	Monthly	Price	271	Building Permits	Monthly	Real Activity	202
Core CPI	Monthly	Price	269	Philly Fed Business Outlook	Monthly	Real Activity	267
Dallas Fed Mfg Index	Monthly	Real Activity	125	Core PCE Price Index	Monthly	Price	168
Durable Goods Orders	Monthly	Real Activity	260	Personal Consumption Expenditure	Monthly	Real Activity	267
Durables Ex Transportation	Monthly	Real Activity	211	Personal Income	Monthly	Real Activity	271
Employment Cost Index	Quarterly	Price	89	Nonfarm Productivity F	Quarterly	Real Activity	84
NY Fed Mfg Index	Monthly	Real Activity	200	Nonfarm Productivity P	Quarterly	Real Activity	85
Existing Home Sales	Monthly	Real Activity	172	Richmond Fed Mfg Index	Monthly	Real Activity	164
Government Budget Balance	Monthly	Real Activity	270	Retail Sales	Monthly	Real Activity	270
PPI	Monthly	Price	257	Retail Sales Ex Auto	Monthly	Real Activity	264
Core PPI	Monthly	Price	269	Total Vehicle Sales	Monthly	Real Activity	82
Net Long-term TIC Flows	Monthly	Real Activity	117	NFIB Small Business Optimism	Monthly	Real Activity	112
GDP A	Quarterly	Real Activity	89	Factory Orders	Monthly	Real Activity	271
GDP S	Quarterly	Real Activity	88	Current Account Balance	Quarterly	Real Activity	85
GDP T	Quarterly	Real Activity	89	NFIB Small Business Optimism	Monthly	Real Activity	112
GDP Price Index A	Quarterly	Price	85	New Home Sales	Monthly	Real Activity	261
GDP Price Index S	Quarterly	Price	85	Pending Home Sales	Monthly	Real Activity	170
GDP Price Index T	Quarterly	Price	84	Trade Balance	Monthly	Real Activity	271
FHFA House Price Index	Monthly	Price	133	Unemployment Rate	Monthly	Real Activity	267

News Surprises — Time Series

Return



Pooled Effect — Relative to US Stocks

Return

Left-hand variable: $\Delta q_{US,t} - \Delta q_{i,t}$

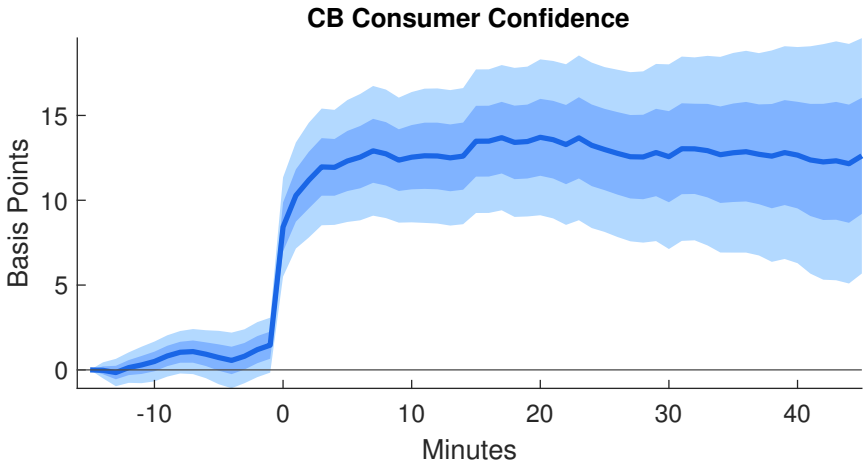
	Capacity Utilization	CB Consumer Confidence	Core CPI	Core PPI	Durable Goods Orders	GDP A
Stock Index Diff. (bp)						
News	-0.47	3.44**	-4.78***	-0.89	-0.97	-1.05
	(1.13)	(1.37)	(1.23)	(0.84)	(0.87)	(2.02)
R^2	0.01	0.04	0.05	0.02	0.03	0.05
Observations	5389	5815	5434	5526	5468	1824

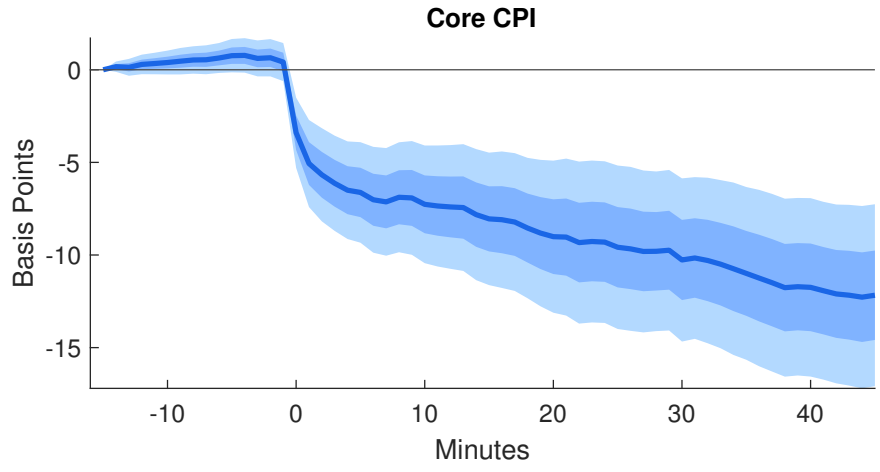
	Initial Jobless Claims $\cdot(-1)$	ISM Mfg Index	New Home Sales	Nonfarm Payrolls	Retail Sales	UM Consumer Sentiment P
Stock Index Diff. (bp)						
News	0.64	3.93**	-0.82	3.00	-1.60	-1.73
	(0.45)	(1.89)	(0.95)	(2.28)	(1.05)	(1.17)
R^2	0.01	0.06	0.01	0.03	0.03	0.01
Observations	23529	5277	5728	5446	5479	4924

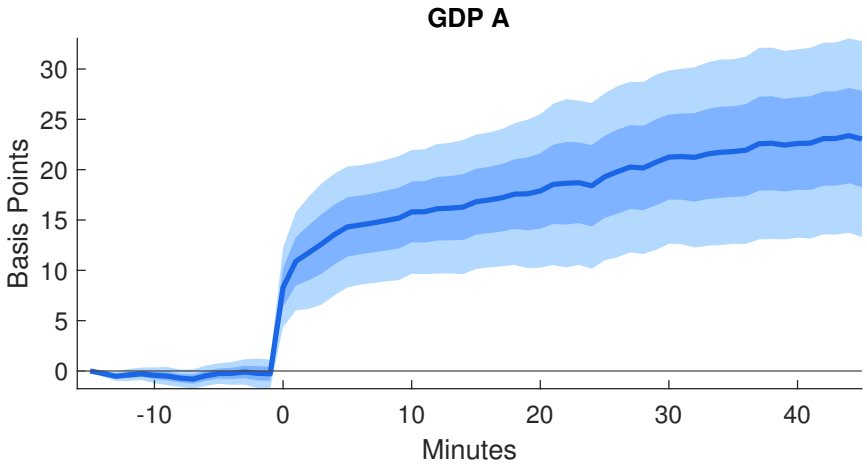
***, **, and * refer to significance at the 1, 5, and 10 percent level.

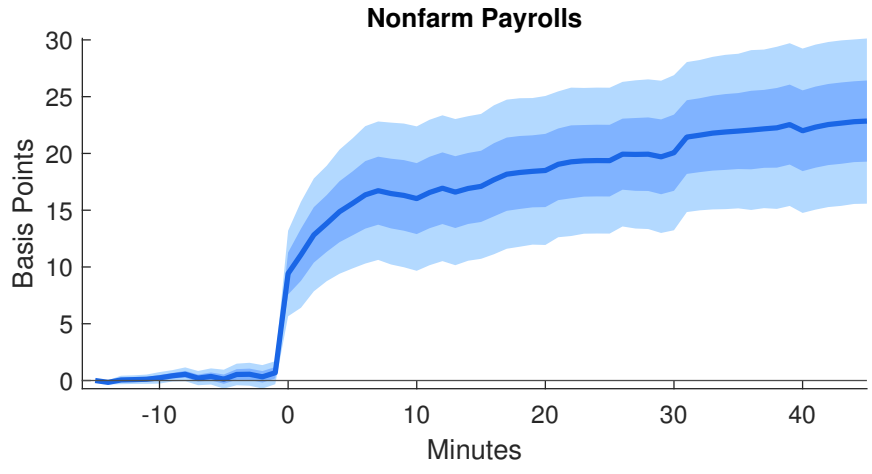
Impulse Response of Intl. Stock Markets

Return



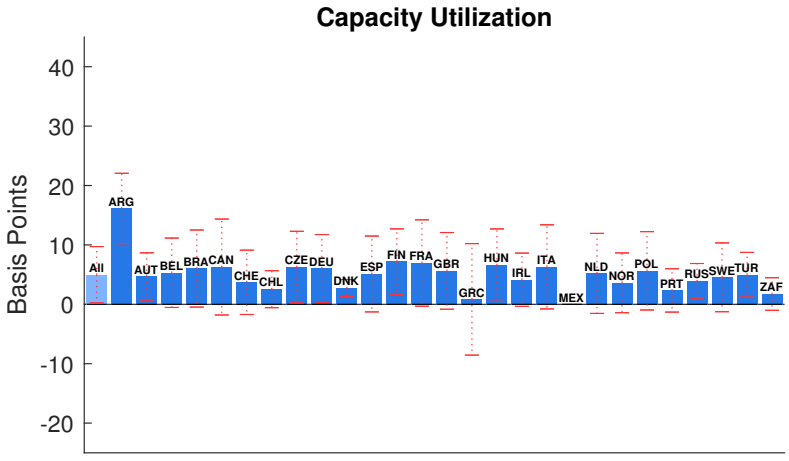


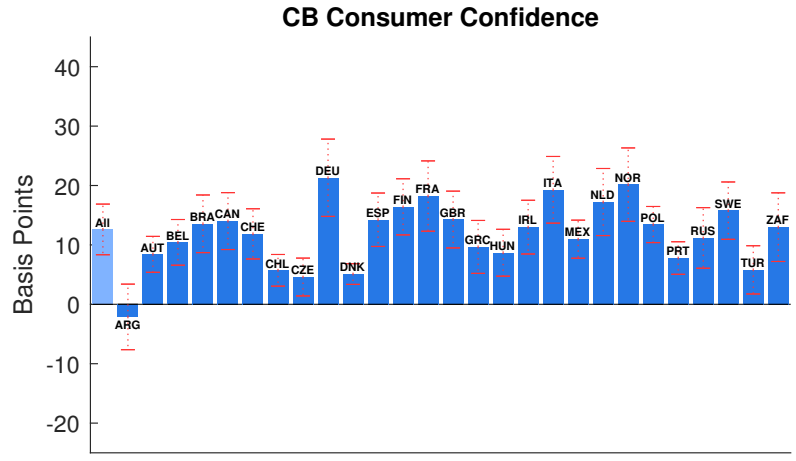


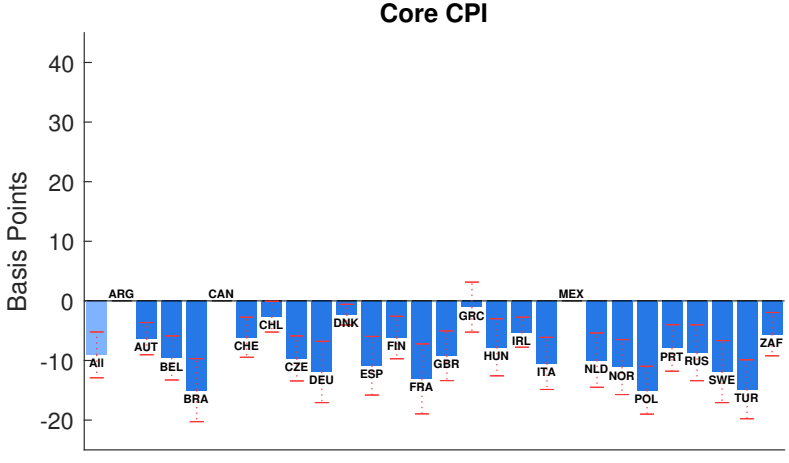


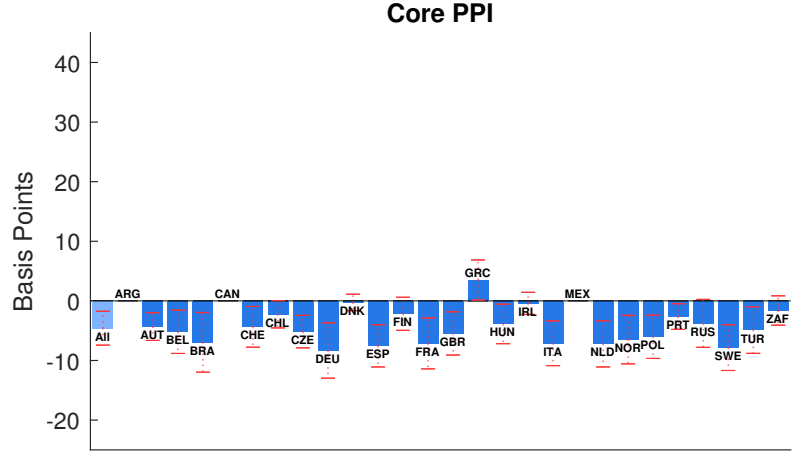
Cross-country Heterogeneity

Return





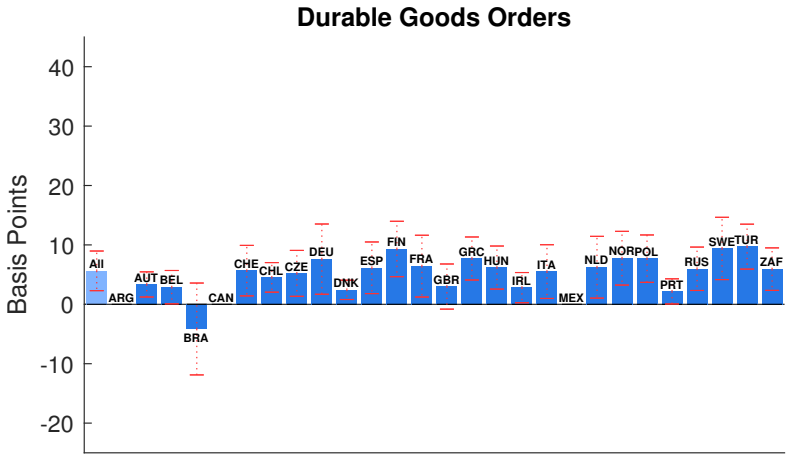


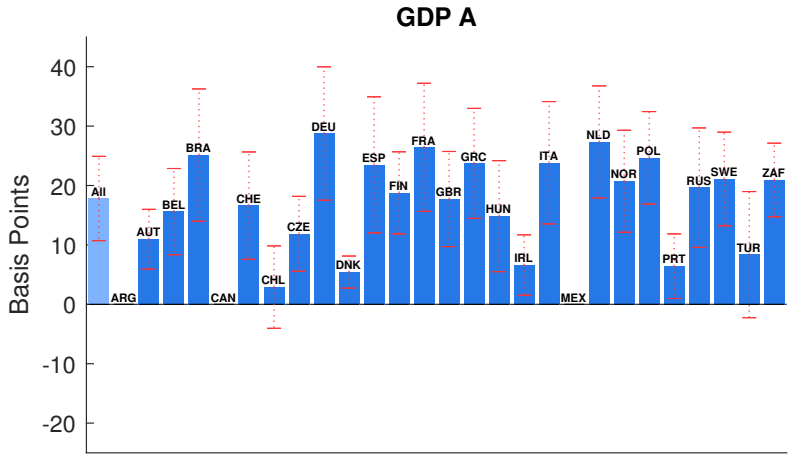


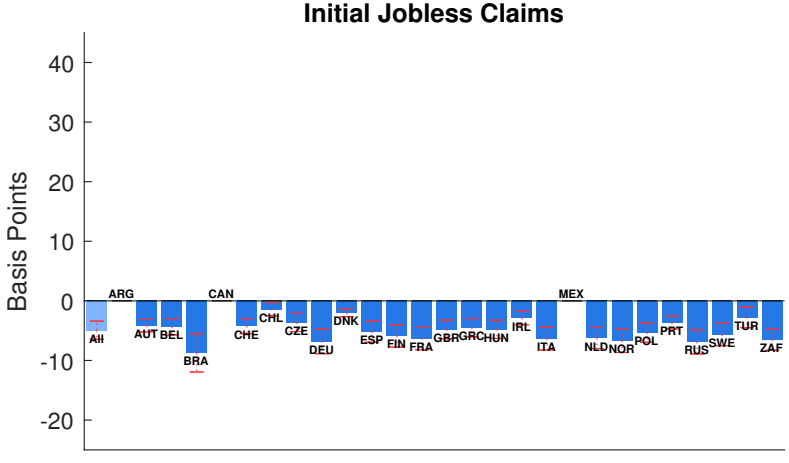
▸ Figure — More Releases

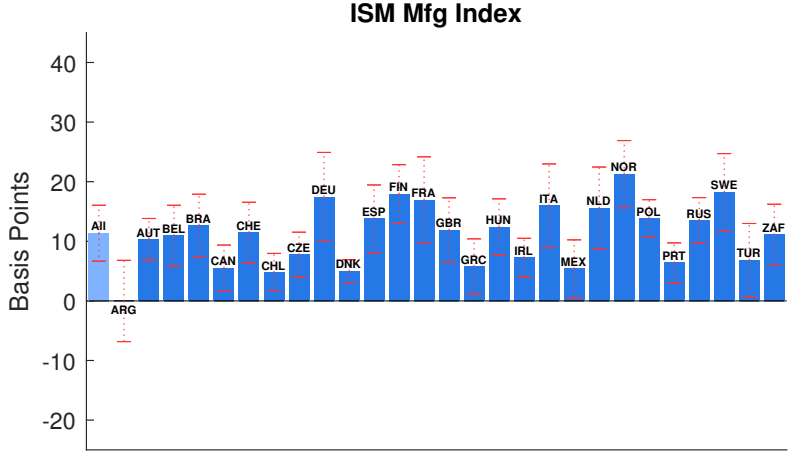
Cross-country Heterogeneity

Return









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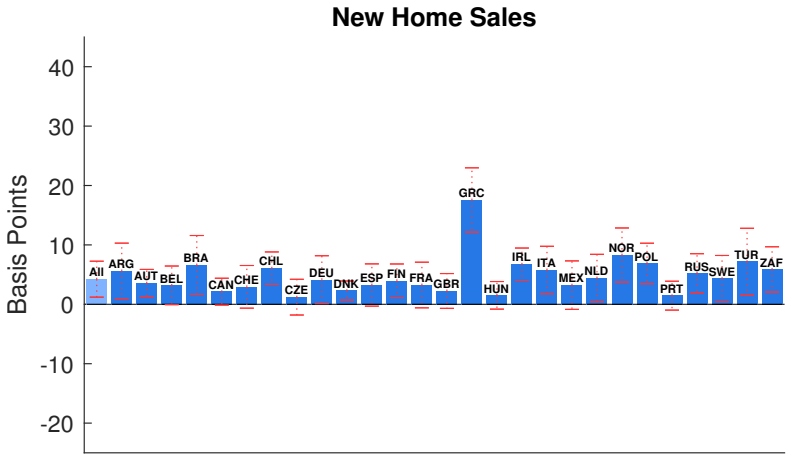
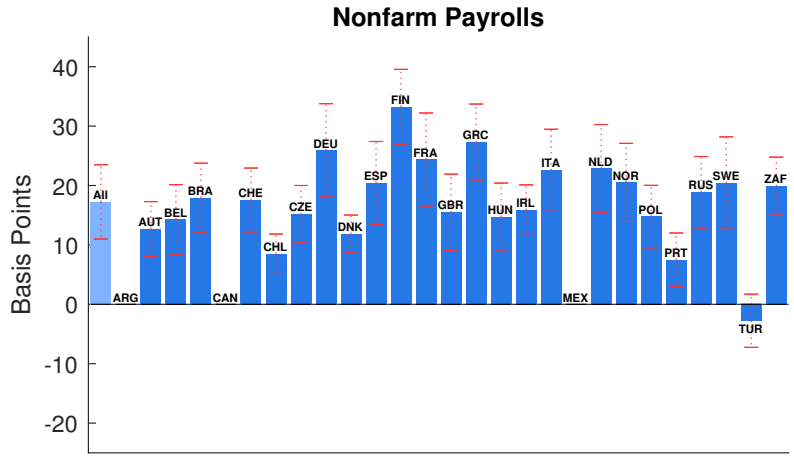
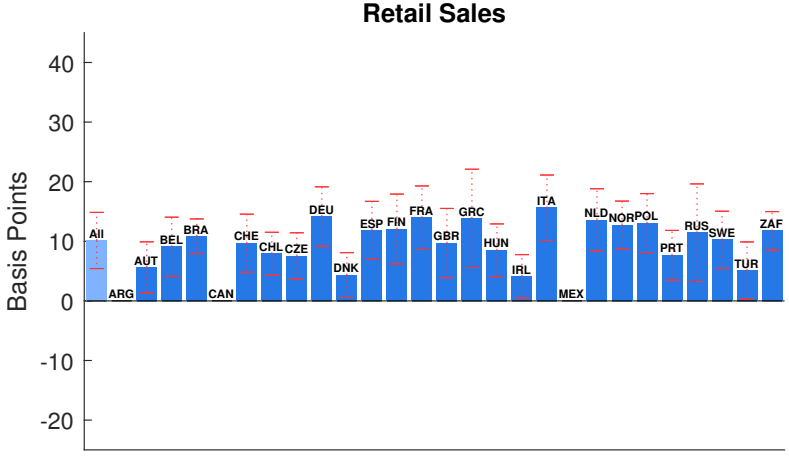
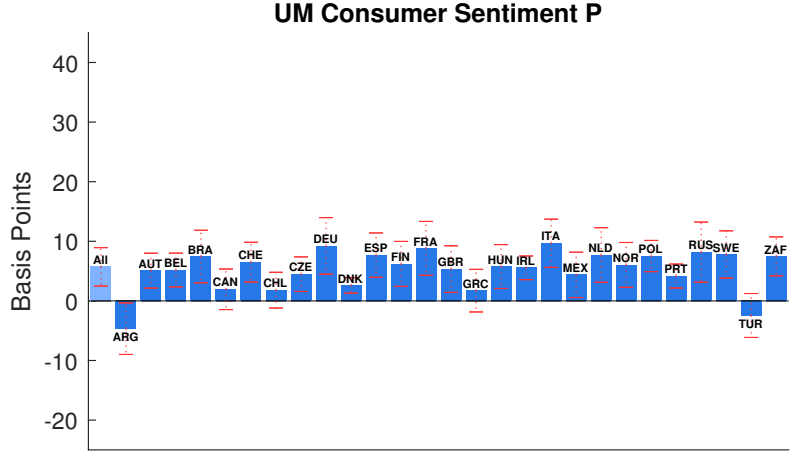
Return









Construction of Commodity Factor

Return

First Factor of Principal Component Analysis

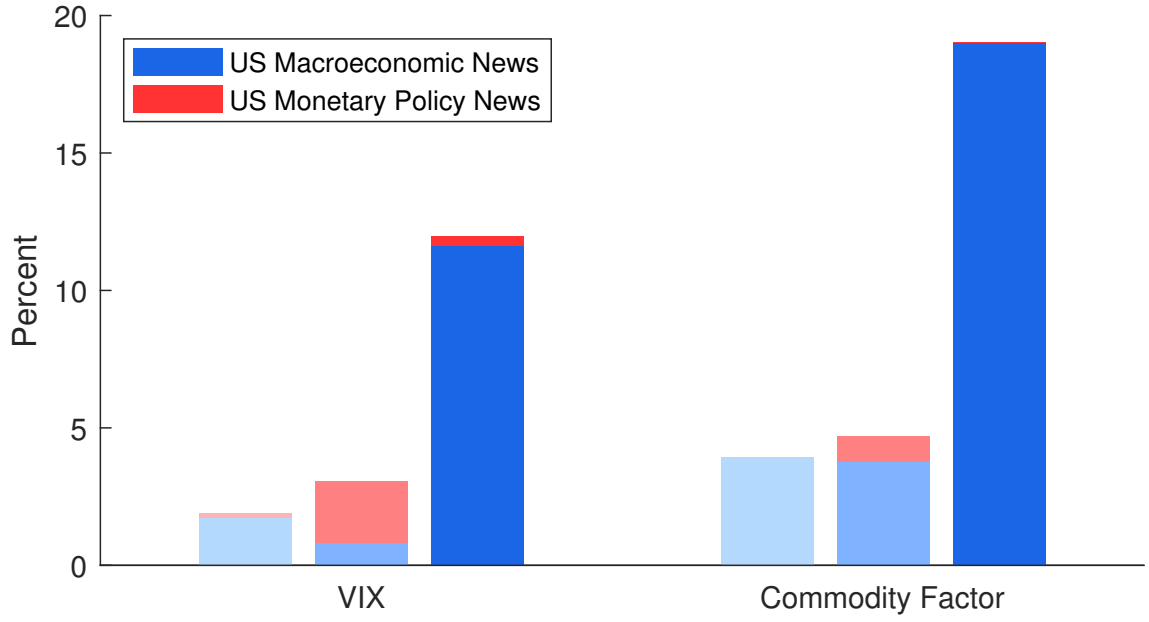
	Loadings		Explained Variance		
	Factor 1	Factor 2	Factor 1	Factor 2	Total
Energy	0.65	-0.27	0.71	0.06	0.77
Industrial Metals	0.65	-0.28	0.70	0.07	0.77
Agriculture	0.39	0.92	0.25	0.75	1.00
Total			0.55	0.29	0.85

Composition of Underlying Commodity Indexes

Energy		Industrial Metals		Agriculture	
WTI Crude Oil	0.41	LME Aluminium	0.35	Chicago Wheat	0.18
Brent Crude Oil	0.30	LME Cooper	0.41	Kansas Wheat	0.08
RBOB Gasoline	0.07	LME Lead	0.06	Corn	0.31
Heating Oil	0.07	LME Nickel	0.08	Soybeans	0.20
Gasoil	0.10	LME Zinc	0.11	Cotton	0.08
Natural Gas	0.05			Sugar	0.10
				Coffee	0.04
				Cocoa	0.02

R-squared: VIX & Commodity Prices

Return



Stock Return & Bond Yield — Time-varying

Return

	Capacity Utilization	CB Consumer Confidence	Core CPI	Core PPI	Durable Goods Orders	GDP A
Stock Index (bp)						
News	1.08	7.25***	-11.64***	-6.32***	2.44*	12.73***
	(1.05)	(1.99)	(2.15)	(1.75)	(1.29)	(3.63)
News - Recession	7.64*	9.53***	6.39**	3.92*	8.35***	13.45**
	(4.04)	(3.04)	(2.88)	(2.10)	(2.87)	(4.92)
R^2	0.08	0.17	0.14	0.18	0.13	0.32
Observations	5809	5783	5576	5686	5468	1864
10-Year Bond Yield (bp)						
News	0.22***	0.42***	0.81***	0.52***	0.21**	0.80***
	(0.07)	(0.11)	(0.13)	(0.08)	(0.09)	(0.17)
News - Recession	-0.02	0.21*	-0.38***	-0.21*	0.25	0.17
	(0.08)	(0.10)	(0.13)	(0.10)	(0.20)	(0.24)
R^2	0.03	0.10	0.06	0.12	0.04	0.21
Observations	4424	4214	4345	4452	4260	1386

	Initial Jobless Claims $\cdot(-1)$	ISM Mfg Index	New Home Sales	Nonfarm Payrolls	Retail Sales	UM Consumer Sentiment P
Stock Index (bp)						
News	4.42***	7.88***	4.39**	13.43***	9.24***	6.97***
	(0.71)	(2.61)	(1.68)	(3.67)	(2.32)	(1.56)
News - Recession	0.68	8.75**	-0.20	8.89*	1.14	-2.89
	(1.08)	(3.50)	(2.35)	(4.58)	(3.69)	(2.90)
R^2	0.11	0.17	0.03	0.15	0.17	0.05
Observations	23741	5274	5630	5556	5672	5465
10-Year Bond Yield (bp)						
News	0.28***	0.81***	0.32***	1.83***	0.65***	0.24***
	(0.05)	(0.10)	(0.07)	(0.26)	(0.12)	(0.07)
News - Recession	0.01	0.16	-0.13	-0.41	-0.27**	0.08
	(0.07)	(0.13)	(0.11)	(0.27)	(0.13)	(0.11)
R^2	0.03	0.18	0.04	0.24	0.16	0.03
Observations	18753	3956	4128	4378	4431	3985

Effect of US News on 10-Year Treasury Yield

Return

	Capacity Utilization	CB Consumer Confidence	Core CPI	Core PPI	Durable Goods Orders	GDP A
10-Year Treasury Yields (bp)						
News	0.45***	1.14***	1.40***	1.03***	0.43	1.57***
	(0.11)	(0.17)	(0.23)	(0.16)	(0.26)	(0.34)
R^2	0.13	0.37	0.25	0.37	0.24	0.30
Observations	264	191	258	268	183	88
	Initial Jobless Claims $\cdot(-1)$	ISM Mfg Index	New Home Sales	Nonfarm Payrolls	Retail Sales	UM Consumer Sentiment P
10-Year Treasury Yields (bp)						
News	0.59***	2.09***	0.73***	4.12***	1.31***	0.60***
	(0.07)	(0.18)	(0.13)	(0.42)	(0.34)	(0.12)
R^2	0.22	0.46	0.29	0.46	0.34	0.13
Observations	1001	267	186	268	266	237

Daily, Monthly, and Quarterly R-Squared for Stock Indexes

Return

Role of Financial Linkages — Trade Int. and Industry Dissim.

Return

	Capacity Utilization	CB Consumer Confidence	Core CPI	Core PPI	Durable Goods Orders	GDP A
Stock Index (bp)						
News	6.52**	15.49***	-9.22***	-5.02***	6.42***	19.88***
	(2.52)	(2.35)	(2.19)	(1.52)	(1.81)	(3.65)
Fin. Integration						
× News	1.45	0.35	3.64*	3.24**	0.79	-2.36
	(1.32)	(1.55)	(1.91)	(1.40)	(1.52)	(2.86)
Trade Integration						
× News	-0.61	-2.69***	0.66	0.16	0.01	-3.36**
	(0.37)	(0.93)	(0.46)	(0.50)	(0.36)	(1.26)
Industry Dissimilarity						
× News	0.80	-1.41	1.87	2.17*	1.29	-1.90
	(1.06)	(1.36)	(1.65)	(1.17)	(1.37)	(2.62)
R^2	0.09	0.20	0.13	0.21	0.14	0.35
Observations	3449	3325	3272	3314	3262	1095

	Initial Jobless Claims $\cdot(-1)$	ISM Mfg Index	New Home Sales	Nonfarm Payrolls	Retail Sales	UM Consumer Sentiment P
Stock Index (bp)						
News	5.36***	13.64***	4.82***	23.72***	11.82***	6.78***
	(0.89)	(2.56)	(1.52)	(3.61)	(2.49)	(1.73)
Fin. Integration						
× News	2.10***	4.77**	2.60*	16.52***	5.14***	-0.14
	(0.68)	(2.16)	(1.40)	(3.13)	(1.33)	(1.24)
Trade Integration						
× News	-0.98*	-2.53*	-2.28**	-3.92	-2.06*	-1.03*
	(0.52)	(1.30)	(0.95)	(2.33)	(1.07)	(0.57)
Industry Dissimilarity						
× News	0.97	2.19	2.37**	5.54**	1.67	-0.48
	(0.68)	(1.61)	(0.93)	(2.16)	(1.00)	(1.15)
R^2	0.13	0.19	0.07	0.24	0.22	0.06
Observations	14045	3044	3268	3240	3329	3270