

Monetary Policy Transmission & Inflation

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XX Inflation Targeting Conference
Rio de Janeiro



The views expressed are those of the authors and do not necessarily reflect those of the OFCE-SciencesPo, the Bank of England, the Monetary Policy Committee, the Financial Policy Committee or the Prudential Regulation Authority.

1. The transmission of Monetary Policy

Miranda-Agrippino, Ricco (2016, 2018, ...)

- ▷ High Frequency Market surprise as proxy for exogenous 'shifters'

(Kuttner 2001, Gurkaynak et al. 2006)

- ▷ **MP Information Effect**/Signalling Channel

(Romer and Romer 2000, Melosi 2014, Tang 2015, Nakamura and Steinsson 2017)

Following a Contractionary Monetary Policy Shock

economic activity and prices contract

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2. Inflation Dynamics

Hasenzagl, Pellegrino, Reichlin, and Ricco (2017, 2018)

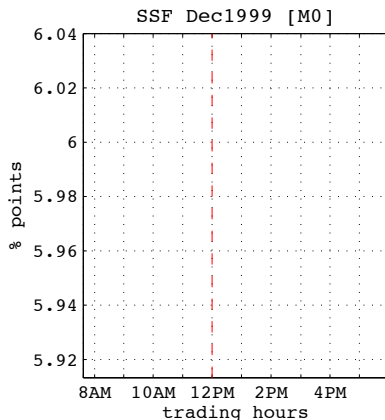
- ▷ Trends and Cycles in Inflation and GDP
- ▷ Energy prices shocks can shift expectations
- ▷ Some Forecasts and **(very preliminary)** results on Brazil

Phillips Curve alive and well
but not always the dominant component!

The Transmission of Monetary Policy

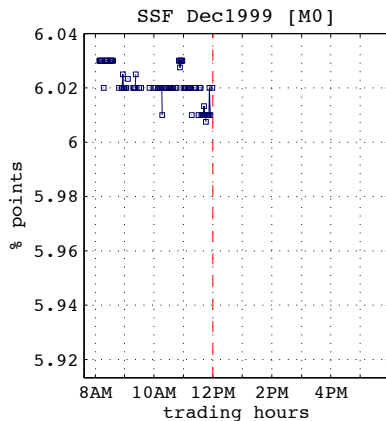
A Typical Announcement Day

Miranda-Agrippino and Ricco (2018)



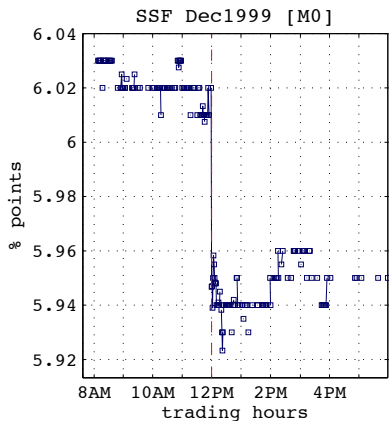
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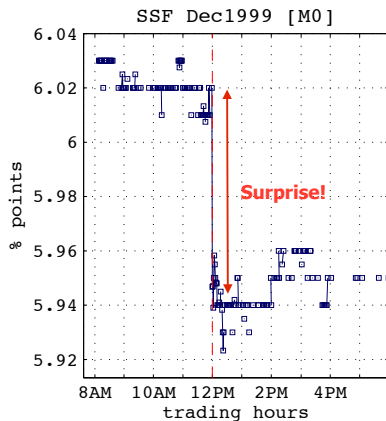
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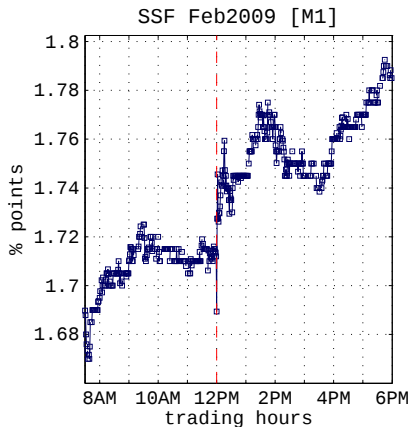
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Miranda-Agrippino and Ricco (2018)



MP Shocks Only? (UK Q1-2009)

Miranda-Agrippino and Ricco (2018)



event type: Rate Decision
date: 05/02/2009 12:00
new rate: 1 (old: 1.5)
forecast: 1

conflicts:
none



BANK OF ENGLAND

News release

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5 February 2009

Bank of England Reduces Bank Rate by 0.5 Percentage Points to 1.0%

The Bank of England's Monetary Policy Committee today voted to reduce the official Bank Rate paid on commercial bank reserves by 0.5 percentage points to 1.0%.

The global economy is in the throes of a **severe and synchronised downturn**. **Output in the advanced economies fell sharply** in the fourth quarter of 2008, and growth in the emerging **market economies appears to have slowed markedly**. **Business and household sentiment in many countries has deteriorated**. The **weakness of the global banking and financial system** means that the supply of credit remains constrained.

In the **United Kingdom**, output dropped sharply in the fourth quarter of 2008 and **business surveys point to a similar rate of decline in the early part of this year**. **Credit conditions** faced by companies and households have **tightened further**. The underlying picture for consumer spending appears weak. Businesses have

The Informational Content of Monetary Surprises

- ▷ **Interest rate hike** to informationally constrained agents
 - 1. **MP shock**
 - ⇒ lower output and inflation
 - 2. **Endogenous reaction** to demand shocks
 - ⇒ higher output and inflation

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- ▷ Sluggish adjustment to new information

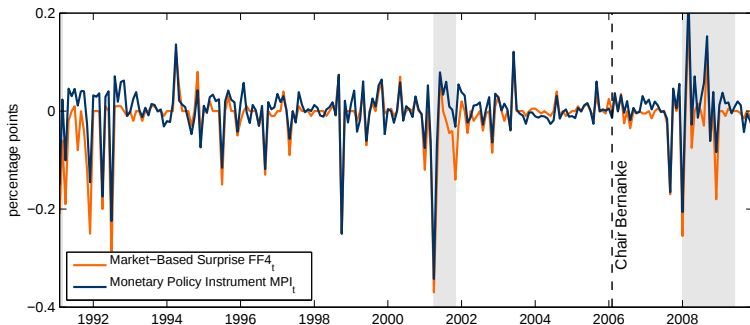
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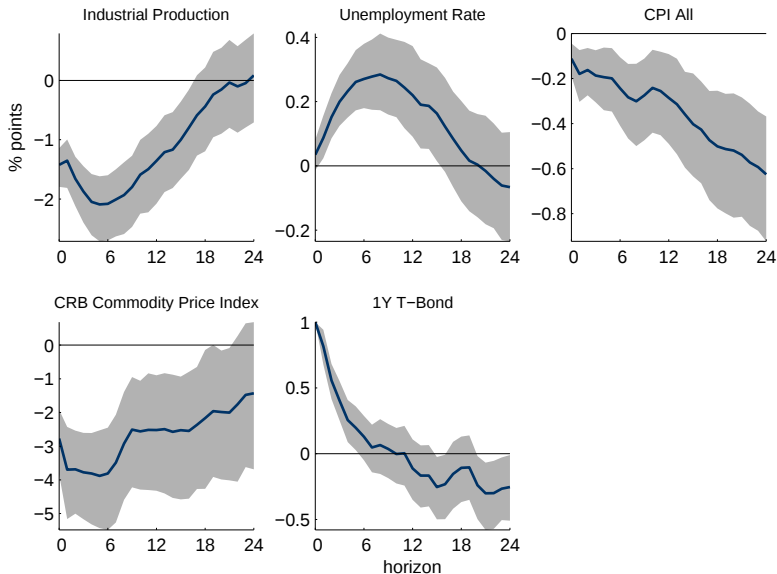
- ▷ Central Bank **policy actions transmit information** to the agents

Monetary Policy Instrument



$$\begin{aligned}
 mps_t = & \alpha_0 + \sum_{i=1}^p \alpha_i mps_{t-i} + \varrho F_t^{cb} u_{q+0} \\
 & + \sum_{j=-1}^3 \rho_j F_t^{cb} x_{q+j} + \sum_{j=-1}^2 \theta_j \left[F_t^{cb} x_{q+j} - F_{t-1}^{cb} x_{q+j} \right] + MPI_t
 \end{aligned}$$

The Effects of MP Shocks – 1979 to 2014



Information vs MP Shocks

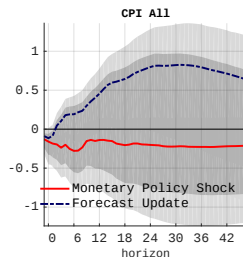
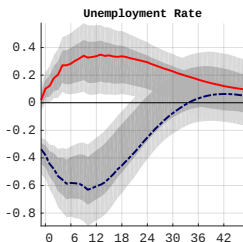
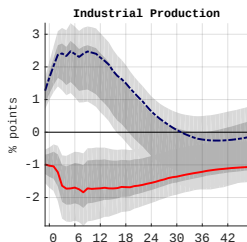
- ▷ **MP Shock Instrument:** residuals of projection

Information vs MP Shocks

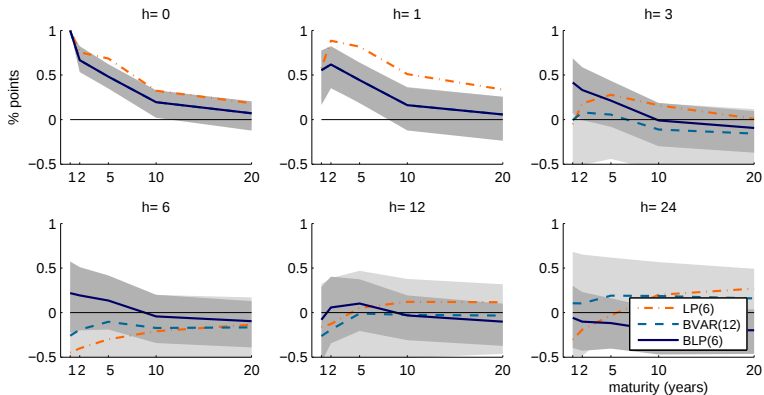
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- ▷ **CB Informational Signal Instrument:** fitted mps_t

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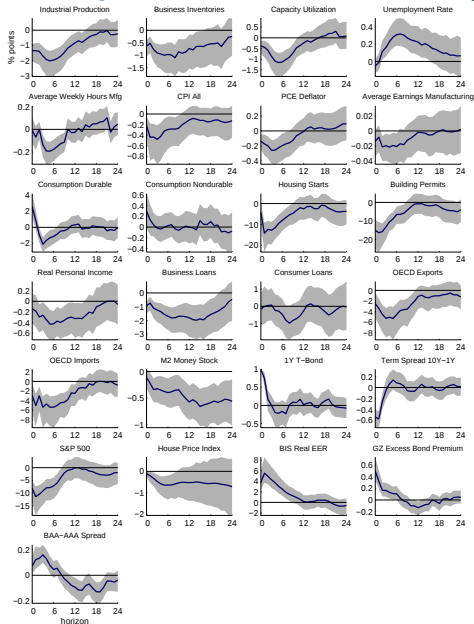
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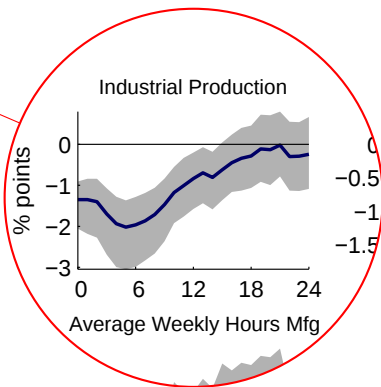
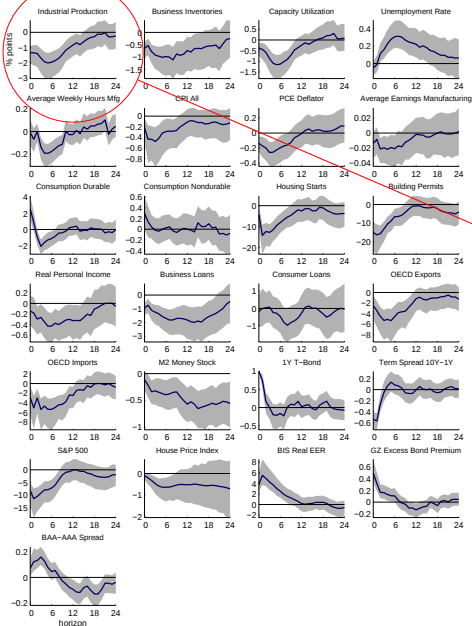
Interest Rate Channel



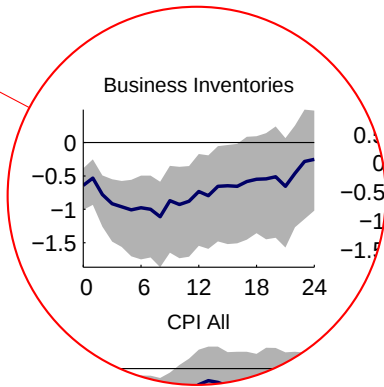
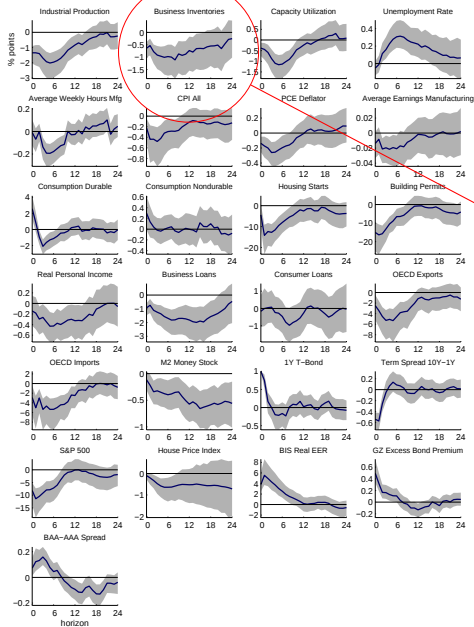
The Response of the Economy



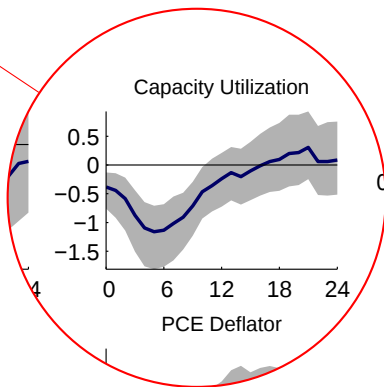
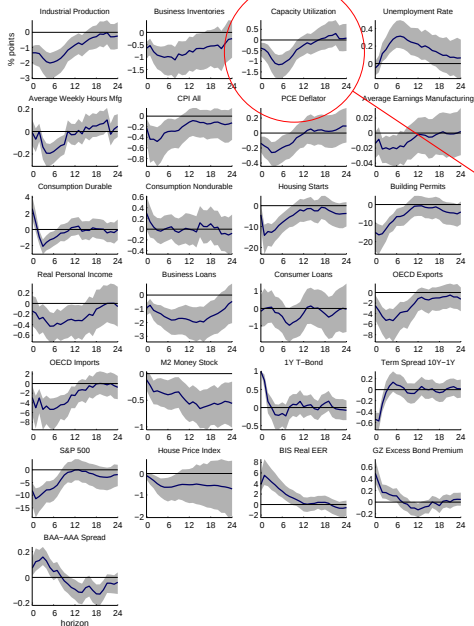
The Response of the Economy: **Real Activity**



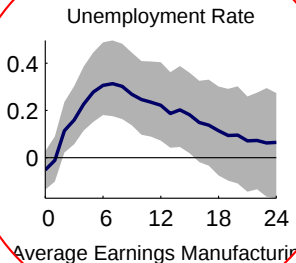
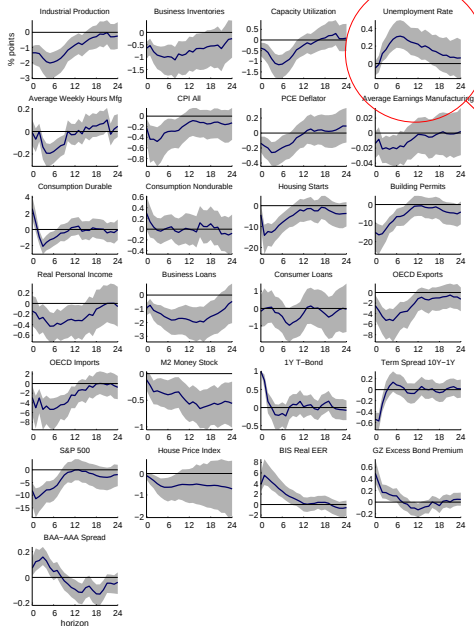
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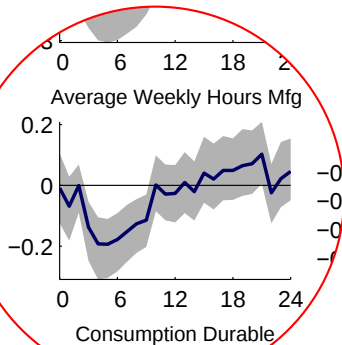
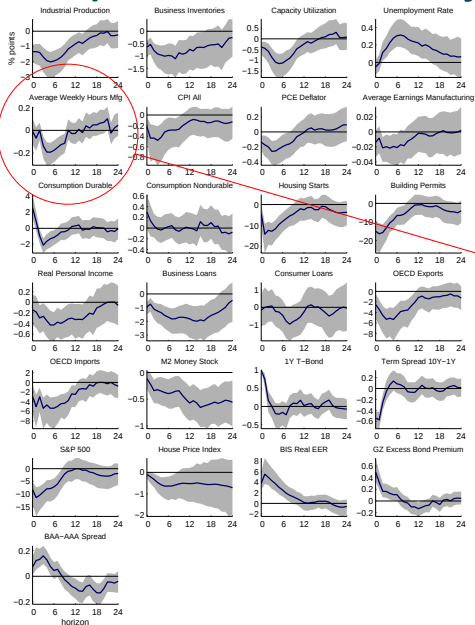
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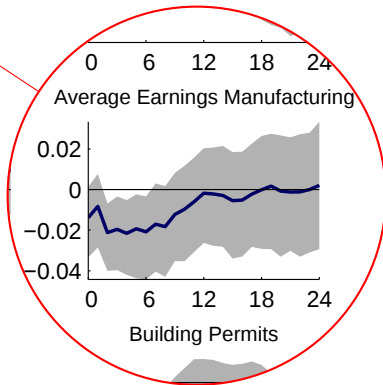
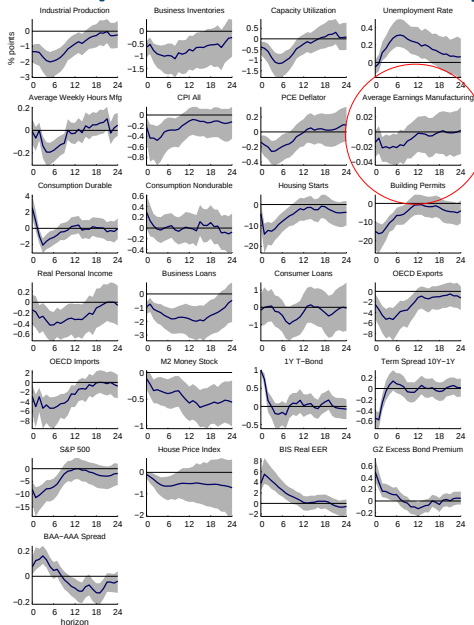
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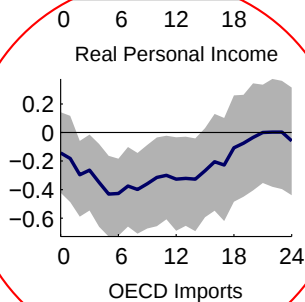
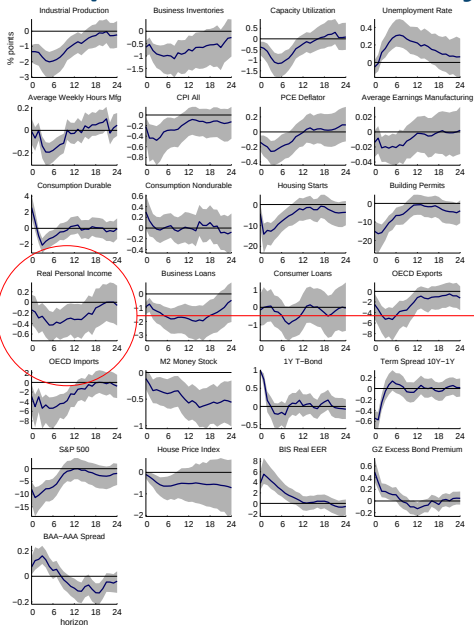
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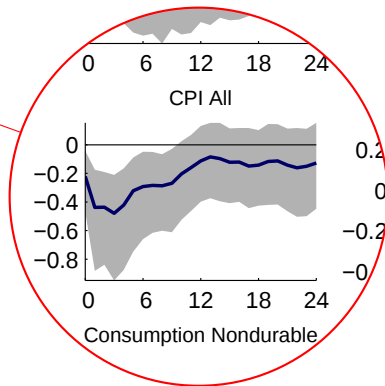
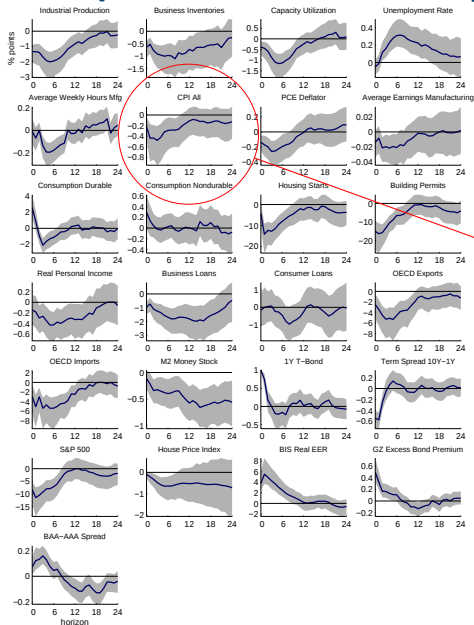
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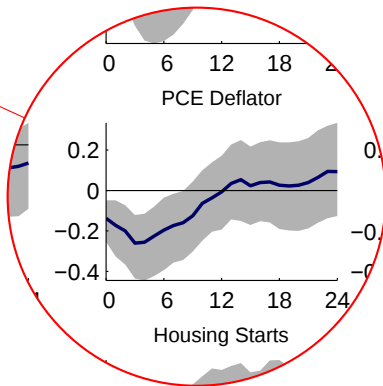
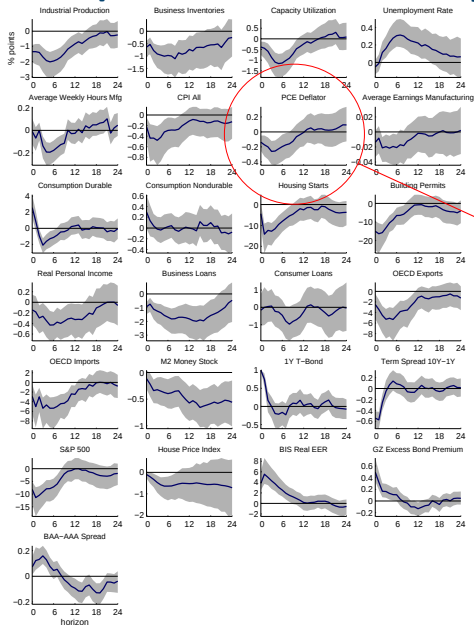
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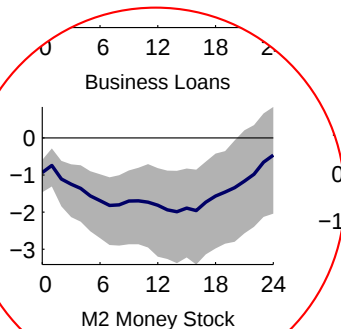
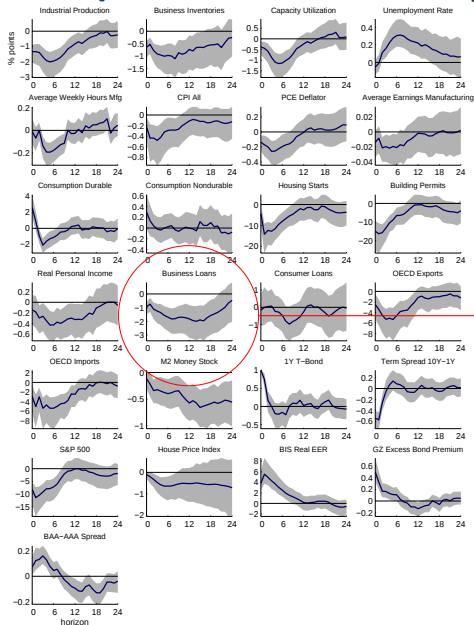
The Response of the Economy: Prices



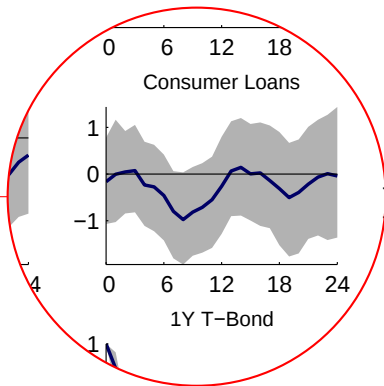
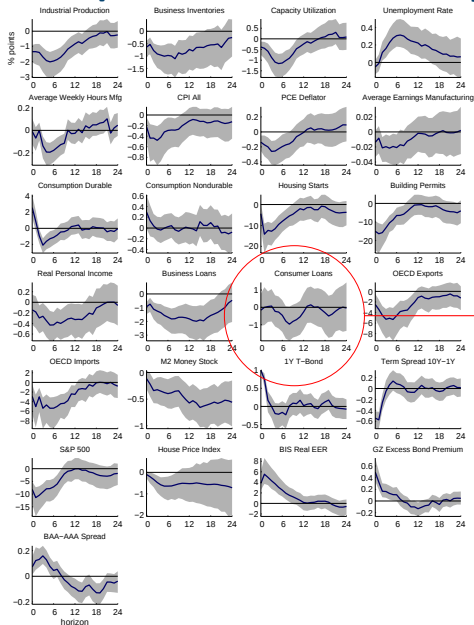
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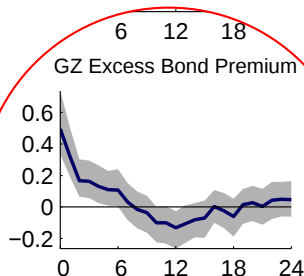
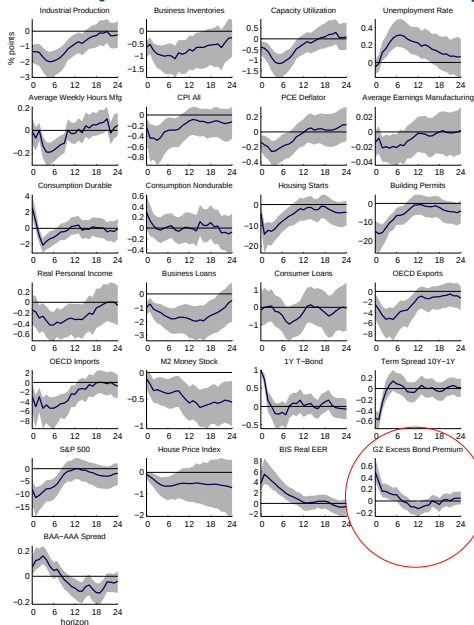
The Response of the Economy: Credit



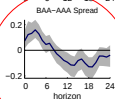
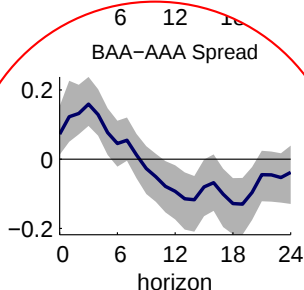
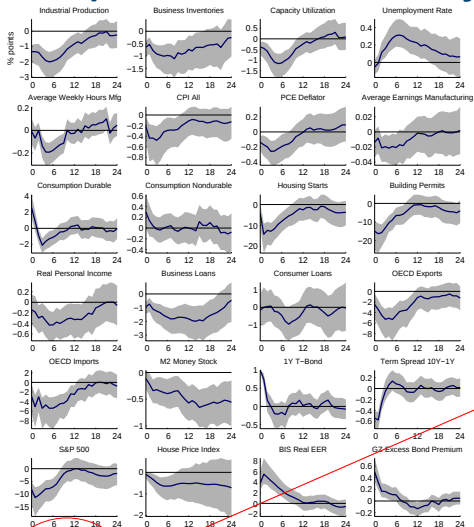
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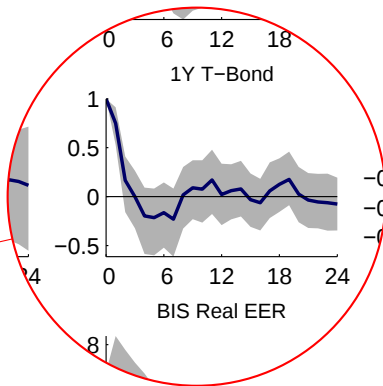
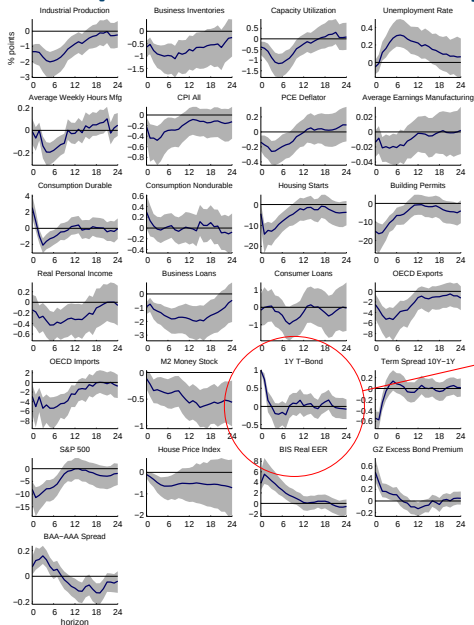
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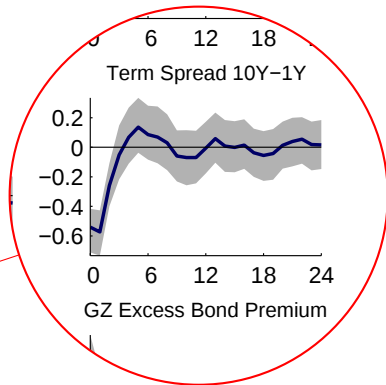
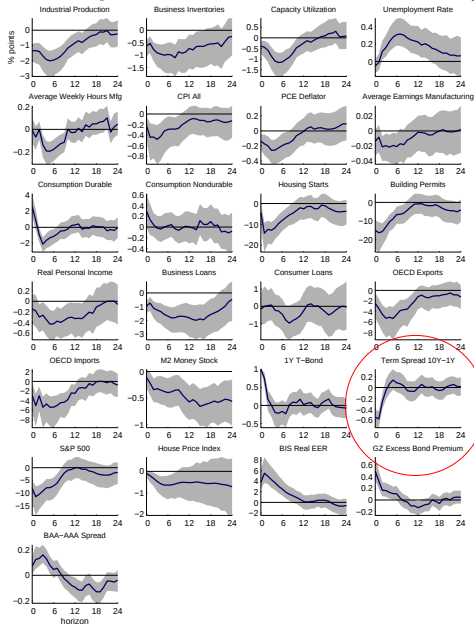
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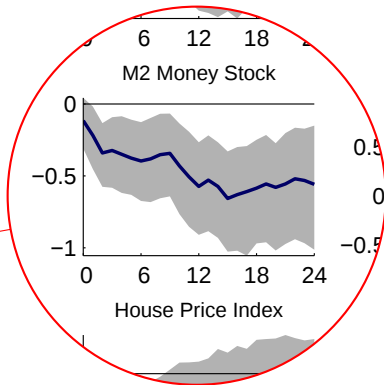
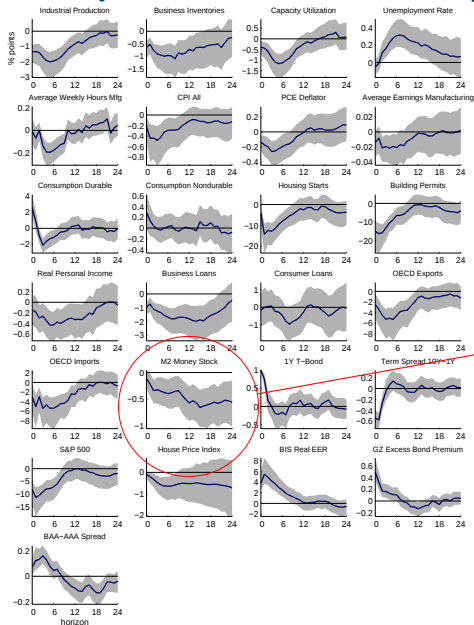
The Response of the Economy: Money



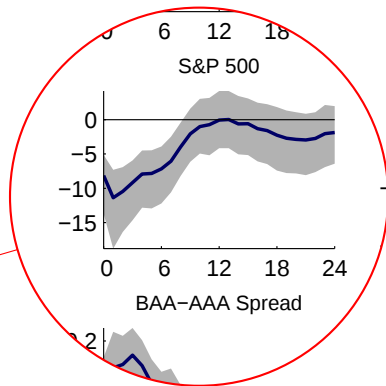
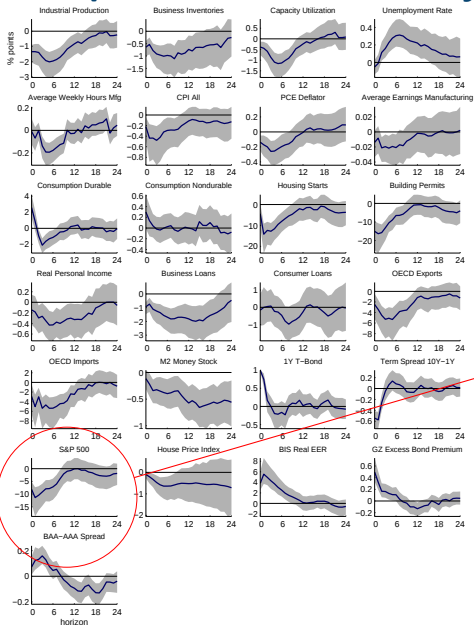
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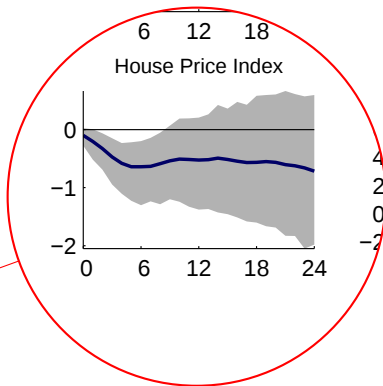
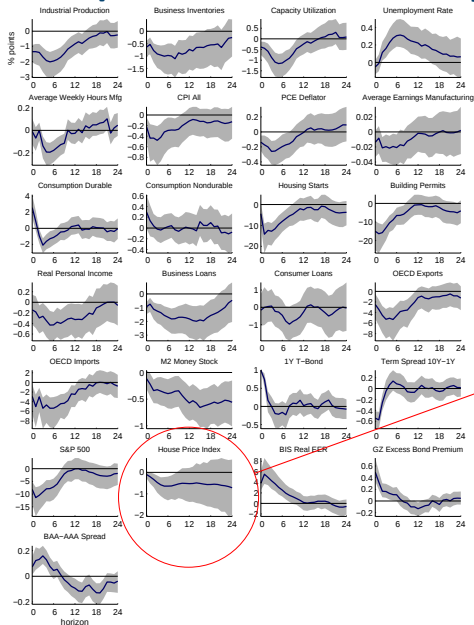
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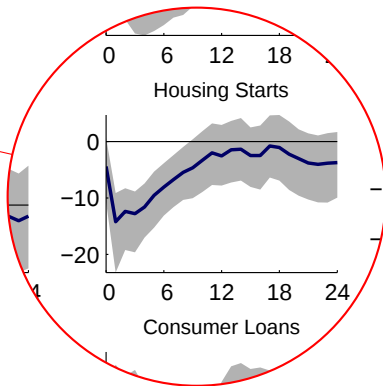
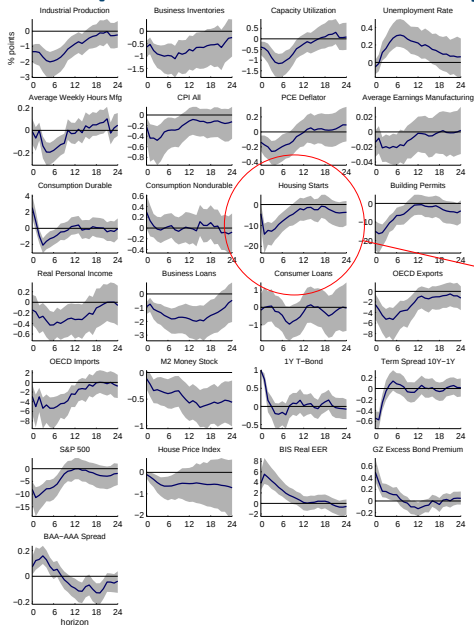
The Response of the Economy: Other Assets



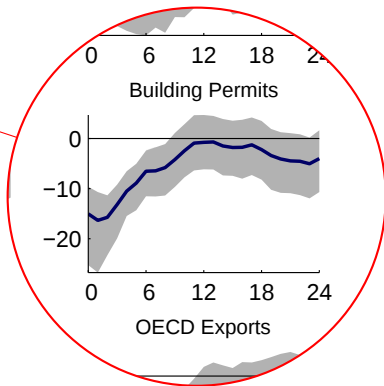
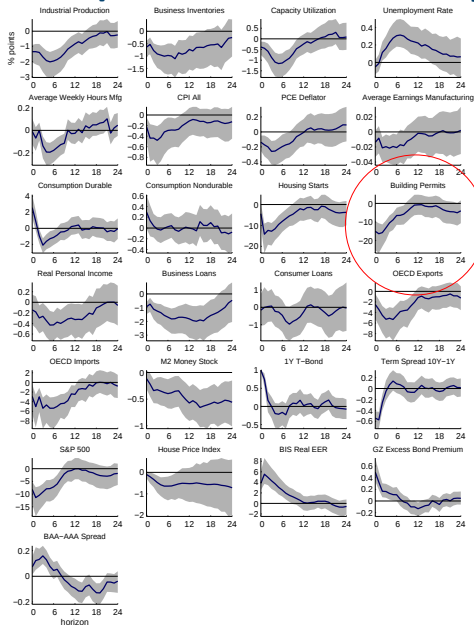
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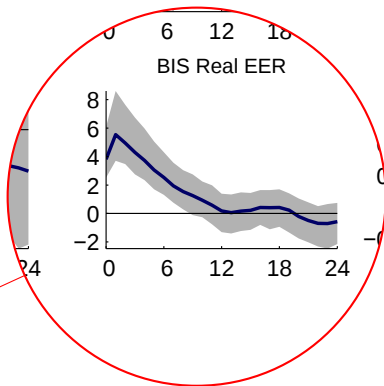
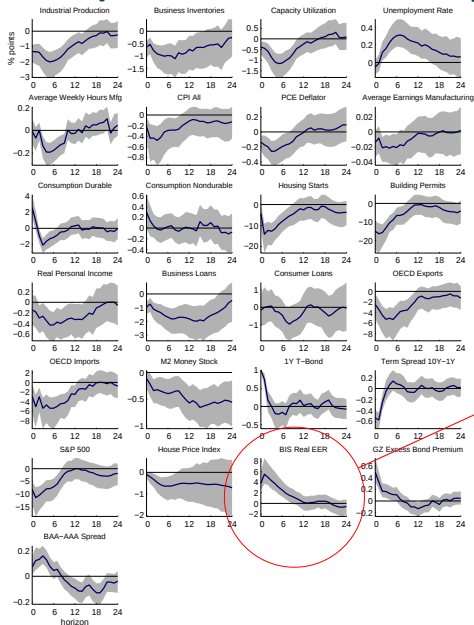
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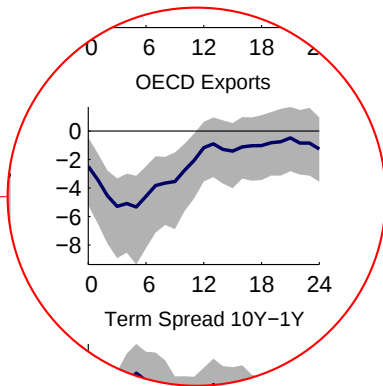
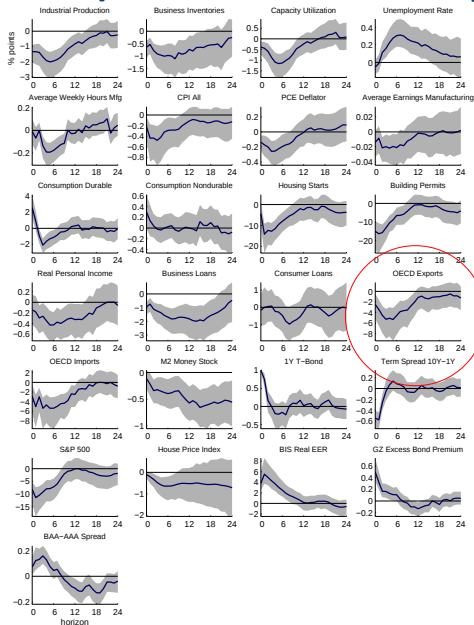
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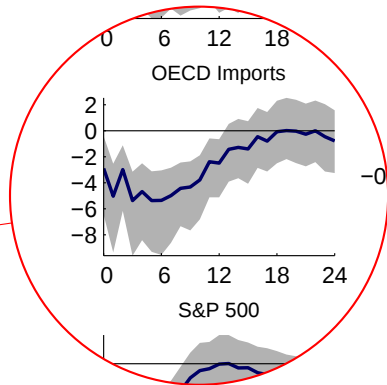
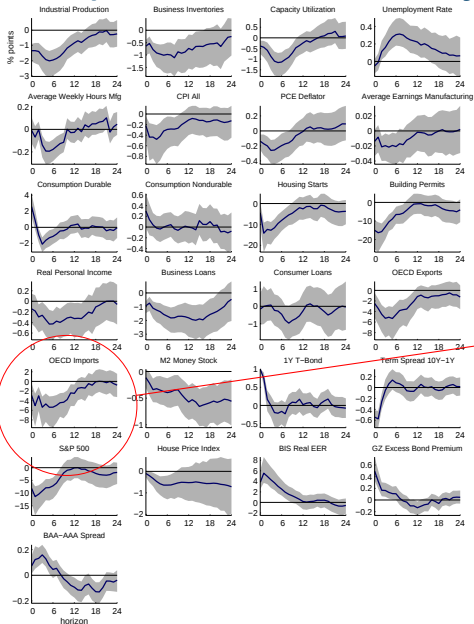
The Response of the Economy: **Export**



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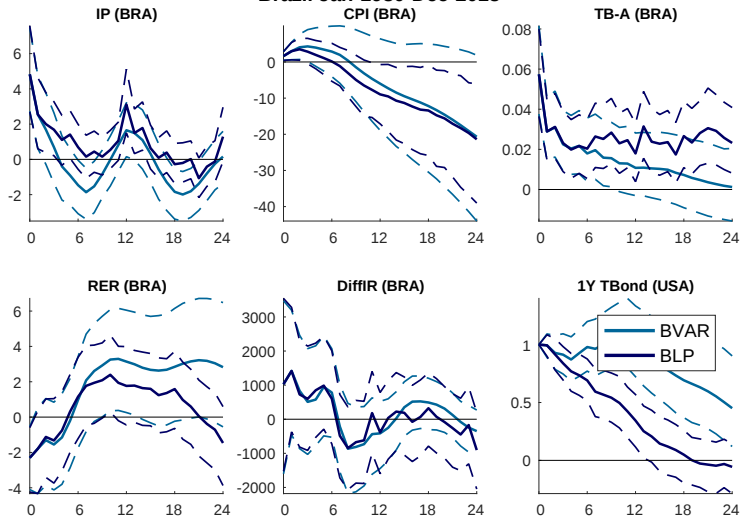
What are the Effects of Monetary Policy?

▷ Following a monetary tightening:

- **Economic activity and prices contract** – no puzzles
- Firms and households **lending cools down**, borrowing costs rise and so do corporate spreads
- **Expectations** move in line **with fundamentals**
- The slope of the **yield curve flattens**, and equity prices fall
- Finally, the **currency appreciates**

Spillovers of US MP policy

Brazil Jan-1980-Dec-2013



Trends & Cycles in Inflation

The Federal Reserve's View

“Inflation is characterized by an underlying trend that has been essentially constant since the mid-1990s; Theory and evidence suggest that this **trend is strongly influenced by inflation expectations** that, in turn, depend on monetary policy. In particular, the remarkable stability of various measures of expected inflation in recent years presumably represents the fruits of the Federal Reserve's sustained effort since the early 1980s to bring down and stabilize inflation at a low level. The anchoring of inflation expectations . . . does not, however, prevent actual inflation from fluctuating from year to year in response to the temporary influence of movements in **energy prices and other disturbances**. In addition, inflation will tend to run above or below its underlying trend to the extent that **resource utilization—which may serve as an indicator of firms' marginal costs**—is persistently high or low.”

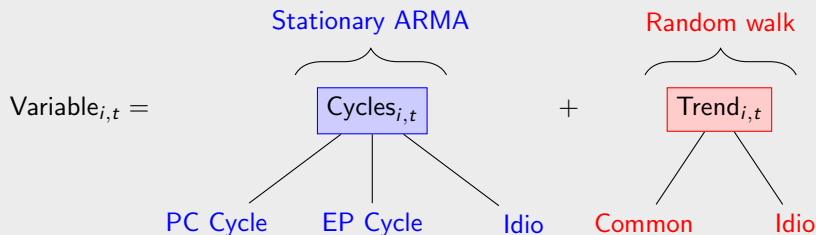
— Janet Yellen, 60th Boston Fed Conference

A Model of the Fed's View (Sketch)

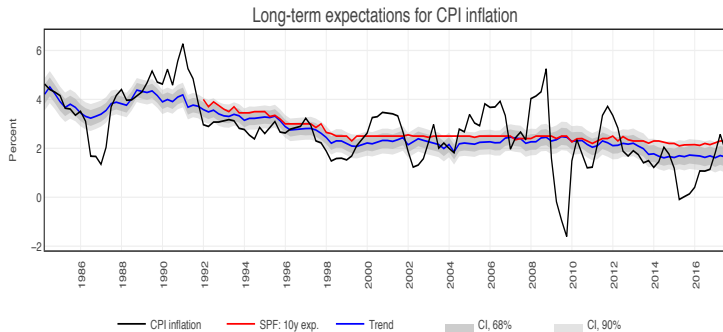
Hasenzagl, Pellegrino, Reichlin, and Ricco (2017, 2018)

Inflation dynamics:

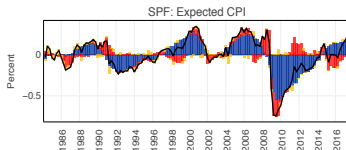
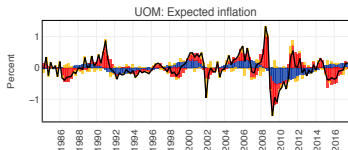
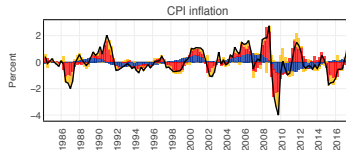
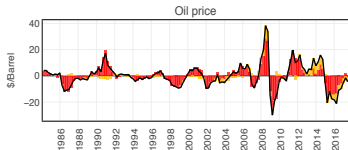
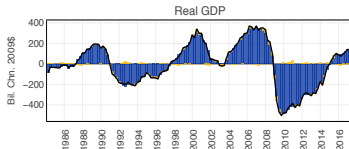
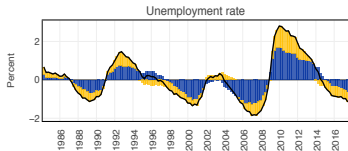
- **Trend in Inflation** – reflects expectations
Expectations and Inflation
- **Phillips Curve Cycle** – relating economic slack to prices
Unemployment Rate, GDP, inflation expectations and inflation
- **Energy Price Cycle** – unrelated to real variables
Oil prices, inflation expectations, and inflation



US – Common Inflation Trend and 10-year Expectations



US – Historical Decomposition of the Cycles

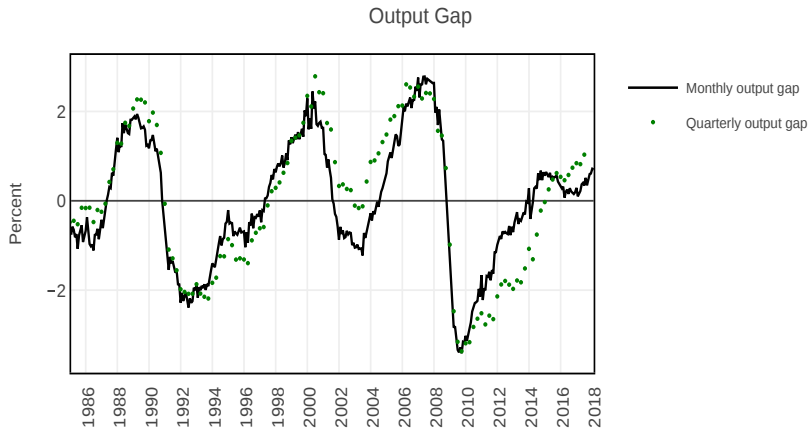


■ Phillips curve
 ■ Energy price cycle
 ■ Idiosyncratic cycle
 — Total cycle

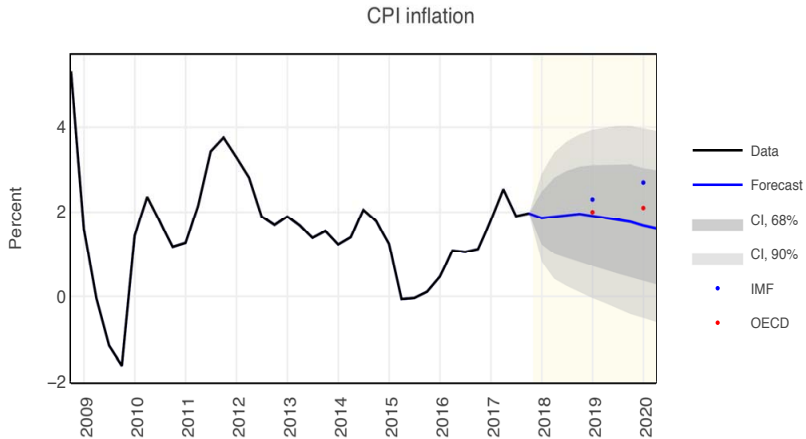
US – Relative Root Mean Squared Errors

Horizon	Variable	TC Model	BVAR	UC-SV
h=1	Unemployment rate	0.83	0.65	x
	Real GDP	1.00	0.92	x
	Oil price	1.02	1.08	x
	CPI Inflation	0.92	0.91	1.00
	UOM: Expected inflation	0.97	1.03	x
	SPF: Expected CPI	0.95	1.10	x
h=2	Unemployment rate	0.85	0.68	x
	Real GDP	1.03	0.91	x
	Oil price	1.04	1.18	x
	CPI Inflation	0.87	1.00	0.99
	UOM: Expected inflation	0.95	1.09	x
	SPF: Expected CPI	0.95	1.24	x
h=4	Unemployment rate	0.89	0.79	x
	Real GDP	1.09	0.97	x
	Oil price	1.04	1.26	x
	CPI Inflation	0.81	1.13	0.98
	UOM: Expected inflation	0.93	1.14	x
	SPF: Expected CPI	0.87	1.35	x
h=8	Unemployment rate	0.93	0.97	x
	Real GDP	1.17	1.18	x
	Oil price	1.04	1.39	x
	CPI Inflation	0.79	1.07	0.96
	UOM: Expected inflation	0.92	1.30	x
	SPF: Expected CPI	0.84	1.39	x

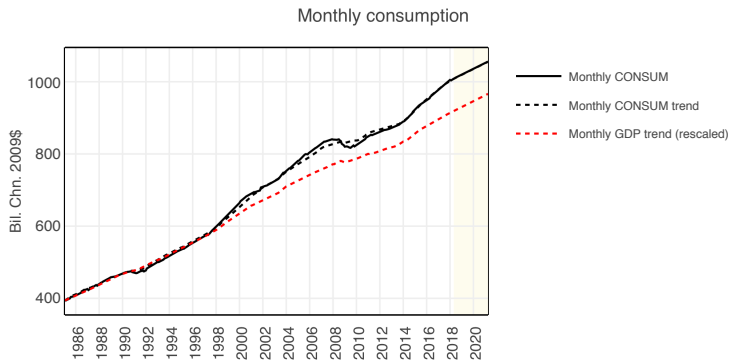
US output gap – Mixed-frequency



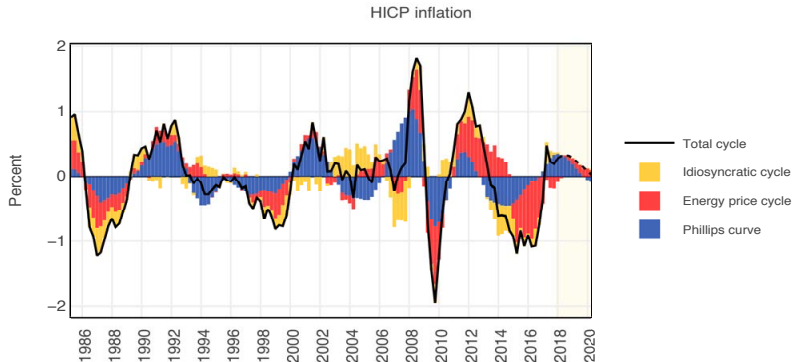
US – Inflation Forecast



US – Growth Trends

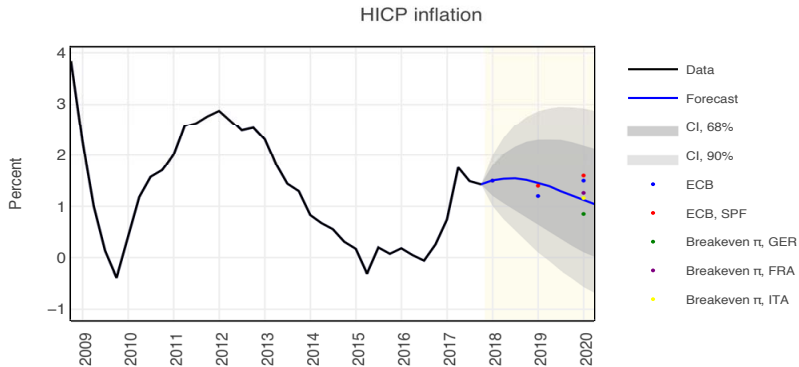


Euro Area – Historical Decomposition Inflation Cycle



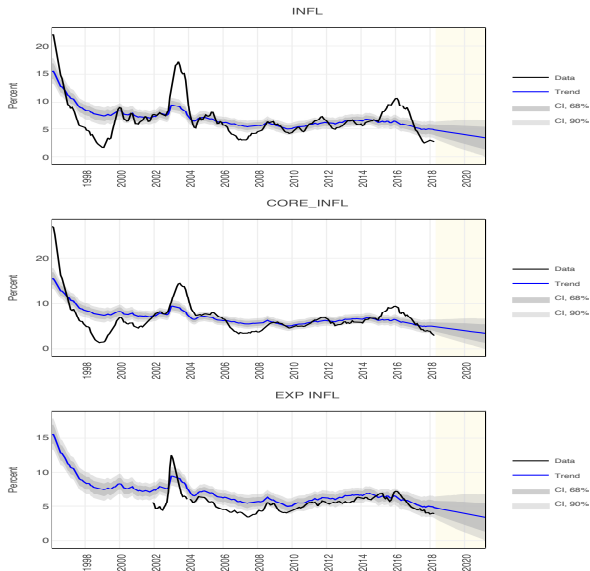
Note: Quarterly year-on-year HICP cycle. Forecast period is indicated with a shaded area, and goes from Q4-2017 to Q1-2020. Source: Authors' calculations, AWM, ECB.

Euro Area – Forecast

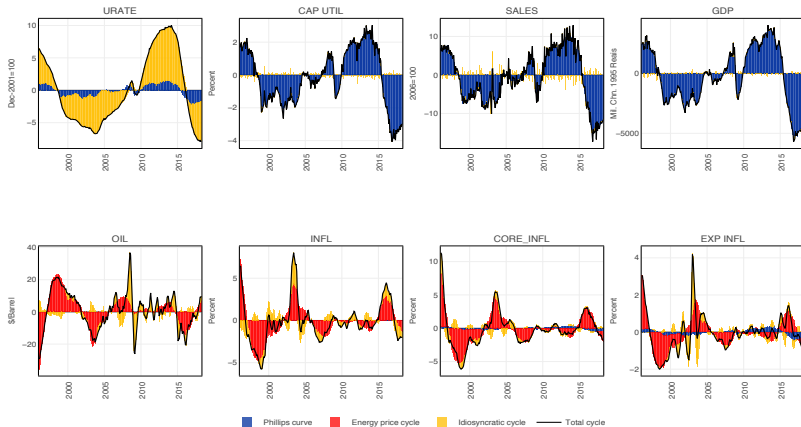


Note: Quarterly year-on-year HICP. Forecast period is indicated with a shaded area, and goes from Q4-2017 to Q1-2020. Source: Authors' calculations, AWM, ECB.

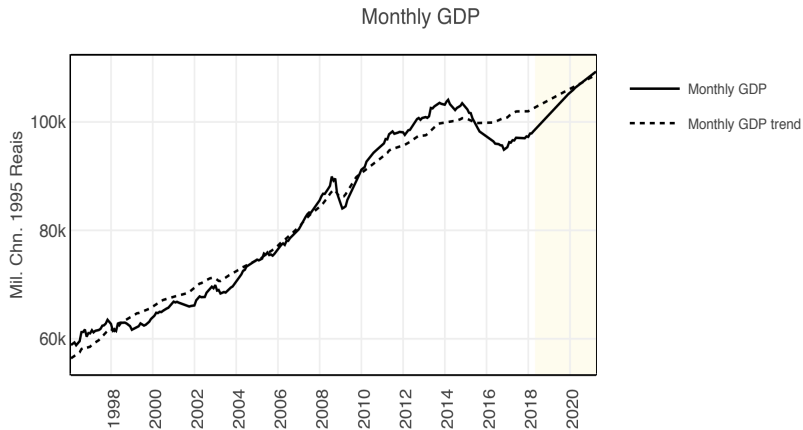
Brazil – Trend Inflation



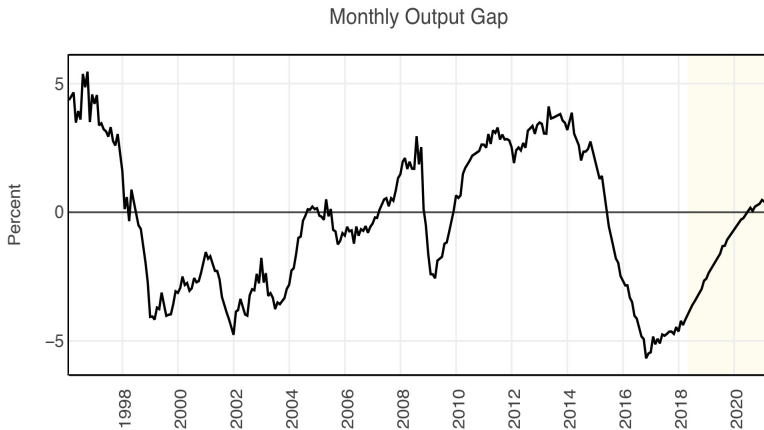
Brazil – Cycle Decomposition



Brazil – Output Trend



Brazil – Output Gap Forecast



Conclusions

- The **Phillips Curve** well identified and **fairly stable** since the early 1980s
- **Not** always the **dominant component**
- Large **oil price fluctuations** can **move consumers' expectations** away from the real-nominal relationship