Caught by Surprise: How Markets Respond to Macroeconomic News

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Main Objective

- **Key Questions**:
  - How macroeconomic news, specifically “surprises in macroeconomic data”, impacts forecasts and asset prices?
  - What biases exist in macroeconomic forecasts?
  - How are these surprises incorporated into asset prices across various classes?

- **This Paper:**
  - Developed a real-time nowcast metric for macroeconomic surprises,
    - Considering hundreds of series globally
    - Extending the method by Beber, Brandt, and Luisi (2015).
  - Classified macroeconomic series into two categories: economic growth and inflation.
  - Created a composite measure of surprises, including 'instantaneous announcement surprise' and 'revision surprise'.

Data

United States | Browse | 15:04:18 | 11/01/23 - 11/30/23

Economic Releases | All Economic Releases | View: Agenda / Weekly

	Date Time	A	M	R	Ticker	Flag	Event	Period	Surv(M)	Actual	Prior	Revised	# Ests.
	MM/DD/YY			V									
21)	11/01 08:00				MBAVCHNG Index		MBA Mortgage Applications	Oct 27	--	-2.1%	-1.0%	--	0
22)	11/01 09:15				ADP CHNG Index		ADP Employment Change	Oct	150k	113k	89k	--	24
23)	11/01 10:45				MPMIUSMA Index		S&P Global US Manufacturing PMI	Oct F	50.0	50.0	50.0	--	11
24)	11/01 11:00				NAPMPMI Index		ISM Manufacturing	Oct	49.0	46.7	49.0	--	57
25)	11/01 15:00				FDTR Index		FOMC Rate Decision (Upper Bound)	Nov 1	5.50%	5.50%	5.50%	--	110
26)	11/02 09:30				INJCJC Index		Initial Jobless Claims	Oct 28	210k	217k	210k	212k	41
27)	11/02 11:00				DGNOCHNG Index		Durable Goods Orders	Sep F	4.7%	4.6%	4.7%	4.0%	8
28)	11/02 11:00				TMNOCHNG Index		Factory Orders	Sep	2.3%	2.8%	1.2%	1.0%	33
29)	11/03 09:30				NFP TCH Index		Change in Nonfarm Payrolls	Oct	180k	150k	336k	297k	67
30)	11/03 09:30				USURTOT Index		Unemployment Rate	Oct	3.8%	3.9%	3.8%	--	65
31)	11/07 10:30				USTBTOT Index		Trade Balance	Sep	-$59.8b	-$61.5b	-$58.3b	-$58.7b	51
32)	11/08 09:00				MBAVCHNG Index		MBA Mortgage Applications	Nov 3	--	2.5%	-2.1%	--	0
33)	11/08 12:00				MWINCHNG Index		Wholesale Inventories MoM	Sep F	0.0%	0.2%	0.0%	0.2%	16
34)	11/09 10:30				INJCJC Index		Initial Jobless Claims	Nov 4	218k	217k	217k	220k	42
35)	11/10 12:00				CONSSENT Index		U. of Mich. Sentiment	Nov P	63.7	60.4	63.8	--	50
36)	11/14 10:30				CPI CHNG Index		CPI MoM	Oct	0.1%	0.0%	0.4%	--	66
37)	11/14 10:30				CPI YOY Index		CPI YoY	Oct	3.3%	3.2%	3.7%	--	51
38)	11/15 09:00				MBAVCHNG Index		MBA Mortgage Applications	Nov 10	--	2.8%	2.5%	--	0
39)	11/15 10:30				RSTAMOM Index		Retail Sales Advance MoM	Oct	-0.3%	-0.1%	0.7%	0.9%	63
40)	11/15 10:30				FDIDFDMO Index		PPI Final Demand MoM	Oct	0.1%	-0.5%	0.5%	0.4%	51
41)	11/15 10:30				EMPRGBCI Index		Empire Manufacturing	Nov	-3.0	9.1	-4.6	--	30
42)	11/16 10:30				INJCJC Index		Initial Jobless Claims	Nov 11	220k	231k	217k	218k	43
43)	11/16 11:15				IP CHNG Index		Industrial Production MoM	Oct	-0.4%	-0.6%	0.3%	0.1%	60
44)	11/17 10:30				NHSPSTOT Index		Housing Starts	Oct	1350k	1372k	1358k	1346k	54
45)	11/20 12:00				LEI CHNG Index		Leading Index	Oct	-0.7%	-0.8%	-0.7%	--	30

What they do:

- **Daily measure of the current reading of macroeconomic surprises**
- **Real-time nowcast of macroeconomic surprises across (almost) all macroeconomic releases**
  - US, Eurozone, UK, Japan
  - March 1997 to December 2019
    - (no financial data) – Central Bank Decisions for example

- **Two Main categories:**
  - Inflation
  - Growth
    - Output – Industrial Production, Retail Sales
    - Employment – Jobless Claims, Unemployment rate
    - Sentiment – Consumer Confidence, PMIs

What they do:

- **PCA on the announcement values by category and region**
  - Use the historical data between 1980 and March 1997 to calculate the initial correlation matrix per category

$$S^r_{c,t} = \sum_{i \in \omega_t} \lambda^r_{i,c,t} S^r_{i,c,t}$$

  - r denotes the regions (UK, Eurozone, etc)
  - c denotes the category (Inflation, output, employment, sentiment)
  - ω denotes the set of currently active macroeconomic news series at day t

What they do:

- **They also build the two nowcast metrics developed by Beber et al.(2015)**
  - Actuals: announcement value
  - Disagreement (Ex ante uncertainty): standard deviation of forecasts

$$A^r_{c,t} = \sum_{i \in \omega_t} \lambda^r_{i,c,t} A^r_{i,c,t}$$

$$FD^r_{c,t} = \sum_{i \in \omega_t} \lambda^r_{i,c,t} FD^r_{i,c,t}$$

  - r denotes the regions (UK, Eurozone, etc)
  - c denotes the category (Inflation, output, employment, sentiment)
  - ω denotes the set of currently active macroeconomic news series at day t

What they find

Behavior of Macroeconomic Surprises:

- Economic surprises do not follow a random walk but display short-term autocorrelation, termed 'economic surprise momentum'.
- This momentum is evident across various regions and particularly in growth categories.
- Underreaction in economists' consensus forecasts contributes to this momentum.

Underreaction in Forecasts:

- Changes in forecasts are too rigid compared to actual changes and anchored towards previous releases.
- Consensus forecasts frequently underreact to both:
  - Historical trends of a series
  - Surprises in other macroeconomic series.

What they find

Impact on Asset Prices:

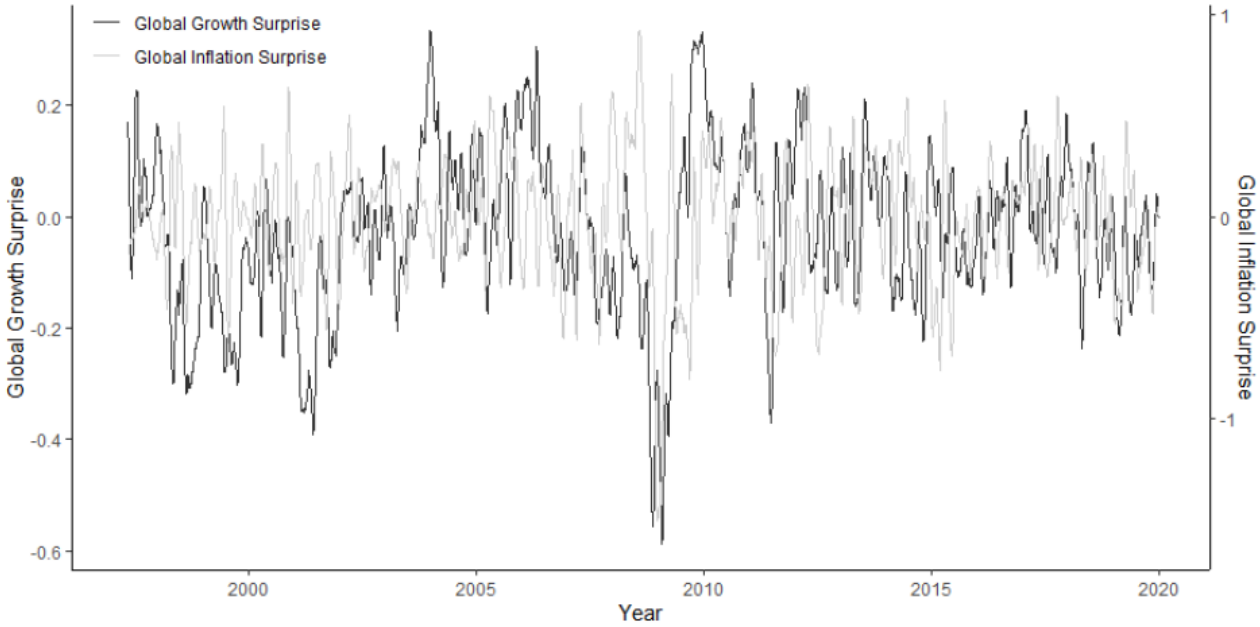
- Macroeconomic surprises are found to predictably influence asset prices.
- Growth surprise nowcasts:
  - Positively predict returns on risky assets
  - Negatively predict government bond returns.
- Asset returns are predictable from the next day to three months ahead.
- Surprises on a global scale exert a more significant impact on asset prices than regional surprises
- Return predictability suggests market inefficiency due to underreaction in investors' expectations.

- **Macroeconomic expectations of forecasters and investors are predictably biased generating economic surprise momentum in macroeconomic news and asset prices**

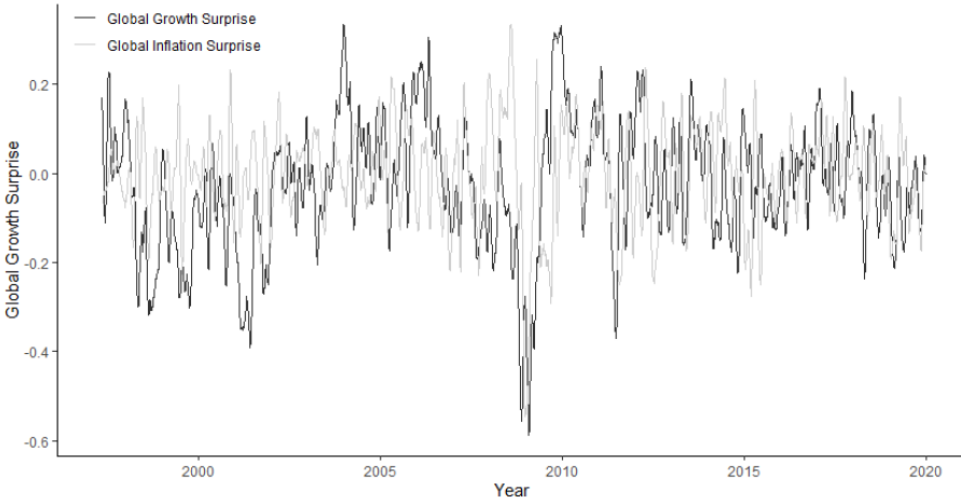
Empirical Results

Inflation and growth surprises seem to be unrelated

Figure 1: **Global growth and inflation surprises nowcast.** The figure plots the 21-day moving average of the global growth surprise nowcast (black line, left y-axis) and global inflation nowcast (grey line, right y-axis) over time. Regional surprise nowcasts are constructed according to equation (1), which are subsequently equally-weighted into a global surprise nowcast. The sample period runs from 31-03-1997 till 31-12-2019.



Inflation and growth surprises seem to be unrelated



- **Global growth surprises behave pro-cyclical**
- **Inflation surprise fator are more erratic in variation and less aligned with periods of expansions and recesions**
- **Inflation and growth surprises seem to be unrelated**
- **Positive surprises are typically followed-up by more positive surprises, while negative surprises are followed up by negative surprises.**

Macroeconomic Surprises do not follow a Random walk

- Macroeconomic Surprises do not follow a Random walk

- Economic Surprise Momentum
  - Observed locally in each region and globally
  - Especially present in growth surprises
  - Local surprises are strongly correlated with global surprises

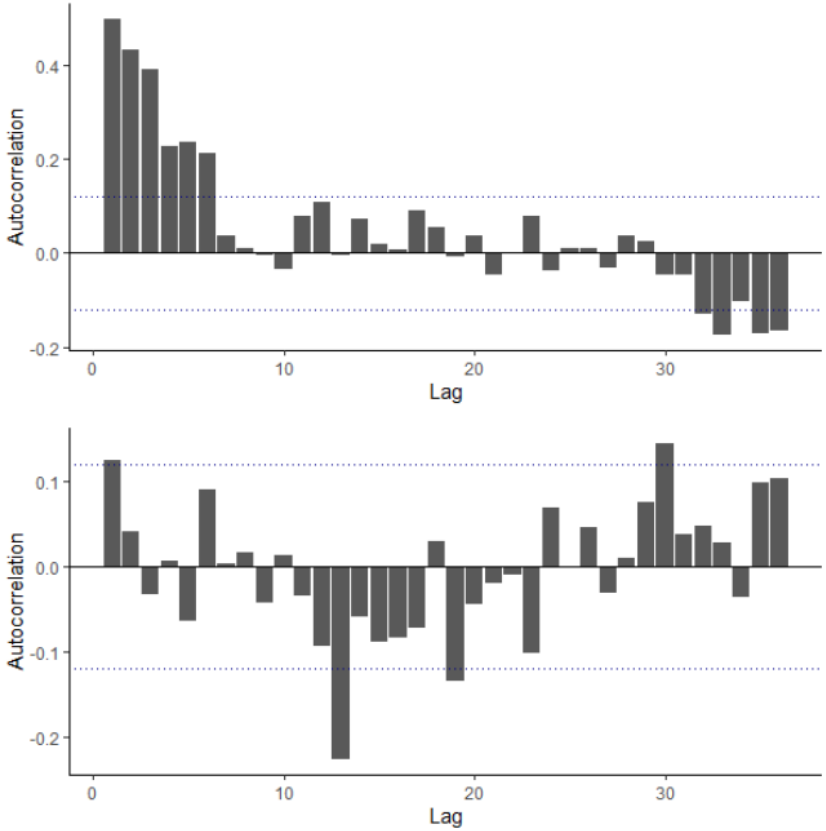


Figure 2: **Economic surprise momentum.** The upper (lower) plot depicts the autocorrelation pattern of the global growth (inflation) surprise nowcast. Autocorrelations are calculated at the monthly frequency (using 21 business-day sub-sampling) for lags 1 to 36. Dotted lines indicate 5% significance levels. The sample runs from 31-03-1997 till 31-12-2019.

Economic surprises are correlated over time and non-random over a short time horizon

Var.	obs.	mean	sd	pos	neg	$\hat{\rho}_1$	$\hat{\rho}_3$	$\hat{\rho}_{12}$
$S_{g,US}$	5,936	-0.02	0.29	0.49	0.51	0.36	0.28	0.07
$S_{g,UK}$	5,866	-0.14	0.30	0.31	0.69	0.44	0.37	0.39
$S_{g,JP}$	5,216	0.03	0.30	0.57	0.43	0.43	0.37	0.03
$S_{g,EU}$	5,898	0.03	0.20	0.54	0.46	0.37	0.35	-0.00
$S_{g,GL}$	5,936	-0.03	0.16	0.43	0.57	0.50	0.39	0.11
$S_{i,US}$	5,903	0.03	0.45	0.54	0.45	0.06	-0.02	-0.08
$S_{i,UK}$	5,883	-0.01	0.68	0.49	0.51	-0.20	0.01	0.10
$S_{i,JP}$	4,698	-0.06	0.64	0.47	0.53	0.59	0.27	-0.35
$S_{i,EU}$	5,905	0.00	0.49	0.48	0.52	-0.09	-0.16	0.36
$S_{i,GL}$	5,905	-0.01	0.34	0.51	0.49	0.13	-0.03	-0.09

What drives economic surprise momentum?

What drives economic surprise momentum?

$$S_{i,t} = \alpha + \epsilon_t$$

	Panel A: Growth surprises								
	$\hat{\alpha}$	BG	$\hat{\beta}$	$\hat{\gamma}_F$	$\hat{\gamma}_A$	$\hat{\gamma}_1$	$\hat{\delta}_1$	$\hat{\delta}_2$	$\hat{\delta}_3$
US	0.00	87.24***	0.12***	0.08***	-0.07***	0.74***	0.08***	-0.07***	0.65***
	(0.25)	(0.00)	(3.97)	(2.83)	(-2.86)	(2.72)	(2.90)	(-2.93)	(2.53)
UK	-0.02	19.79***	0.01	0.03	-0.06	0.04	0.04	-0.07*	0.06
	(-0.73)	(0.00)	(0.28)	(0.67)	(-1.39)	(0.10)	(1.01)	(-1.74)	(0.16)
JP	-0.03	11.53***	0.04	0.01	-0.03	0.37	0.00	-0.02	0.37
	(-1.26)	(0.01)	(1.08)	(0.20)	(-0.94)	(1.07)	(0.04)	(-0.77)	(1.07)
EU	-0.03	77.40***	0.14***	0.10***	-0.09***	0.73***	0.09***	-0.08***	0.64**
	(-1.17)	(0.00)	(4.52)	(3.97)	(-3.69)	(2.66)	(3.24)	(-3.07)	(2.31)
Global	-0.01	140.58***	0.09***	0.06***	-0.06***	0.59***	0.06***	-0.05***	0.53***
	(-1.27)	(0.00)	(4.59)	(3.59)	(-3.62)	(3.40)	(3.27)	(-3.30)	(3.19)

What drives economic surprise momentum?

	Panel A: Growth surprises	
	$\hat{\alpha}$	BG
US	0.00	87.24***
	(0.25)	(0.00)
UK	-0.02	19.79***
	(-0.73)	(0.00)
JP	-0.03	11.53***
	(-1.26)	(0.01)
EU	-0.03	77.40***
	(-1.17)	(0.00)
Global	-0.01	140.58***
	(-1.27)	(0.00)

$$S_{i,t} = \alpha + \epsilon_t$$

What drives economic surprise momentum?

	Panel A: Growth surprises		
	$\hat{\alpha}$	BG	$\hat{\beta}$
US	0.00	87.24***	0.12***
	(0.25)	(0.00)	(3.97)
UK	-0.02	19.79***	0.01
	(-0.73)	(0.00)	(0.28)
JP	-0.03	11.53***	0.04
	(-1.26)	(0.01)	(1.08)
EU	-0.03	77.40***	0.14***
	(-1.17)	(0.00)	(4.52)
Global	-0.01	140.58***	0.09***
	(-1.27)	(0.00)	(4.59)

$$S_t = \alpha + \beta * (F_t - A_{t-1}) + \epsilon_t$$

What drives economic surprise momentum?

	Panel A: Growth surprises				
	$\hat{\alpha}$	BG	$\hat{\beta}$	$\hat{\gamma_F}$	$\hat{\gamma_A}$
US	0.00	87.24***	0.12***	0.08***	-0.07***
	(0.25)	(0.00)	(3.97)	(2.83)	(-2.86)
UK	-0.02	19.79***	0.01	0.03	-0.06
	(-0.73)	(0.00)	(0.28)	(0.67)	(-1.39)
JP	-0.03	11.53***	0.04	0.01	-0.03
	(-1.26)	(0.01)	(1.08)	(0.20)	(-0.94)
EU	-0.03	77.40***	0.14***	0.10***	-0.09***
	(-1.17)	(0.00)	(4.52)	(3.97)	(-3.69)
Global	-0.01	140.58***	0.09***	0.06***	-0.06***
	(-1.27)	(0.00)	(4.59)	(3.59)	(-3.62)

$$S_t = \alpha + \gamma_F * F_t + \gamma_A * A_h + \epsilon_t$$

$$(A_h = A_{t-1})$$

What drives economic surprise momentum?

	Panel A: Growth surprises					
	$\hat{\alpha}$	BG	$\hat{\beta}$	$\hat{\gamma_F}$	$\hat{\gamma_A}$	$\hat{\gamma_1}$
US	0.00	87.24***	0.12***	0.08***	-0.07***	0.74***
	(0.25)	(0.00)	(3.97)	(2.83)	(-2.86)	(2.72)
UK	-0.02	19.79***	0.01	0.03	-0.06	0.04
	(-0.73)	(0.00)	(0.28)	(0.67)	(-1.39)	(0.10)
JP	-0.03	11.53***	0.04	0.01	-0.03	0.37
	(-1.26)	(0.01)	(1.08)	(0.20)	(-0.94)	(1.07)
EU	-0.03	77.40***	0.14***	0.10***	-0.09***	0.73***
	(-1.17)	(0.00)	(4.52)	(3.97)	(-3.69)	(2.66)
Global	-0.01	140.58***	0.09***	0.06***	-0.06***	0.59***
	(-1.27)	(0.00)	(4.59)	(3.59)	(-3.62)	(3.40)

$$S_{i,t} = \alpha + \gamma_1 * S_{index-i,t-1} + \epsilon_t$$

A positive estimate of γ1 implies that past economic surprises on other macroeconomic series are able to predict the current surprise in series i

What drives economic surprise momentum?

	Panel A: Growth surprises			
		$\hat{\delta}_1$	$\hat{\delta}_2$	$\hat{\delta}_3$
US		0.08***	-0.07***	0.65***
	$S_t = \alpha + \delta_1 * F_t + \delta_2 * A_{t-1} + \delta_3 * S_{index-i,t-1} + \epsilon_t$	(2.90)	(-2.93)	(2.53)
UK		0.04	-0.07*	0.06
		(1.01)	(-1.74)	(0.16)
JP		0.00	-0.02	0.37
		(0.04)	(-0.77)	(1.07)
EU		0.09***	-0.08***	0.64**
		(3.24)	(-3.07)	(2.31)
Global		0.06***	-0.05***	0.53***
		(3.27)	(-3.30)	(3.19)

What drives economic surprise momentum?

$$S_{i,t} = \alpha + \epsilon_t$$

	Panel A: Growth surprises								
	$\hat{\alpha}$	BG	$\hat{\beta}$	$\hat{\gamma}_F$	$\hat{\gamma}_A$	$\hat{\gamma}_1$	$\hat{\delta}_1$	$\hat{\delta}_2$	$\hat{\delta}_3$
US	0.00	87.24***	0.12***	0.08***	-0.07***	0.74***	0.08***	-0.07***	0.65***
	(0.25)	(0.00)	(3.97)	(2.83)	(-2.86)	(2.72)	(2.90)	(-2.93)	(2.53)
UK	-0.02	19.79***	0.01	0.03	-0.06	0.04	0.04	-0.07*	0.06
	(-0.73)	(0.00)	(0.28)	(0.67)	(-1.39)	(0.10)	(1.01)	(-1.74)	(0.16)
JP	-0.03	11.53***	0.04	0.01	-0.03	0.37	0.00	-0.02	0.37
	(-1.26)	(0.01)	(1.08)	(0.20)	(-0.94)	(1.07)	(0.04)	(-0.77)	(1.07)
EU	-0.03	77.40***	0.14***	0.10***	-0.09***	0.73***	0.09***	-0.08***	0.64**
	(-1.17)	(0.00)	(4.52)	(3.97)	(-3.69)	(2.66)	(3.24)	(-3.07)	(2.31)
Global	-0.01	140.58***	0.09***	0.06***	-0.06***	0.59***	0.06***	-0.05***	0.53***
	(-1.27)	(0.00)	(4.59)	(3.59)	(-3.62)	(3.40)	(3.27)	(-3.30)	(3.19)

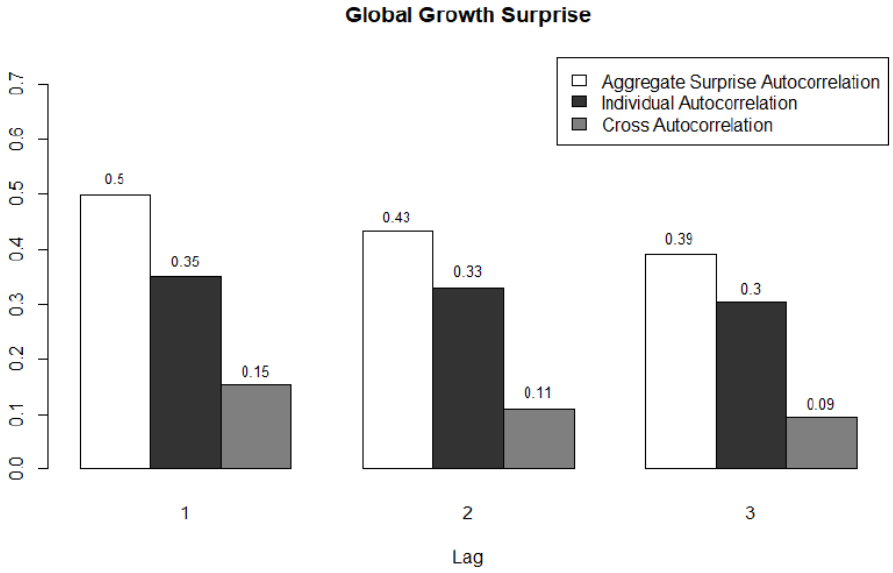
What drives economic surprise momentum?

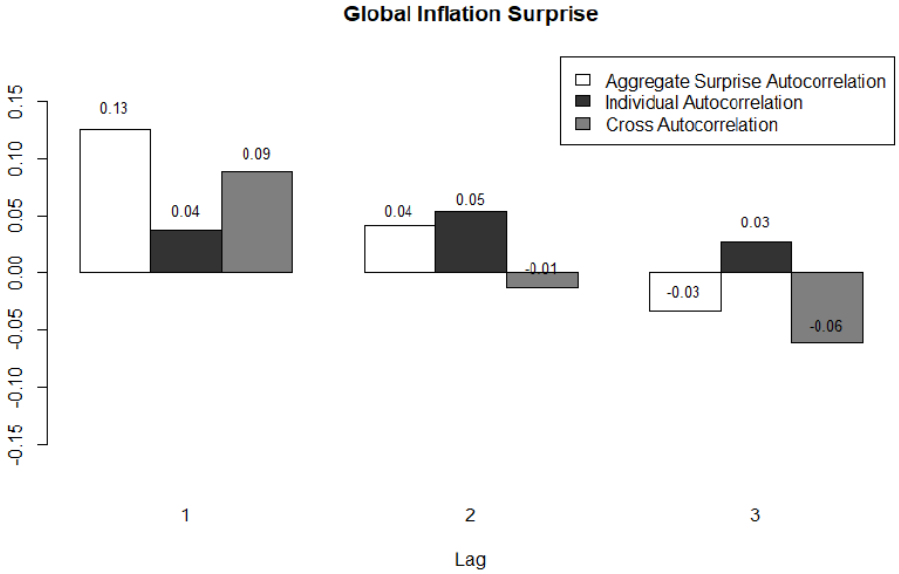
$$S_{i,t} = \alpha + \epsilon_t$$

	Panel B: Inflation surprises								
	$\hat{\alpha}$	BG	$\hat{\beta}$	$\hat{\gamma_F}$	$\hat{\gamma_A}$	$\hat{\gamma_1}$	$\hat{\delta_1}$	$\hat{\delta_2}$	$\hat{\delta_3}$
US	-0.04	8.56***	0.04	0.00	0.01	0.34	-0.01	0.03	0.38
	(-1.15)	(0.04)	(0.86)	(0.03)	(0.34)	(0.93)	(-0.17)	(0.71)	(1.10)
UK	0.08	15.99***	0.03	0.01	-0.02	1.06*	-0.02	0.01	1.10*
	(1.44)	(0.00)	(0.79)	(0.06)	(-0.25)	(1.70)	(-0.20)	(0.09)	(1.67)
JP	0.04	0.65***	0.07*	0.22	-0.24	0.35	0.18	-0.20	0.28
	(1.13)	(0.89)	(1.87)	(1.38)	(-1.62)	(1.17)	(1.22)	(-1.43)	(0.89)
EU	-0.04	16.81***	0.05	0.11***	-0.00	0.68***	0.12***	0.00	0.58***
	(-1.35)	(0.00)	(1.49)	(3.63)	(-0.03)	(3.58)	(4.78)	(0.02)	(4.61)
Global	-0.00	9.99***	0.05**	0.03	-0.02	0.56***	0.03	-0.01	0.53***
	(-0.19)	(0.02)	(2.44)	(1.09)	(-0.82)	(2.76)	(0.94)	(-0.54)	(2.77)

Decomposition of Economic Surprise Momentum

$$cov(S^r_{c,t}, S^r_{c,t-j}) = \sum_{i \in \omega_t} cov(\lambda^r_{i,c,t} S^r_{i,c,t}, \lambda^r_{i,c,t-j} S^r_{i,c,t-j}) + \sum_{i \in \omega_t, i \neq k} \sum_{j \in \omega_t, k \neq i} cov(\lambda^r_{i,c,t} S^r_{i,c,t}, \lambda^r_{k,c,t-j} S^r_{k,c,t-j}) \quad (4)$$





Economic Surprises and Asset Prices

Growth surprises and asset returns.

$$R_{t:t+h} = \alpha + \beta x_t + \epsilon_{t:t+h} \quad \forall t = 1, \cdots, T-h$$

	Equity				Bonds				Credits				Commodities	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(1)	(2)	(3)	(4)	(5)	(6)
S_l	2.25***				−0.04				0.95**					
	(3.11)				(−0.70)				(2.23)					
S_g		6.37***	6.47***	5.32***		−0.10	−0.11	−0.26**		1.96*	1.95**	2.33**	6.94***	6.75***
		(3.42)	(3.56)	(3.17)		(−1.27)	(−1.36)	(−2.42)		(1.93)	(1.98)	(2.13)	(2.78)	(3.08)
S_{l-g}			0.54	0.56*			−0.01	−0.01			0.44**	0.50**		
			(1.41)	(1.76)			(−0.09)	(−0.14)			(2.07)	(2.32)		
C	0.45**	0.59***	0.57***	1.78	0.03***	0.03***	0.03***	−0.13	0.25**	0.27**	0.26**	0.03	0.05	−1.21
	(2.04)	(2.83)	(2.69)	(1.64)	(3.54)	(3.66)	(3.33)	(−0.53)	(1.96)	(2.05)	(2.02)	(0.06)	(0.20)	(-0.66)
Controls	NO	NO	NO	YES	NO	NO	NO	YES	NO	NO	NO	YES	NO	YES
Obs.	1,056	1,096	1,056	1,044	1,056	1,096	1,056	1,044	824	824	824	780	274	268
R^2_{adj}	1.5%	3.6%	3.7%	4.1%	0.1%	0.4%	0.4%	3.0%	1.9%	2.7%	2.9%	3.9%	5.3%	4.0%

a 1 std dev (0.16) increase in the global growth surprise nowcast is associated with an average increase of 102 basis points in the subsequent monthly excess equity return.

Inflation surprises and asset returns.

	Equity				Bonds			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
S_l	0.68***				−0.03**			
	(2.94)				(−2.28)			
S_g		1.53**	1.42**	2.49***		−0.05	−0.05	−0.08**
		(2.35)	(2.17)	(3.08)		(−1.60)	(−1.52)	(−2.06)
S_{l-g}			0.20***	0.18**			−0.01***	−0.01
			(3.99)	(2.32)			(−3.86)	(−0.82)
C	0.43*	0.39*	0.43*	1.22	0.03***	0.03***	0.03***	−0.04
	(1.82)	(1.73)	(1.83)	(0.95)	(3.33)	(3.84)	(3.37)	(−0.88)
Controls	NO	NO	NO	YES	NO	NO	NO	YES
Obs.	1,032	1,088	1,032	982	1,032	1,088	1,032	982
R^2_{adj}	0.5%	1.1%	0.9%	5.9%	0.5%	0.8%	0.7%	4.1%

	Credits				Commodities	
	(1)	(2)	(3)	(4)	(5)	(6)
S_l	0.01					
	(0.05)					
S_g		0.42	0.36	0.99*	1.31	2.25**
		(1.55)	(1.38)	(1.95)	(1.32)	(2.46)
S_{l-g}			−0.29	−0.25		
			(−1.52)	(−1.41)		
C	0.26**	0.26**	0.27**	0.38	−0.14	-0.39
	(2.01)	(2.02)	(2.02)	(0.78)	(−0.46)	(-0.28)
Controls	NO	NO	NO	YES	NO	YES
Obs.	824	824	824	780	272	255
R^2_{adj}	−0.1%	0.7%	1.1%	6.9%	0.7%	3.8%

Investment Strategies

- **The investment strategy takes a position equal to to the 1-day lagged value of a growth or inflation nowcast on the last day of the month.**
- **This position is held for one month, after which it is updated using the subsequent end-of-the-month nowcast value.**
- **We pool the markets within an asset class into a global strategy by equally weighting the markets.**

Panel A: Global surprises	Growth Surprise			Inflation Surprise		
	Sharpe	$\hat{\alpha}$	$\hat{\beta}$	Sharpe	$\hat{\alpha}$	$\hat{\beta}$
Equity	0.50**	2.10**	-0.09**	0.39*	2.48	-0.05
	(2.40)	(2.35)	(-2.37)	(1.86)	(1.56)	(-0.94)
Bonds	-0.28	-0.00	-0.08	-0.31	-0.06	-0.08
	(-1.33)	(-0.24)	(-1.56)	(-1.46)	(-1.15)	(-0.88)
Credits	0.44*	0.56	-0.04	0.37	0.69	0.01
	(1.86)	(1.37)	(-0.80)	(1.58)	(1.38)	(0.20)
Commodities	0.64***	1.85*	-0.08**	0.32	2.00	-0.02
	(3.03)	(2.37)	(-1.99)	(1.51)	(1.21)	(-0.36)

Panel B: Local surprises	Growth Surprise			Inflation Surprise		
	Sharpe	$\hat{\alpha}$	$\hat{\beta}$	Sharpe	$\hat{\alpha}$	$\hat{\beta}$
Equity	0.58***	2.61**	-0.10**	0.36**	2.55	-0.07
	(3.91)	(2.58)	(-2.28)	(2.42)	(1.48)	(-1.20)
Bonds	-0.18	0.01	-0.12	-0.30**	-0.05	-0.12
	(-1.24)	(0.54)	(-1.69)	(-2.00)	(-0.97)	(-1.04)
Credits	0.44***	0.69	-0.05	0.03	0.22	-0.06
	(2.95)	(1.65)	(-0.74)	(0.20)	(0.44)	(-0.72)

Investment Strategies

Sizable and significant Sharpe ratios

- For equity markets, we find that exploiting global or local growth surprises yields of 0.50 or 0.58

Significant positively CAPM alphas of 2.10% and 2.61% per year, respectively

These investment strategies also exhibit a relatively negative exposure towards the market, as reflected in its negative beta

Panel A: Global surprises	Growth Surprise			Inflation Surprise		
	Sharpe	$\hat{\alpha}$	$\hat{\beta}$	Sharpe	$\hat{\alpha}$	$\hat{\beta}$
Equity	0.50**	2.10**	-0.09**	0.39*	2.48	-0.05
	(2.40)	(2.35)	(-2.37)	(1.86)	(1.56)	(-0.94)
Bonds	-0.28	-0.00	-0.08	-0.31	-0.06	-0.08
	(-1.33)	(-0.24)	(-1.56)	(-1.46)	(-1.15)	(-0.88)
Credits	0.44*	0.56	-0.04	0.37	0.69	0.01
	(1.86)	(1.37)	(-0.80)	(1.58)	(1.38)	(0.20)
Commodities	0.64***	1.85*	-0.08**	0.32	2.00	-0.02
	(3.03)	(2.37)	(-1.99)	(1.51)	(1.21)	(-0.36)

Panel B: Local surprises	Growth Surprise			Inflation Surprise		
	Sharpe	$\hat{\alpha}$	$\hat{\beta}$	Sharpe	$\hat{\alpha}$	$\hat{\beta}$
Equity	0.58***	2.61**	-0.10**	0.36**	2.55	-0.07
	(3.91)	(2.58)	(-2.28)	(2.42)	(1.48)	(-1.20)
Bonds	-0.18	0.01	-0.12	-0.30**	-0.05	-0.12
	(-1.24)	(0.54)	(-1.69)	(-2.00)	(-0.97)	(-1.04)
Credits	0.44***	0.69	-0.05	0.03	0.22	-0.06
	(2.95)	(1.65)	(-0.74)	(0.20)	(0.44)	(-0.72)

Varying the forecast horizon

Growth surprises and asset returns:

Panel A: Global	Equity		Bonds		Credits		Commodities	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1 day	0.17*	0.18*	-0.001	-0.00	0.07*	0.10**	0.20**	0.25**
	(1.81)	(1.93)	(-0.33)	(-0.89)	(1.71)	(1.99)	(2.25)	(2.39)
1 week	1.02**	1.09**	-0.00	-0.01	0.37*	0.55**	1.14**	1.41***
	(1.98)	(2.24)	(-0.57)	(-1.08)	(1.73)	(2.12)	(2.60)	(2.81)
1 month	6.37***	5.32***	-0.10	-0.16**	1.96*	2.33**	6.94***	6.75***
	(3.42)	(3.17)	(-1.27)	(-2.00)	(1.93)	(2.12)	(2.78)	(3.08)
3 months	11.74**	9.58*	-0.14	-0.46*	5.83*	7.80**	16.02*	21.39**
	(2.19)	(1.66)	(-0.65)	(-1.79)	(1.86)	(2.10)	(1.95)	(2.33)
6 months	15.07*	12.93	0.17	-0.80	4.68	9.75	6.08	17.18
	(1.66)	(1.16)	(0.37)	(-1.57)	(1.06)	(1.60)	(0.44)	(0.77)
Controls	NO	YES	NO	YES	NO	YES	NO	YES

Growth surprises and asset returns:

Panel B: Local	Equity		Bonds		Credits	
	(1)	(2)	(3)	(4)	(5)	(6)
1 day	0.05	0.05**	0.00	-0.00	0.04*	0.05**
	(1.51)	(2.25)	(0.01)	(-0.23)	(1.90)	(2.22)
1 week	0.31**	0.30***	-0.00	-0.00	0.18*	0.24**
	(2.25)	(3.27)	(-0.16)	(-0.42)	(1.66)	(2.09)
1 month	2.25***	1.66***	-0.04	-0.04	0.95**	1.02**
	(3.11)	(3.78)	(-0.70)	(-0.96)	(2.22)	(2.38)
3 months	3.54***	2.26***	-0.04	-0.08	2.00	2.62*
	(2.85)	(3.75)	(-0.75)	(-1.37)	(1.52)	(1.75)
6 months	5.37***	1.90	0.04	-0.12	1.13	2.57
	(4.21)	(1.20)	(0.39)	(-1.36)	(0.65)	(1.04)
Controls	NO	YES	NO	YES	NO	YES

Announcement surprise versus revision surprise

Data

United States | Browse | 15:04:18 | 11/01/23 - 11/30/23

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	Date Time	A	M	R	Ticker	Flag	Event	Period	Surv(M)	Actual	Prior	Revised	# Ests.
	MM/DD/YY			V									
21)	11/01 08:00				MBAVCHNG Index		MBA Mortgage Applications	Oct 27	--	-2.1%	-1.0%	--	0
22)	11/01 09:15				ADP CHNG Index		ADP Employment Change	Oct	150k	113k	89k	--	24
23)	11/01 10:45				MPMIUSMA Index		S&P Global US Manufacturing PMI	Oct F	50.0	50.0	50.0	--	11
24)	11/01 11:00				NAPMPMI Index		ISM Manufacturing	Oct	49.0	46.7	49.0	--	57
25)	11/01 15:00				FDTR Index		FOMC Rate Decision (Upper Bound)	Nov 1	5.50%	5.50%	5.50%	--	110
26)	11/02 09:30				INJCJC Index		Initial Jobless Claims	Oct 28	210k	217k	210k	212k	41
27)	11/02 11:00				DGNOCHNG Index		Durable Goods Orders	Sep F	4.7%	4.6%	4.7%	4.0%	8
28)	11/02 11:00				TMNOCHNG Index		Factory Orders	Sep	2.3%	2.8%	1.2%	1.0%	33
29)	11/03 09:30				NFP TCH Index		Change in Nonfarm Payrolls	Oct	180k	150k	336k	297k	67
30)	11/03 09:30				USURTOT Index		Unemployment Rate	Oct	3.8%	3.9%	3.8%	--	65
31)	11/07 10:30				USTBTOT Index		Trade Balance	Sep	-$59.8b	-$61.5b	-$58.3b	-$58.7b	51
32)	11/08 09:00				MBAVCHNG Index		MBA Mortgage Applications	Nov 3	--	2.5%	-2.1%	--	0
33)	11/08 12:00				MWINCHNG Index		Wholesale Inventories MoM	Sep F	0.0%	0.2%	0.0%	0.2%	16
34)	11/09 10:30				INJCJC Index		Initial Jobless Claims	Nov 4	218k	217k	217k	220k	42
35)	11/10 12:00				CONSSENT Index		U. of Mich. Sentiment	Nov P	63.7	60.4	63.8	--	50
36)	11/14 10:30				CPI CHNG Index		CPI MoM	Oct	0.1%	0.0%	0.4%	--	66
37)	11/14 10:30				CPI YOY Index		CPI YoY	Oct	3.3%	3.2%	3.7%	--	51
38)	11/15 09:00				MBAVCHNG Index		MBA Mortgage Applications	Nov 10	--	2.8%	2.5%	--	0
39)	11/15 10:30				RSTAMOM Index		Retail Sales Advance MoM	Oct	-0.3%	-0.1%	0.7%	0.9%	63
40)	11/15 10:30				FDIDFDMO Index		PPI Final Demand MoM	Oct	0.1%	-0.5%	0.5%	0.4%	51
41)	11/15 10:30				EMPRGBCI Index		Empire Manufacturing	Nov	-3.0	9.1	-4.6	--	30
42)	11/16 10:30				INJCJC Index		Initial Jobless Claims	Nov 11	220k	231k	217k	218k	43
43)	11/16 11:15				IP CHNG Index		Industrial Production MoM	Oct	-0.4%	-0.6%	0.3%	0.1%	60
44)	11/17 10:30				NHSPSTOT Index		Housing Starts	Oct	1350k	1372k	1358k	1346k	54
45)	11/20 12:00				LEI CHNG Index		Leading Index	Oct	-0.7%	-0.8%	-0.7%	--	30

Panel A:	Equity		Bonds		Credits		Commodities	
Instantaneous surprise	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
S_g	14.31***	11.36**	−0.27	−0.42**	4.31**	5.01**	12.60	10.70
	(2.96)	(2.44)	(−1.34)	(−2.13)	(2.01)	(2.18)	(1.49)	(1.33)
S_{l-g}	0.82	0.79	0.07	0.07	0.78	1.18*		
	(0.41)	(0.48)	(0.61)	(0.63)	(1.26)	(1.82)		
Constant	0.55**	1.99	0.03***	−0.12	0.30**	0.23	−0.01	−1.65
	(2.55)	(1.37)	(3.34)	(−1.48)	(2.15)	(0.44)	(−0.04)	(−0.75)
Controls	NO	YES	NO	YES	NO	YES	NO	YES
Obs.	1,056	1,044	1,056	1,044	824	780	274	268
R^2_{adj}	3.1%	3.8%	0.6%	2.9%	2.4%	3.3%	2.9%	1.6%

Panel B:	Equity		Bonds		Credits		Commodities	
Revision surprise	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
S_g	7.45***	5.70**	-0.11	-0.21**	2.28*	2.62*	8.89***	9.04***
	(3.15)	(2.40)	(-1.12)	(-2.04)	(1.72)	(1.86)	(3.31)	(3.77)
S_{l-g}	0.68	0.72***	−0.03	−0.03	0.75**	0.74*		
	(1.10)	(4.40)	(−0.36)	(−0.48)	(2.01)	(1.91)		
Constant	0.51**	2.06	0.03***	−0.12	0.24*	−0.03	0.02	−1.50
	(2.36)	(1.35)	(3.32)	(−1.48)	(1.91)	(−0.07)	(0.06)	(−0.77)
Controls	NO	YES	NO	YES	NO	YES	NO	YES
Obs.	1,056	1,044	1,056	1,044	824	780	274	268
R^2_{adj}	2.5%	3.3%	0.2%	2.5%	2.2%	2.9%	4.6%	3.5%

Economic surprise momentum and return predictability

Economic surprise momentum and return predictability

Panel A: Growth	Equity		Bonds		Credits		Commodity	
	S_g	R^2	S_g	R^2	S_g	R^2	S_g	R^2
Equal Sign	7.10***	4.8%	-0.16*	1.6%	2.76**	6.8%	6.70**	5.0%
	(3.30)		(-1.71)		(2.07)		(2.29)	
Different Sign	2.49	0.1%	0.17	0.6%	-2.10	1.3%	7.83**	4.6%
	(0.88)		(1.23)		(-1.50)		(2.08)	
Full Sample	6.37***	3.6%	-0.10	0.4%	1.96*	2.7%	6.94***	5.3%
	(3.42)		(-1.27)		(1.93)		(2.78)	
Panel B: Inflation	Equity		Bonds		Credits		Commodity	
	S_g	R^2	S_g	R^2	S_g	R^2	S_g	R^2
Equal Sign	1.67*	1.2%	-0.07	0.9%	0.44	0.7%	0.97	-0.2%
	(1.68)		(-1.21)		(1.28)		(0.72)	
Different Sign	1.40*	0.8%	-0.04	0.4%	0.44	0.7%	1.86*	1.4%
	(1.67)		(-1.32)		(1.36)		(1.89)	
Full Sample	1.53**	1.1%	-0.05	0.8%	0.42	0.7%	1.31	0.7%
	(2.35)		(-1.60)		(1.55)		(1.32)	

If momentum in economic surprises drives return predictability, we would expect the return predictability to be stronger during periods where surprises continue in the same direction as lagged surprises

Return predictability and asset risks

Growth Surprises and asset volatily

	Equity				Bonds				Credits				Commodities	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(1)	(2)	(3)	(4)	(5)	(6)
S_l	−0.35				−0.00				−0.03					
	(−1.42)				(−1.68)				(−1.55)					
S_g		−1.23***	−1.27***	−0.73**		−0.00**	−0.00**	−0.00**		−0.04*	−0.04**	0.00	−0.29	−0.11
		(−3.16)	(−3.05)	(−2.21)		(−2.48)	(−2.47)	(−2.29)		(−1.90)	(−2.12)	(0.20)	(−0.98)	(−0.80)
S_{l-g}			0.03	0.02			−0.00	−0.00			−0.02	−0.02		
			(0.09)	(0.27)			(−1.17)	(−1.19)			(−1.11)	(−1.20)		
C	0.37***	0.35***	0.34***	0.03	0.00***	0.00***	0.00***	−0.00***	0.03**	0.03**	0.03**	−0.02**	0.19***	−0.13**
	(5.68)	(6.50)	(6.50)	(0.15)	(4.27)	(4.51)	(4.25)	(−2.72)	(2.07)	(2.05)	(2.06)	(−2.82)	(9.83)	(−1.42)
Controls	NO	NO	NO	YES	NO	NO	NO	YES	NO	NO	NO	YES	NO	YES
Obs.	1,056	1,096	1,056	1,044	1,056	1,096	1,056	1,044	824	824	824	780	274	268
R^2_{adj}	2.2%	8.3%	8.4%	18.5%	3.7%	3.8%	4.9%	37.4%	2.5%	1.8%	2.7%	20.4%	4.9%	42.9%

Table 15: **Inflation surprises and asset volatility.** This table summarizes the impact of macroeconomic inflation surprises on asset volatility. We regress one-month ahead realized volatility on end-of-month inflation surprises for different asset classes. For the remainder, regression specifications and definitions follow table 5. Shown are the predictive regression estimates, its corresponding t-values (in parenthesis), the number of observations (Obs.), and the adjusted R^2. The sample period runs from 31-03-1997 till 31-12-2019. The t-values, shown between parenthesis, are adjusted for time and asset clustering, except for commodities where we used Newey-West corrected t-values. Asterisks are used to indicate significance at a 10% (*), 5% (**) or 1% (***) level.

Conclusão

Economic Surprise Momentum

- Economic surprises do not follow a random walk but display short-term autocorrelation
- This momentum is evident across various regions and particularly in growth categories.

Underreaction in Forecasts:

- Changes in forecasts are too rigid compared to actual changes and anchored towards previous releases.
- Consensus forecasts frequently underreact to both:
  - Historical trends of a series
  - Surprises in other macroeconomic series.

Macroeconomic surprises have a systematic, predictable impact on asset prices.

Obrigado