

Macroeconomic News Announcements and Forex Markets: a Meta-Analysis of Event Studies

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What is the “news effect on exchange rates”?

The rapid adjustment of exchange rates in response to unexpected macroeconomic announcements, reflecting the market's reassessment of economic fundamentals.

Why study the effect of macroeconomic news on exchange rates?

- Policy relevance
- Price discovery
- Risk management

Problem Formulation

Growing Body of Research

- First study published by Goodhart (1986)
- More than 400 studies over the past 30 years

Variation in Findings

- Not all news significantly impacts exchange rates
- Currency pairs react differently to the same news

- A comprehensive meta-analysis is needed to synthesize findings across diverse studies
- The challenge of identifying consistent patterns in the impact of macroeconomic news remains unresolved

Research Questions

- Does publication bias affect the estimated effects of macroeconomic news announcements on exchange rates in the literature?
- What factors explain the differences in the estimated effects of macroeconomic news announcements on exchange rates?
- Is the effect consistent across different markets and currencies?

Methodology and Data

- Google Scholar search by keywords "forex exchange" and "news announcement" + "event study", "trade news", "monetary policy", "interest rate", "CPI", "PPI", "GDP"

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$$\Delta(e_i) = \beta_0 + \beta_1 \cdot PS_t + \epsilon_i \quad (1)$$

$$PS_{it} = \frac{A_{it} - E_{t-1}[A_{it}]}{\sigma_i} \quad (2)$$

- 807 estimates reported in 25 studies
- Definition: one standard deviation change in policy surprise effect on exchange rate returns outcome variable in %

Methodology and Data

Testing for publication bias

- Visual examination of the funnel plot
- Linear funnel-asymmetry tests with different specifications

$$\hat{\beta}_{ij} = \beta_0 + \beta_1 \cdot SE(\beta_{ij}) + \epsilon_{ij} \quad (3)$$

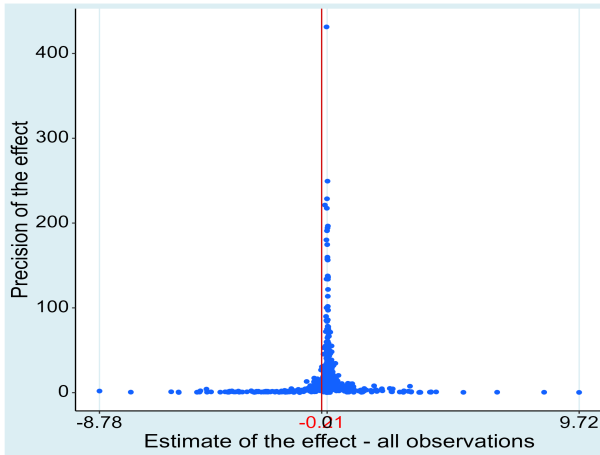
- Recently developed nonlinear techniques for publication bias correction: WAAP, Top10, selection and endogenous kink models.

Investigating the sources of heterogeneity

- 33 explanatory variables that can potentially affect the estimates
- Model averaging techniques to cover model uncertainty (BMA + FMA)

Results. Testing for publication bias

- The funnel plot shows an imbalance
- FA tests and alternative methods reveal suggestive evidence of publication selection

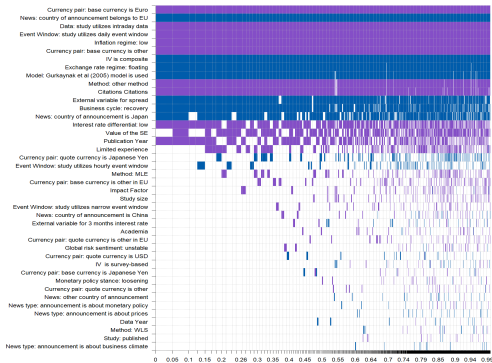


Results. Testing for publication bias

	OLS	FE	BE	RE	Weighted
Publication Bias	-0.324 **	0.266***	-0.569	0.173**	-0.454
(se)	(0.103)	(0.082)	(0.276)	(0.0079)	(0.232)
Beyond Bias	-0.083*	-0.312	-0.017	-0.392	0.012***
(constant)	(0.033)	(0.047)	(0.223)	(0.152)	(0.043)
Observations	807	807	807	807	807
	Prec-weighted	WAAP	Top10	Selection	Kink
Publication Bias	-0.004	-	-	0.002***	-0.004
(se)	(0.122)	-	-	(0.001)	(0.131)
Beyond Bias	0.004***	0.004**	0.005**	0.001**	0.004***
(constant)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)
Observations	807	807	807	807	807

Standard errors in parentheses.

Results. Investigating the sources of heterogeneity (BMA)



- Publication bias remains an issue but has a smaller impact on the results.
- Euro as a base currency, low inflation rate and data frequency are more influential in driving the reported effects
- Surprisingly, the type of macroeconomic announcements does not systematically influence the variation

BMA and FMA Results

Variable	BMA P. Mean	BMA SD	BMA PIP	FMA Coef	FMA SE	FMA p-val
Constant	-2.013	NA	1	-2.203	0.648	0.001
Value of the SE	0.139	0.121	0.643	0.197	0.093	0.034
Study size	0.012	0.06	0.062	0.031	0.217	0.888
Model: Gurkaynak et al. (2005) model is used	-0.817	0.211	0.988	-0.78	0.41	0.057
Method: WLS	0	0.021	0.014	0	0.03	0
Method: MLE	0.118	0.341	0.13	0.32	0.686	0.641
Method: other method	0.92	0.227	0.984	0.811	0.294	0.006
Currency pair: base currency is Euro	1.354	0.193	1	1.289	0.486	0.008
Currency pair: base currency is Japanese Yen	0.003	0.058	0.028	0	0.088	0
Currency pair: base currency is other	1.269	0.287	1	1.124	0.481	0.02
Currency pair: quote currency is USD	-0.005	0.035	0.031	0	0.16	0
Currency pair: quote currency is Japanese Yen	-0.053	0.128	0.183	-0.215	0.156	0.168
Currency pair: quote currency is other	0.003	0.027	0.023	0	0.133	0
News: country of announcement belongs to EU	-0.771	0.148	1	-0.757	0.2	0
News: country of announcement is China	0.008	0.074	0.05	0	0.099	0
News: country of announcement is Japan	-0.328	0.197	0.834	-0.294	0.261	0.259
Data: study utilizes intraday data	2.313	0.257	1	2.413	0.315	0
Study: published	0.001	0.023	0.014	0	0.254	0
Publication Year	0.592	0.513	0.631	0.516	0.731	0.48
Impact Factor	0.004	0.018	0.085	0.007	0.066	0.919
Academia	0.008	0.058	0.035	0	0.046	0
External variable for 3 months interest rate	0	0.014	0.042	0	0.084	0
External variable for spread	-0.417	0.129	0.966	-0.404	0.189	0.033
Monetary policy stance: loosening	0.004	0.042	0.027	0	0.213	0
Inflation regime: low	1.039	0.178	1	0.956	0.365	0.009
Business cycle: recovery	-0.371	0.155	0.925	-0.429	0.145	0.003
Exchange rate regime: floating	-1.669	0.343	0.998	-1.595	0.424	0
Interest rate differential: low	0.46	0.297	0.784	0.472	0.202	0.019
Global risk sentiment: unstable	0.004	0.036	0.032	0	0.289	0

Contribution

- Our research provides the first meta-analysis of event studies on the relation between macroeconomic announcements and forex market returns
- Publication bias was detected, but its influence is smaller compared to other factors
- The main drivers of heterogeneity are related to the currency pair characteristics and economic conditions
- The type of macroeconomic announcements does not systematically influence the variation in reported effects

Thank you for your time and attention.