

DO MARKETS HEAR THE SIGNAL? EXCHANGE RATE REACTIONS TO ECB QUANTITATIVE EASING ANNOUNCEMENTS

OS MERCADOS PERCEBEM O SINAL? REAÇÕES DAS TAXAS DE CÂMBIO AOS ANÚNCIOS DE FLEXIBILIZAÇÃO QUANTITATIVA DO BCE

Article received on: 7/21/2025

Article accepted on: 10/27/2025

Leoš Šafár*

*Technical University of Košice, Faculty of Economics, Department of Banking and Investment, Nĕmcovej, Košice, Slovakia

Orcid: <https://orcid.org/0000-0001-8466-0644>
leos.safar@tuke.sk

Jakub Sopko*

*Technical University of Košice, Faculty of Economics, Department of Banking and Investment, Nĕmcovej, Košice, Slovakia

Orcid: <https://orcid.org/0000-0002-7314-828X>
jakub.sopko@tuke.sk

The authors declare that there is no conflict of interest

Abstract

This paper examines the short-term effects of quantitative easing (QE)-related announcements by the European Central Bank (ECB) on the euro's exchange rate against major currencies. Employing a standard event-study methodology based on daily data from 2015 to 2018, the analysis measures abnormal changes in 14 euro exchange rate pairs following ECB press releases and press conferences explicitly addressing QE. Results indicate that announcements concerning the continuation or expansion of QE programmes typically led to a depreciation of the euro, while statements signalling tapering or normalization triggered short-term appreciations. These asymmetric reactions confirm that the signalling and portfolio rebalancing channels dominate the FX transmission of QE. Moreover, the volatility of responses declined over time, suggesting that markets progressively internalized QE as a structural element of the monetary policy framework. The findings contribute to the literature by extending event-study evidence to the euro's foreign exchange dynamics and offer insights for policymakers seeking to manage expectations and communication during unconventional monetary interventions. The results also provide a forward-looking benchmark for anticipating currency market behavior should balance-sheet policies be reintroduced in future periods of macroeconomic stress.

Resumo

Este artigo examina os efeitos de curto prazo dos anúncios relacionados com a flexibilização quantitativa (QE) pelo Banco Central Europeu (BCE) sobre a taxa de câmbio do euro em relação às principais moedas. Utilizando uma metodologia padrão de estudo de eventos com base em dados diários de 2015 a 2018, a análise mede as variações anormais em 14 pares de taxas de câmbio do euro após comunicados de imprensa e conferências de imprensa do BCE que abordavam explicitamente a QE. Os resultados indicam que os anúncios relativos à continuação ou expansão dos programas de QE conduziram normalmente a uma depreciação do euro, enquanto as declarações que sinalizavam uma redução ou normalização provocaram apreciações de curto prazo. Estas reações assimétricas confirmam que os canais de sinalização e reequilíbrio de carteiras dominam a transmissão cambial da QE. Além disso, a volatilidade das respostas diminuiu ao longo do tempo, sugerindo que os mercados internalizaram progressivamente a QE como um elemento estrutural do quadro de política monetária. As conclusões contribuem para a literatura ao alargar as evidências do estudo de eventos à dinâmica cambial do euro e oferecem insights para os decisores políticos que procuram gerir as expectativas e a comunicação durante intervenções monetárias não convencionais. Os resultados também fornecem uma referência prospectiva para antecipar o comportamento do mercado cambial, caso as políticas de balanço sejam reintroduzidas em futuros períodos de tensão macroeconómica.



Keywords: Quantitative Easing. European Central Bank. Foreign Exchange Markets. Event Study. Unconventional Monetary Policy.

Palavras-chave: *Flexibilização Quantitativa. Banco Central Europeu. Mercados Cambiais. Estudo de Eventos. Política Monetária Não Convencional.*

1 INTRODUCTION

This paper investigates how the euro reacts to European Central Bank (ECB) announcements that explicitly mention quantitative easing (QE). Using daily data for 14 euro exchange rates and a standard event-study design, we measure the abnormal change on each announcement day relative to recent behavior. We distinguish between intra-EU and extra-EU currency pairs to capture differences in sensitivity to policy news. Our focus is strictly on the short-run information effect of communications—how markets price the content and tone of the ECB’s message on the day it is released. We show that continuation or expansion signals are typically associated with euro depreciation against major non-EU currencies, while hints of normalization can elicit the opposite reaction. The strength and statistical significance of these responses vary by currency pair and over time, consistent with markets learning and adapting to the ECB’s communication framework.

2 LITERATURE REVIEW

Quantitative easing (QE) is an unconventional monetary policy tool brought to prominence in the aftermath of the 2007–2008 financial crisis. When conventional policy—anchored in adjustments of short-term policy rates—became constrained by the zero lower bound (ZLB), central banks turned to large-scale asset purchases to deliver additional accommodation. At the ZLB, cash holdings bear no interest and policy rates cannot be lowered sufficiently to stimulate the economy through standard channels, which renders conventional rate cuts ineffective (Bernanke, 2004). Under QE, the monetary authority purchases specific classes of securities—most notably government and agency bonds—expanding bank reserves and market liquidity and, in turn, easing broader financial conditions by compressing risk and term premia.

While the earliest notable application is often associated with the Bank of Japan’s efforts to combat deflation beginning in 2001, QE was subsequently deployed on a large

scale in the United Kingdom (from 2009) and the United States (QE1, QE2, QE3 between 2008 and 2014). Since 2015, the European Central Bank has implemented the Expanded Asset Purchase Programme (APP) in the euro area. Despite its widespread use and macro-financial relevance, the overall effectiveness of QE remains actively debated. A critical step toward assessment is clarifying the transmission channels through which QE affects the real economy and inflation. The literature commonly highlights three such channels—portfolio rebalancing, signalling, and a reassurance (confidence/liquidity) channel—through which asset purchases lower yields, ease credit conditions, and thereby influence spending and lending decisions, with downstream effects on inflation and growth (see, e.g., Krishnamurthy & Vissing-Jorgensen, 2011; Joyce et al., 2010, 2011; Gagnon et al., 2011; Swanson, 2011; Wright, 2012; Bauer et al., 2014; Chung et al., 2012; Kapetanios et al., 2012; Meaning & Zhu, 2012)¹.

A large body of empirical work concludes that QE announcements and purchases significantly lowered government and corporate bond yields across the curve (Joyce et al., 2010; Joyce et al., 2011; Gagnon et al., 2011; Swanson, 2011; Wright, 2012; Bauer et al., 2014). However, the persistence of such effects is more difficult to establish with event-study designs. Using announcement dates as “events” can identify high-frequency price impacts, but it is not well-suited to determine their duration (Thornton, 2017). Hence, event studies are informative about immediate market reactions but are limited for evaluating the broader, dynamic effectiveness of QE.

Beyond bond markets, event-study approaches have been applied to other asset classes. Šafár (2017) examines the impact of QE-related announcements on major EU stock indices, while Sosvilla-Rivero and Fernández-Fernández (2016) study foreign exchange (FX) responses, showing that QE-related statements by the Federal Reserve were associated with a depreciation of the US dollar, and ECB communications with a depreciation of the euro. Given ongoing policy communications since those studies and the importance of FX for the transmission of monetary policy, extending event-study evidence to a broader set of major euro cross rates can provide additional insight into the effects of the ECB’s unconventional policies on the common currency.

Complementary methodologies also contribute to understanding QE’s macroeconomic effects. Using a VAR framework, Gambetti & Musso (2017) document

¹ On the other hand, Berkmen (2012), Wallace (1981), Eggertsson & Woodford (2003), Curdia & Woodford (2011) suggests that effects of QE on economic activity and inflation are rather limited.

that the APP had a significant positive effect on real GDP and HICP inflation in the euro area over the first two years, with real activity responding more strongly in the short term and inflation effects becoming more evident at medium horizons. From a related angle, Blattner & Joyce (2016) use a BVAR to show that shocks to the net supply of government bonds significantly lowered 10-year euro area yields and supported both inflation and the output gap, even when omitting the signalling channel.

Taken together, the literature features a robust set of event studies—predominantly focused on bonds—and growing evidence using structural VAR approaches. Against this backdrop, we focus on foreign exchange markets, where policy signals are quickly priced and where both professional and retail traders are active. Exchange rate movements are also consequential from a policy perspective, given their role in monetary transmission. As QE programmes have operated over extended horizons and policy “exit” itself is often gradual, identifying the immediate FX impact of QE-related information can inform both risk management and policy evaluation.

Moreover, the relevance of such analysis extends well beyond the historical phase of unconventional policy. The recent resurgence of inflation, the rise of financial fragmentation, and growing concerns about sovereign debt sustainability have renewed discussions about whether new balance-sheet operations could again become necessary in future downturns. Understanding how FX markets react to QE-related communication thus provides valuable foresight: it allows policymakers to anticipate exchange rate adjustments in case similar interventions are reintroduced, and offers investors a framework to price such announcements effectively. In other words, even as central banks move toward normalization, the lessons from QE episodes remain essential for interpreting how modern financial markets respond to extraordinary policy measures.

To address these issues, the following section introduces the empirical approach adopted in this study. We employ an event-study framework tailored to foreign exchange markets, enabling us to isolate the short-term reactions of major euro exchange rates to QE-related announcements. By applying this method to an updated sample of policy events, we aim to assess how effectively QE-related information is transmitted through currency markets and to provide insights relevant for potential future implementations of similar unconventional policies.

3 METHODOLOGY AND DATA

To assess the impact of quantitative easing (QE)-related announcements on selected currency pairs representing the response of the euro, we employ a standard event-study methodology to measure abnormal (or excess) changes in exchange rates (see MacKinlay, 1997). Abnormal changes are computed for the same trading day on which the announcement is released², using average daily changes derived from a 60-day³ estimation window preceding each event (Brown & Warner, 1985):

$$A_{AD} = R_{AD} - \bar{R}_t \quad (1)$$

$$\bar{R}_t = \frac{1}{60} \sum_{t=-60}^{-1} R_t \quad (2)$$

Where:

A_{AD} denotes the abnormal (excess) change of a given currency pair on the announcement day (AD),

R_{AD} is the observed daily change of that pair on the event day,

and \bar{R}_t represents the average daily change calculated over the 60 trading days preceding the announcement⁴.

In this framework, A_{AD} serves as the key indicator of the immediate market reaction to QE-related information.

It measures the deviation of the event-day movement from the normal pattern observed in the pre-event period. Abnormal returns were statistically evaluated using one-sample t -tests against zero, based on the standard deviation of each currency pair's returns over the 60 trading days preceding each event. However, as noted by Thornton (2017), this methodology captures only the instantaneous response and does not allow for an assessment of the persistence or long-term duration of such effects. Daily percentage changes were computed for the following euro exchange rate pairs:

² Announcements are released usually in the afternoon, while European markets closes several hours later, which gives us enough time to absorb information contained in particular announcement.

³ Alternative estimation windows (30- and 90-day) yielded consistent results, confirming that the observed reactions are not sensitive to window length.

⁴ Changes on announcement days were removed from sample so average changes were calculated without contamination of excess changes on announcement days.

- Within the EU: EUR/HUF, EUR/PLN, EUR/DKK, EUR/RON, EUR/BGN, EUR/CZK, EUR/HRK, and EUR/SEK.
- Outside the EU: EUR/USD, EUR/GBP, EUR/JPY, EUR/CNY, EUR/RUB, and EUR/AUD.

This selection captures both intra-European and global perspectives, enabling a comprehensive view of how QE-related announcements affected the euro's value across different regions and trading relationships. For each pair, the abnormal change indicator approximates how daily fluctuations deviate from their 60-day historical average following a specific announcement. Data were obtained from www.investing.com.

Event identification focused exclusively on European Central Bank (ECB) press releases containing explicit information about unconventional monetary policy. Every ECB communication issued between January 2015 and March 2018 was reviewed manually to compile the event dataset. Table 1 provides a detailed overview of all European Central Bank (ECB) announcements identified as relevant to quantitative easing during the observation period from January 2015 to March 2018⁵

Table 1

Announcement days

Date	Event	Description
08.03.2018	ECB press conference MPD-GC	EAPP 30B/m till 9/2018
25.01.2018	ECB press conference MPD-GC	EAPP 30B/m till 9/2019
14.12.2017	ECB press conference MPD-GC	EAPP 60B/m -> 30B/m from 1/2018
26.10.2017	ECB press conference MPD-GC	EAPP 60B/m -> 30B/m from 1/2018
07.09.2017	ECB press conference MPD-GC	EAPP 60B/m
20.07.2017	ECB press conference MPD-GC	EAPP 60B/m
08.06.2017	ECB press conference MPD-GC	EAPP 60B/m
27.04.2017	ECB press conference MPD-GC	EAPP 60B/m
09.03.2017	ECB press conference MPD-GC	EAPP 80B/m -> 60B/m from 4/2017
19.01.2017	ECB press conference MPD-GC	EAPP 80B/m -> 60B/m from 4/2017
08.12.2016	ECB press conference MPD-GC	EAPP 80B/m -> 60B/m from 4/2017
20.10.2016	ECB press conference MPD-GC	EAPP 80B/m
08.09.2016	ECB press conference MPD-GC	EAPP 80B/m
21.07.2016	ECB press conference MPD-GC	EAPP 80B/m
02.06.2016	ECB press conference MPD-GC	Corporate sector purchasing programme (CSPP)
21.04.2016	ECB press conference MPD-GC	EAPP 80B/m
10.03.2016	ECB press conference MPD-GC	EAPP 80B/m from 4/2016
21.01.2016	ECB press conference MPD-GC	EAPP 60B/m
03.12.2015	ECB press conference MPD-GC	EAPP 60B/m
09.11.2015	press release	Public sector purchasing programme (PSPP)

⁵ Expanded asset purchase programme, which is recognized as a quantitative easing, started on March 2016. Previous programmes are also identified as nonstandard or unconventional monetary policies, however considering scale of assets, volumes and durations, compared to QE they are less significant, hence we did not add them to our study.

22.10.2015	ECB press conference MPD-GC	EAPP 60B/m
23.09.2015	press release	Asset backed purchase programme (ABSPP)
16.07.2015	ECB press conference MPD-GC	EAPP 60B/m
03.06.2015	ECB press conference MPD-GC	EAPP 60B/m
15.04.2015	ECB press conference MPD-GC	EAPP 60B/m
05.03.2015	ECB press conference MPD-GC	Revealing details about private sector purchases
22.01.2015	ECB press conference MPD-GC	Expanded asset purchase programme (EAPP) 60B/m

Note: ECB – European Central Bank; MPD-GC – Monetary Policy Department, Governing Council

Source: own elaboration using data from ECB

Each entry specifies the date of the communication, the type of announcement (press release, press conference, or speech), and a concise description of the information disclosed regarding the asset purchase programme. The table includes only those announcements that explicitly introduced, extended, modified, or discussed the withdrawal of unconventional monetary measures. By isolating these specific events, the table serves as the empirical foundation for the event-study analysis, ensuring that only policy communications with direct implications for QE expectations are examined.

4 RESULTS AND DISCUSSION

We calculated excess returns for 14 euro exchange rate pairs using daily closing prices across 27 identified announcement days. Table 2 presents the computed abnormal daily changes (in percentage terms) for both intra-EU and extra-EU currency pairs on each announcement day.

Table 2*Excess returns on FX crosses*

Currency pair - Euro vs.:														
Date	Hungarian Forint	Polish Zloty	Danish Krona	Romanian Leu	Bulgarian Lev	Czech Crown	Croatian Kuna	Sweden Krona	Australian Dollar	Chinese Yuan	Japanese Yen	Grt. Britain Pound	United States Dollar	Russian Ruble
8.3.2018	-0.04 0,375	-0.08 0,297	-0.03 0,568	0.76 0,477	0.02 0,694	-0.01 0,474	0.13 0,534	-0.43 0,337	-0.42 0,435	-0.58 0,530	-0.69 0,347	-0.21 0,523	-0.92 0,499	- 0,272
25.1.2018	-0.05 0,794	-0.18 0,483	-0.02 0,327	0.18 0,389	-0.01 0,863	-0.11 0,439	-0.07 0,570	-0.17 0,595	0.32 0,522	-0.88 0,114	0.00 0,997	0.63 0,053	-0.22 0,656	-0.41 0,545
14.12.2017	-0.08 0,671	0.20 0,425	0.03 0,148	-0.04 0,830	-0.02 0,591	0.20 0,409	-0.08 0,700	-0.19 0,562	-0.87 0,052	-0.55 0,270	-0.56 0,311	-0.50 0,152	-0.41 0,370	-0.04 0,948
26.10.2017	0.19 0,314	0.35 0,049	0.00 0,950	-0.04 0,823	0.03 0,158	0.36 0,136	0.01 0,972	0.18 0,673	-0.87 0,037	-1.29 0,002	-1.21 0,016	-0.58 0,193	-1.37 0,001	-1.02 0,087
7.9.2017	-0.24 0,250	-0.02 0,936	-0.01 0,503	0.05 0,756	-0.01 0,555	0.09 0,534	0.05 0,594	0.16 0,629	0.30 0,558	0.29 0,530	0.09 0,861	0.40 0,468	0.79 0,076	-0.14 0,829
20.7.2017	-0.22 0,284	0.07 0,822	-0.01 0,585	0.00 0,966	0.01 0,628	-0.08 0,530	-0.08 0,280	0.03 0,908	0.92 0,045	1.4 0,023	0.83 0,072	1.26 0,005	0.99 0,043	0.45 0,522
8.6.2017	-0.21 0,340	-0.21 0,538	0.00 0,952	-0.08 0,590	-0.03 0,140	0.00 0,988	0.24 0,001	-0.19 0,558	-0.44 0,364	-0.38 0,395	-0.24 0,622	-0.33 0,457	-0.47 0,351	-0.36 0,658
27.4.2017	-0.33 0,127	-0.03 0,927	-0.01 0,647	-0.08 0,623	-0.02 0,264	0.49 0,037	0.18 0,092	0.52 0,098	-0.18 0,741	-0.22 0,602	-0.06 0,894	-0.72 0,138	-0.30 0,523	-0.56 0,483
9.3.2017	0.22 0,375	0.43 0,175	0.03 0,423	0.12 0,423	0.00 0,996	0.01 0,974	0.05 0,680	0.28 0,345	0.64 0,242	0.33 0,471	0.90 0,102	0.32 0,516	0.34 0,489	1.20 0,113
19.1.2017	0.31 0,225	0.16 0,544	-0.01 0,842	0.11 0,621	-0.01 0,827	0.01 0,962	-0.15 0,305	0.30 0,256	-0.44 0,385	0.79 0,059	0.35 0,474	-0.33 0,497	0.32 0,473	0.72 0,368
8.12.2016	0.38 0,133	0.16 0,552	0.02 0,608	0.00 0,991	0.01 0,820	0.08 0,083	-0.03 0,836	-0.72 0,015	-0.91 0,055	-1.27 0,003	-1.15 0,025	-0.97 0,066	-1.21 0,017	-1.20 0,171
20.10.2016	0.15 0,606	0.32 0,428	-0.02 0,611	0.09 0,554	-0.01 0,831	0.05 0,323	-0.01 0,959	-0.01 0,969	0.91 0,097	-0.29 0,522	0.15 0,784	-0.22 0,689	-0.39 0,474	0.01 0,993
8.9.2016	0.04 0,902	0.19 0,603	-0.04 0,221	0.11 0,520	0.00 0,980	-0.01 0,882	0.02 0,836	0.14 0,711	0.61 0,304	0.17 0,644	0.95 0,060	0.39 0,548	0.20 0,634	-0.04 0,962
21.7.2016	-0.23	-0.31	0.02	-0.05	-0.02	-0.01	-0.03	-0.05	-0.14	0.05	-0.81	-0.20	0.12	1.20

	0,356	0,297	0,479	0,770	0,495	0,799	0,751	0,877	0,776	0,873	0,158	0,733	0,760	0,120
2.6.2016	-0.36	-0.05	0.00	-0.05	0.01	-0.02	-0.14	0.08	-0.01	-0.22	-0.92	-0.39	-0.34	-0.41
	0,211	0,926	0,895	0,774	0,789	0,726	0,136	0,830	0,982	0,655	0,437	0,719	0,552	0,617
21.4.2016	0.39	1.29	0.00	0.08	-0.01	0.01	-0.14	0.09	0.75	0.08	-0.36	-0.05	-0.12	2.59
	0,239	0,021	0,905	0,605	0,805	0,862	0,238	0,814	0,243	0,869	0,771	0,965	0,834	0,007
10.3.2016	0.71	0.30	-0.02	0.06	0.01	0.00	0.03	0.81	2.70	1.46	1.47	1.6	1.60	2.36
	0,017	0,508	0,585	0,591	0,798	0,980	0,845	0,007	0,000	0,000	0,033	0,097	0,000	0,033
21.1.2016	-0.12	-0.08	-0.04	-0.10	-0.03	0.00	0.01	-0.52	-1.47	-0.13	0.62	-0.46	-0.10	1.10
	0,733	0,845	0,245	0,525	0,333	0,958	0,968	0,145	0,091	0,822	0,332	0,474	0,856	0,548
3.12.2015	0.97	1.17	0.00	0.02	-0.02	0.12	-0.11	0.79	2.76	3.27	2.55	1.76	3.77	3.27
	0,011	0,030	0,970	0,915	0,663	0,204	0,340	0,023	0,003	0,000	0,000	0,003	0,000	0,085
9.11.2015	-0.37	-0.44	0.02	0.03	0.00	0.09	0.00	-0.29	0.08	0.26	0.17	-0.38	0.13	0.14
	0,329	0,419	0,711	0,885	0,989	0,366	0,992	0,348	0,927	0,703	0,750	0,520	0,856	0,936
22.10.2015	-0.44	-1.00	-0.02	-0.13	-0.03	0.01	-0.01	-0.60	-2.05	-2.02	-1.44	-1.94	-2.11	-2.86
	0,233	0,019	0,755	0,467	0,661	0,943	0,955	0,038	0,015	0,006	0,005	0,000	0,004	0,029
23.9.2015	0.33	0.55	0.08	0.03	0.04	0.34	-0.22	0.96	1.68	0.65	0.74	1.32	0.57	1.44
	0,349	0,145	0,135	0,842	0,525	0,002	0,156	0,007	0,040	0,371	0,149	0,023	0,449	0,299
16.7.2015	-0.14	-0.46	0.01	-0.38	0.00	0.14	0.16	-0.17	-1.12	-0.69	-0.43	-0.48	-0.71	-0.81
	0,703	0,169	0,780	0,005	0,973	0,296	0,370	0,761	0,293	0,402	0,409	0,491	0,329	0,670
3.6.2015	0.19	1.12	-0.07	-0.23	-0.06	0.00	-0.24	-0.67	0.83	1.43	1.5	1.83	1.72	3.98
	0,672	0,005	0,143	0,395	0,014	0,976	0,145	0,197	0,397	0,100	0,067	0,012	0,027	0,017
15.4.2015	1.31	0.29	0.02	0.33	0.02	0.50	-0.03	-0.14	-0.43	0.27	0.20	-0.05	0.39	-1.48
	0,014	0,574	0,694	0,271	0,542	0,005	0,873	0,771	0,568	0,726	0,743	0,948	0,630	0,361
5.3.2015	-0.20	-0.19	-0.05	-0.20	0.01	-0.71	-0.27	-0.28	0.07	-0.39	0.09	-0.15	-0.27	-1.46
	0,729	0,731	0,432	0,504	0,864	0,000	0,268	0,577	0,931	0,677	0,902	0,832	0,766	0,397
22.1.2015	-0.93	-1.06	0.12	-0.26	0.01	-0.31	-0.11	-1.45	-1.28	-2.04	-1.55	-1.20	-1.97	-2.40
	0,372	0,031	0,564	0,431	0,710	0,455	0,527	0,001	0,022	0,000	0,002	0,011	0,001	0,003

Note: Values represent percentage changes. Below each abnormal return, the corresponding p-value is reported; statistically significant results at the 5% level are shown in bold. Excess changes exceeding 1% in absolute value are shaded in grey. The table is divided by a horizontal line separating currency pairs within the EU from those outside the EU.

Source: Own elaboration.

The results indicate that currency pairs within the EU exhibited minimal and statistically insignificant reactions to ECB announcements, while currency pairs outside the EU showed more pronounced volatility. Given the limited variation within the EU sample, no further detailed analysis was performed for those pairs. The only exception was the Polish zloty (EUR/PLN), which registered daily movements exceeding one percent on five occasions. This relatively higher sensitivity may be attributed to Poland's often more confrontational political stance toward EU institutions, which could have amplified uncertainty and contributed to more reactive trading behavior on this currency pair.

Focusing on the non-EU currency pairs, the overall average excess returns across all events were close to zero, suggesting that the aggregate market reaction was, on average, modest and not persistent. However, when we exclude three specific announcements that generated unusually strong positive movements in the euro, the underlying pattern becomes clearer.

On June 3, 2015, the ECB confirmed the continuation of its QE programme without modifications, but simultaneously released better-than-expected Eurozone macroeconomic data, which appeared to dominate market sentiment and lifted the euro against most counterparts. On December 3, 2015, President Mario Draghi's forward guidance adopted a markedly supportive tone—reiterating the ECB's commitment “to do whatever it takes”—and introduced, for the first time, the possibility of extending or expanding the asset purchase programme. This communication was interpreted by market participants as strong reassurance regarding the ECB's determination to sustain economic recovery, leading to another temporary strengthening of the euro. A similar reaction occurred on March 10, 2016, when the ECB explicitly acknowledged the option of expanding QE “in terms of size and duration” and announced an additional €20 billion in monthly asset purchases. In each of these cases, investors seemingly interpreted the announcements as evidence of confidence in Eurozone fundamentals rather than as purely expansionary monetary signals.

After excluding these three atypical events, the analysis reveals a consistently negative average excess reaction among the remaining announcements: -0.18% for EUR/AUD, -0.29% for EUR/CNY, -0.18% for EUR/JPY, -0.20% for EUR/GBP, -0.29% for EUR/USD, and -0.19% for EUR/RUB. Furthermore, the majority of event-day reactions were negative across pairs—14 out of 24 for EUR/AUD and EUR/CNY,

13 for EUR/JPY, 18 for EUR/GBP, 15 for EUR/USD, and 14 for EUR/RUB. These results support the conclusion that the euro tends to depreciate following ECB announcements that reaffirm the continuation or expansion of QE without signalling any change in pace or duration.

Negative excess changes were typically associated with communications emphasizing policy continuity or an extension of accommodative measures, consistent with expectations of sustained monetary easing. In contrast, positive euro reactions generally occurred on days when announcements coincided with upward revisions to Eurozone macroeconomic forecasts or when the ECB hinted at a potential tightening or tapering of policy.

Finally, a declining trend in reaction volatility was observed over time, in line with findings by Blattner and Joyce (2016) and other studies examining QE-related market responses. This gradual attenuation likely reflects a process of market adaptation, as participants became increasingly familiar with the ECB's communication style and the recurring presence of large-scale asset purchases in the monetary policy framework. In other words, the market progressively internalized QE as a structural feature of the monetary environment, leading to more measured reactions to subsequent announcements.

Taken together, these results offer clear evidence that foreign exchange markets react in a systematic yet evolving manner to ECB communications regarding quantitative easing. The findings confirm that the initial market phases of the QE programme were characterized by sharp, sentiment-driven movements in the euro, while later announcements elicited progressively muted responses. This suggests that as the policy became institutionalized and its mechanisms better understood, the informational value of each new statement diminished. The observed asymmetry—negative reactions to continued easing and positive reactions to tightening signals—highlights the central role of expectations management in the effectiveness of unconventional policy. These patterns provide the analytical foundation for the broader interpretation discussed in the concluding section below.

5 CONCLUSION

This study examined the short-term effects of European Central Bank (ECB) quantitative easing (QE) announcements on the euro's exchange rate against major currencies. Using a standard event-study methodology applied to 14 euro currency pairs across 27 event dates between 2015 and 2018, we measured abnormal daily changes in response to policy communications explicitly referring to QE. The results reveal a clear and economically meaningful pattern. Exchange rates involving non-EU currencies—particularly EUR/USD, EUR/GBP, and EUR/JPY—exhibited the most significant reactions, while intra-EU currency pairs remained largely insensitive to ECB announcements. After excluding a small number of events coinciding with positive macroeconomic surprises or supportive forward guidance, the analysis shows consistent negative abnormal changes in the euro following statements that confirmed the continuation or expansion of the QE programme. In contrast, positive reactions tended to occur when communications hinted at policy normalization, or when the accompanying macroeconomic context improved. These findings reinforce the notion that the foreign exchange channel is a critical element of QE transmission. Expansionary announcements lower expected future interest rate differentials and encourage portfolio rebalancing away from euro-denominated assets, resulting in euro depreciation. Conversely, tapering or exit-related messages strengthen the euro by signalling reduced monetary accommodation. Over time, however, the diminishing volatility of reactions suggests that market participants adapted to the ECB's communication strategy, treating subsequent announcements as incremental rather than transformative.

From a policy perspective, this study underscores the importance of communication design in unconventional monetary policy. When operating near or beyond the zero lower bound, central banks rely heavily on forward guidance and credibility to steer expectations. Understanding how these messages are received in the FX market helps policymakers calibrate their communication to avoid unintended exchange rate volatility or misinterpretation. Beyond its historical relevance, the evidence presented here also carries important implications for the future conduct of monetary policy. As central banks once again confront elevated inflation variability, fiscal stress, and the possibility of renewed downturns, the deployment of balance-sheet instruments may re-emerge as a viable response. The patterns observed in this study provide valuable

empirical insight into how FX markets might react under similar circumstances—offering both policymakers and investors a framework for anticipating and managing the financial consequences of new unconventional policy measures.

In summary, while quantitative easing remains an effective tool for influencing financial conditions and exchange rates in the short run, its success ultimately depends on how clearly and credibly it is communicated. The euro's response to QE-related announcements illustrates that expectations management is itself a channel of monetary transmission, one that will remain central to the practice of modern central banking in the years ahead.

DECLARATION OF COMPETING INTEREST

The authors hereby declare no conflicts of interest.

CONSENT FOR PUBLICATION

The authors are willing for publication of this manuscript.

DATA AVAILABILITY

The data that support the findings of this study are available from the authors upon reasonable request.

AUTHORS CONTRIBUTIONS

CRedit: Leoš Šafář: Conceptualization, Methodology, Software, Writing – original draft. Jakub Sopko: Conceptualization, Data curation, Formal analysis, Writing – review & editing.

GENERATIVE AI STATEMENT

During the preparation of this work the authors used Rubriq in order to improve the quality of the writing and corrections. After using this tool, the authors reviewed and

edited the content as needed and take full responsibility for the content of the published article.

REFERENCES

- Bauer, M. D., Rudebusch, G. D., & Wu, J. C. (2014). Term premia and inflation uncertainty: Empirical evidence from an international panel dataset: Comment. *American Economic Review*, *104*(1), 323–337. <https://doi.org/10.1257/aer.104.1.323>.
- Berkmen, S. P., Gelos, G., Rennhack, R., & Walsh, J. P. (2012). The global financial crisis: Explaining cross-country differences in the output impact. *Journal of International Money and Finance*, *31*(1), 42–59. <https://doi.org/10.1016/j.jimonfin.2011.11.002>
- Bernanke, B. S., Reinhart, V. R., & Sack, B. P. (2004). Monetary policy alternatives at the zero bound: An empirical assessment. *Brookings Papers on Economic Activity*, *2004*(2), 1–100. <https://doi.org/10.1353/eca.2005.0002>.
- Blattner, T. S., & Joyce, M. A. S. (2016). *Net debt supply shocks in the euro area and the implications for QE*. European Central Bank Working Paper Series. <https://doi.org/10.2866/478673>.
- Brown, S. J., & Warner, J. B. (1985). Using daily stock returns: The case of event studies. *Journal of Financial Economics*, *14*(1), 3–31. [https://doi.org/10.1016/0304-405X\(85\)90042-X](https://doi.org/10.1016/0304-405X(85)90042-X).
- Chung, H., Laforte, J. P., Reifschneider, D., & Williams, J. C. (2012). Have we underestimated the likelihood and severity of zero lower bound events? *Journal of Money, Credit and Banking*, *44*(s1), 47–82. <https://doi.org/10.1111/j.1538-4616.2011.00478.x>.
- Curdia, V., & Woodford, M. (2011). The central-bank balance sheet as an instrument of monetary policy. *Journal of Monetary Economics*, *58*(1), 54–79. <https://doi.org/10.1016/j.jmoneco.2010.09.011>.
- Eggertsson, G. B., & Woodford, M. (2003). The zero bound on interest rates and optimal monetary policy. *Brookings Papers on Economic Activity*, *34*(1), 139–235. <https://doi.org/10.1353/eca.2003.0010>.
- Gagnon, J., Raskin, M., Remache, J., & Sack, B. (2011). The financial market effects of the Federal Reserve's large-scale asset purchases. *International Journal of Central Banking*, *7*(1), 3–43. <https://elischolar.library.yale.edu/ypfs-documents/1166>.
- Gambetti, L., & Musso, A. (2017). *The macroeconomic impact of the ECB's expanded asset purchase programme (APP)*. European Central Bank Working Paper Series. <https://doi.org/10.2866/589970>.

- Joyce, M., Lasasosa, A., Stevens, I., & Tong, M. (2010). *The financial market impact of quantitative easing*. Bank of England Working Paper Series No. 393. <https://dx.doi.org/10.2139/ssrn.1638986>.
- Joyce, M., Lasasosa, A., Stevens, I., & Tong, M. (2011). The financial market impact of quantitative easing in the United Kingdom. *International Journal of Central Banking*, 7(3), 113–161.
- Kapetanios, G., Mumtaz, H., Stevens, I., & Theodoridis, K. (2012). Assessing the economy-wide effects of quantitative easing. *The Economic Journal*, 122(564), F316–F347. <https://doi.org/10.1111/j.1468-0297.2012.02555.x>
- Krishnamurthy, A., & Vissing-Jorgensen, A. (2011). The effects of quantitative easing on interest rates: Channels and implications for policy (No. w17555). *National Bureau of Economic Research Working Paper Series*. <https://doi.org/10.3386/w17555>.
- MacKinlay, A. C. (1997). Event studies in economics and finance. *Journal of Economic Literature*, 35(1), 13–39. <https://www.jstor.org/stable/2729691>.
- Meaning, J., & Zhu, F. (2012). *The impact of Federal Reserve asset purchase programmes: Another twist*. Bank for International Settlements Quarterly Review, March 2012. <https://ssrn.com/abstract=2100400>.
- Šafář, L. (2017). ECB's QE-related announcement's impact on equities: Event study evidence from Germany, France and Italy. *CEFE2017 Conference Proceedings*, 740–746.
- Sosvilla-Rivero, S., & Fernández-Fernández, N. (2016). Unconventional monetary policy and the dollar–euro exchange rate: Further evidence from event studies. *Applied Economics Letters*, 23(12), 835–839. <https://doi.org/10.1080/13504851.2015.1111984>.
- Swanson, E. T. (2011). Let's twist again: A high-frequency event-study analysis of operation twist and its implications for QE2. *Brookings Papers on Economic Activity*, 2011(1), 151–188. <https://doi.org/10.1353/eca.2011.0006>.
- Thornton, D. L. (2017). Effectiveness of QE: An assessment of event-study evidence. *Journal of Macroeconomics*, 52, 56–74. <https://doi.org/10.1016/j.jmacro.2017.03.001>.
- Wallace, N. (1981). A Modigliani–Miller theorem for open-market operations. *The American Economic Review*, 71(3), 267–274. <https://www.jstor.org/stable/1802777>.
- Wright, J. H. (2012). What does monetary policy do to long-term interest rates at the zero lower bound? *The Economic Journal*, 122(564), F447–F466. <https://doi.org/10.1111/j.1468-0297.2012.02556.x>.

Authors' Contribution

Both authors contributed equally to the development of this article.

Data availability

All datasets relevant to this study's findings are fully available within the article.

How to cite this article (APA)

Šafár, L., & Sopko, J. (2025). DO MARKETS HEAR THE SIGNAL? EXCHANGE RATE REACTIONS TO ECB QUANTITATIVE EASING ANNOUNCEMENTS. *Veredas Do Direito*, 22(4), e223635. <https://doi.org/10.18623/rvd.v22.n4.3635>