

Flexible Asset Purchases and Repo Market Functioning

Adriana Grasso* & Andrea Poinelli**

*European Central Bank **European Central Bank, Deutsche Bundesbank and Goethe University Frankfurt

In a nutshell

Main Finding

- Flexibility in asset purchases (i.e. focussing on less special bonds) mitigates the negative effects of central bank bond buying programmes on repo market functioning.

Main Contributions

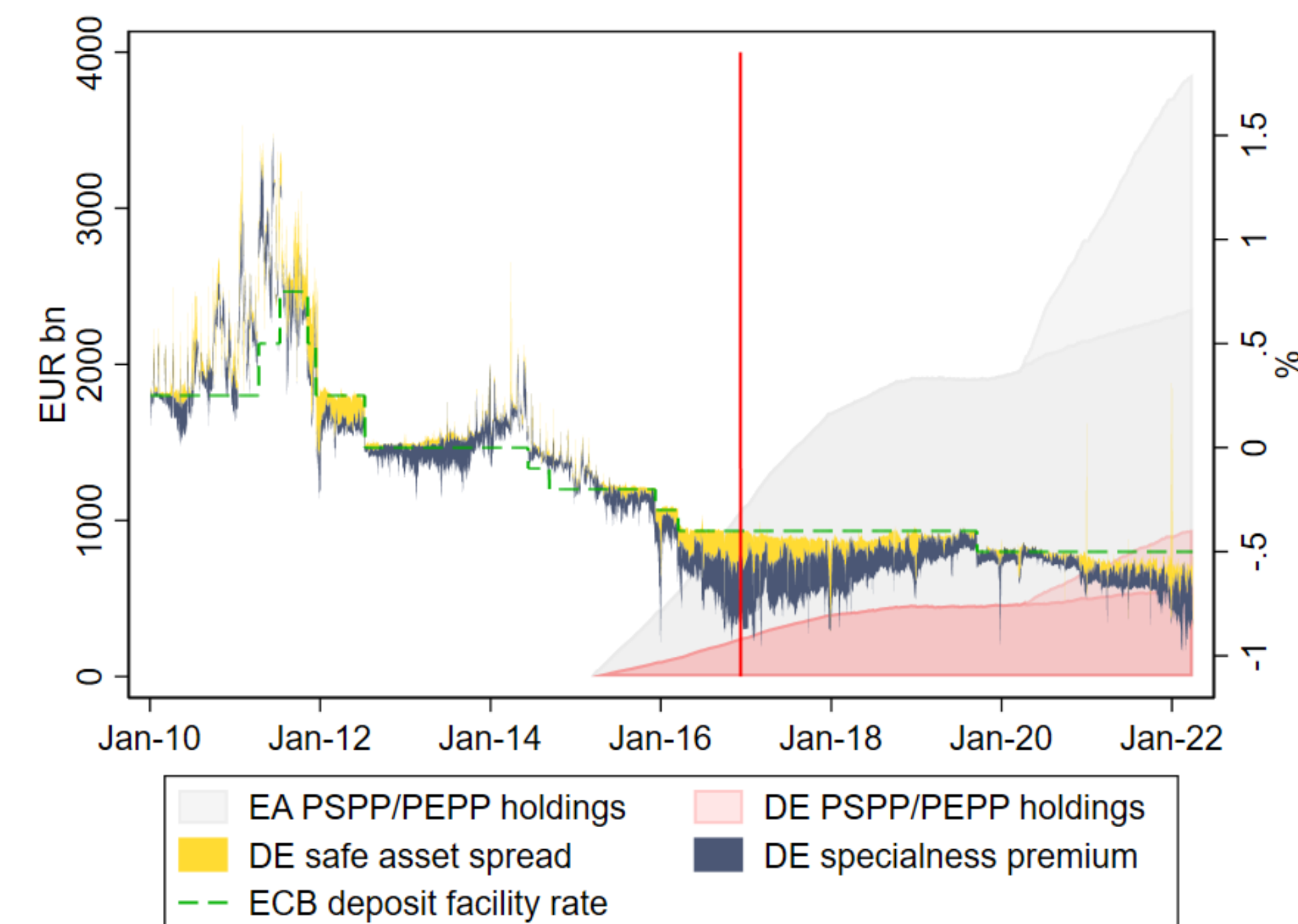
- First paper to quantify the causal impact of purchase flexibility on repo markets
- Validation of Securities Lending Facilities' (SLF) effectiveness

Background

- Repo markets facilitate short-term borrowing by using securities, often government bonds, as collateral.
- Central banks, through large-scale asset purchase programmes, accumulate significant volumes of government bonds.
- This leads to collateral scarcity, and increases their "specialness" premium = specific bonds become more expensive to borrow due to limited supply.

→ Arrata et al. (2020) find that central banks' purchases of EUR 150 ml decrease repo rates by 0.78 bps.

Figure 1: Evolution of German Repo Specialness and Eurosystem Balance Sheet



Data

- Daily dataset of gov't bonds compiled from:
 - Repo market (BrokerTec, MTS, Eurex), Asset purchases, Securities Lending Facility and Eligibility (ECB MOPDB)
 - Sample: 2015 – 2019 for DE, FR, ES, IT, BE, NL, AT

Key Variable

- Bond flexibility: Deviations from a neutral bond-purchase allocation, i.e. strategy where given a daily target for country c , each day t the central bank buys a bond i as a share of the bond's nominal value outstanding relative to the country c 's daily amount of eligible bonds.

$$BondFlex_{i,t} = \frac{NomValOut_{i,t} * PSPPtarget_{c,t}}{eligibleNomValOut_{c,t}} - \frac{PSPPpurchase_{i,t}}{actual allocation}$$

- Bond flexibility correlates with specialness in the repo market (Figure 2)

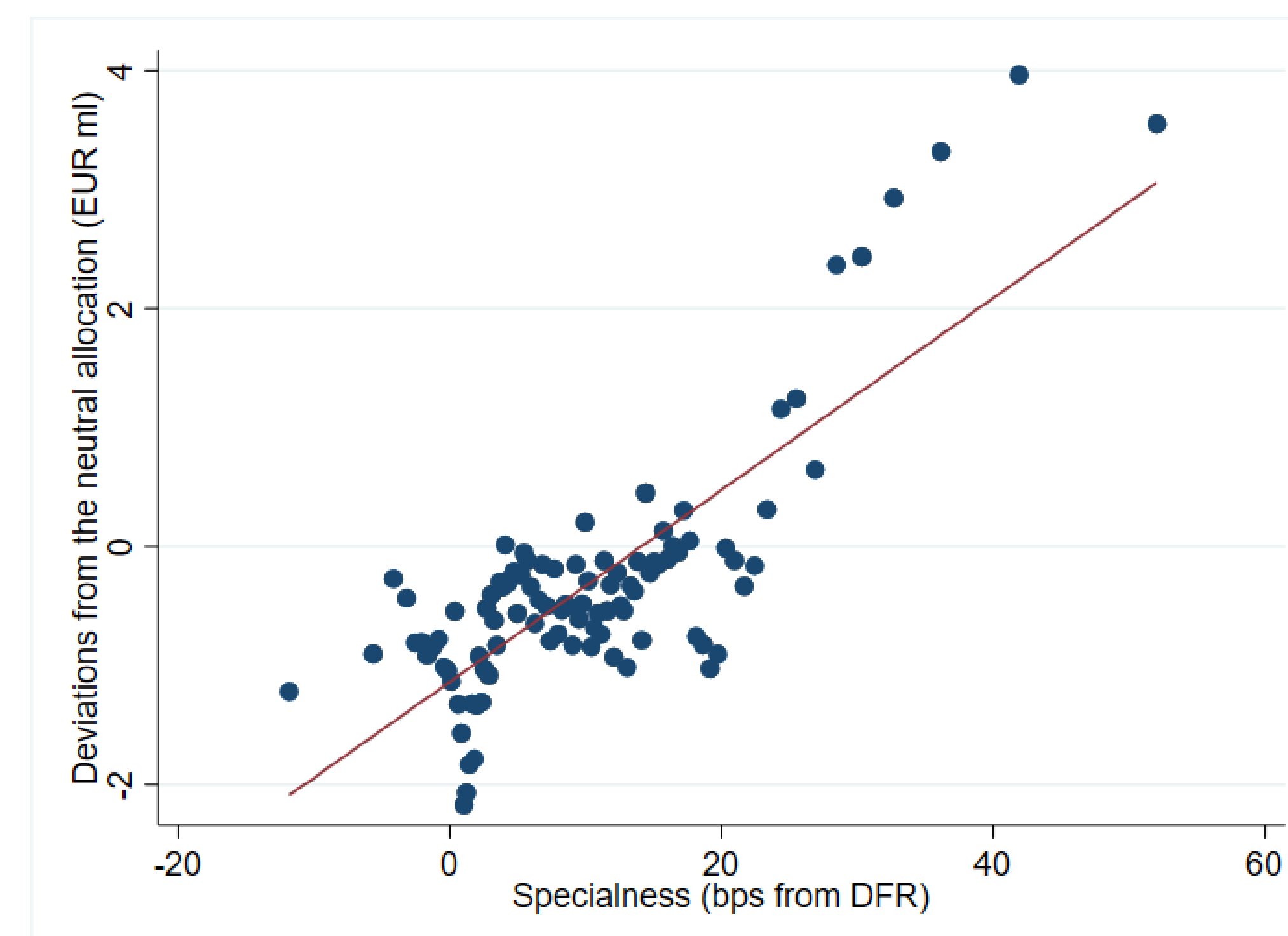
Model

$$\Delta RepoRate_{i,t} = \beta_0 + \beta_1 BondFlex_{i,t} + \beta_2 SLFvsCash + \beta_3 Controls_{i,t} + \alpha_i + \alpha_t + \epsilon_{i,t}$$

- $\Delta RepoRate_{i,t}$ is the daily difference of repo rates for Special Collateral repo transactions, α_i bond and α_t country-time fixed effects.
 - Controls: SLF vs securities, OMO collateral, dummy for cheapest-to-deliver, on-the-run, tapping.
- The exogeneity of the eligibility criteria of the PSPP - established prior to the programme's initiation and aimed at the bond market – ensures the orthogonality of our measure to repo market's developments and a causal identification of flexibility.
- Importantly, deviations from the market-neutral allocations are computed every day and for every bond, subject to the bond's compliance with PSPP's eligibility criteria (Figure 3)
- We expect $\beta_1 > 0$, i.e. the use of flexibility at bond level has a positive impact on repo rates.

Results

Figure 2: Correlation between specialness and bond flexibility



Notes: Variables observations are binned for easier visualization and interpretation. The sample period runs from March 2015 to January 2019. We also exclude outlier observations such as year-ends and period of heightened volatility. A higher value of flexibility means that asset managers purchase less than the neutral allocation prescribes.

- A deviation of EUR 100 ml from the neutral allocation - purchase less than the neutral allocation prescribes - increases repo rates up to 0.41 bps.

Figure 3: Identification strategy

ISIN	DATE	Δ REPO RATE	PSPP ELIGIBLE	PSPP PURCHASE	PSPP NEUTRAL ALLOCATION	FLEXIBILITY
DE000001	01/01/2022	-0.12	NO	-	-	-
DE000001	02/01/2022	-0.15	NO	-	-	-
DE000001	03/01/2022	+0.24	YES	7	9	+2
DE000001	04/01/2022	+0.13	NO	-	-	-
DE000001	05/01/2022	+0.27	YES	1	4	+3
DE000001	06/01/2022	-0.32	YES	0	3	+3
DE000001	07/01/2022	-0.45	YES	0	4	+4
DE000001	08/01/2022	+0.11	NO	-	-	-
DE000001	09/01/2022	-0.47	YES	5	3	-2
DE000001	10/01/2022	-0.03	NO	-	-	-
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Notes: Bond flexibility is estimated every day and for every eligible bond. Our identification accounts for both observed deviations from the neutral allocation (bond is eligible and purchased, green rows) and unobserved deviations (bond is eligible but not purchased, yellow rows).

Discussion

- The use of flexibility in purchasing less scarce bonds allowed central bank portfolio managers to limit distortions in the repo market such as specialness.
- The SLF played a crucial role in offsetting the impact of asset purchases on bond availability, further stabilizing the repo market.

Conclusions

- Policy Implications: Flexible implementation of central bank asset purchase programs and the strategic use of securities lending can mitigate the unintended consequences of bond scarcity in the repo market
- Future Applications: These findings suggest that the design of balance sheet policies should prioritize flexibility and securities lending to avoid market disruptions during large-scale asset purchases.

References

Arrata, W., Nguyen, B., Rahmouni-Rousseau, I., and Vari, M. (2020). The scarcity effect of QE on repo rates: Evidence from the euro area. *Journal of Financial Economics*, 137(3):837–856.

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Contact: andrea.poinelli@ecb.europa.eu and adriana.grasso@ecb.europa.eu