Monetary Policy Disconnect

Presentation AEA 2021

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Motivation

*“...there is a risk that, under the current framework, some short-term market rates would **not respond fully** to changes in our key interest rates or, even if they would, that a continued dispersion of short-term rates would **adversely impact** the transmission of our monetary policy stance."*

—Benoît Cœuré in May 2018

Paper in a nutshell

Two aspects of the central bank framework designed to support monetary policy can disconnect the monetary policy **transmission**:

- Banks' access to central bank deposits.
- Quantitative Easing (QE).

We **show** that....

- Lending rates of banks with access to the deposit facility are less responsive to the monetary policy rate.
- Repo rates secured by assets eligible for QE programs are more disconnected from the policy rate.
- Both effects create rate dispersion and add to one another in weakening the monetary policy transmission.

Contribution

Literature on the **effectiveness of monetary policy**.

- Duffie and Krishnamurthy, 2016, and Drechsler, Savov, and Schnabl, 2017, analyze the interest-rate pass-through in the United States.
- On a macro-wide level, Avouyi-Dovi, Horny, and Sevestre, 2017, find a slowdown of the interest rates transmission mechanism, which Al-Eyd and Berkmen, 2013, associate with segmentation along country lines.

Literature on **short-term funding markets**

- Arrata et al., 2020, and Corradin and Maddaloni, 2020, investigate the effects of QE purchases on *special* repo rates. Kraenzlin and Nellen, 2015, analyze segmentation effects in the Swiss unsecured money market.
- Cross-sectional dispersion in repo rates in Europe (e.g., Mancini, Ranaldo, and Wrampelmeyer, 2016; Boissel et al., 2017; Ranaldo, Schaffner, and Vasios, 2020; Ballensiefen and Ranaldo, 2020) and the United States (e.g., Bartolini et al., 2011; Gorton and Metrick, 2012; Copeland, Martin, and Walker, 2014; Krishnamurthy, Nagel, and Orlov, 2014; Infante, 2020).

The monetary policy framework

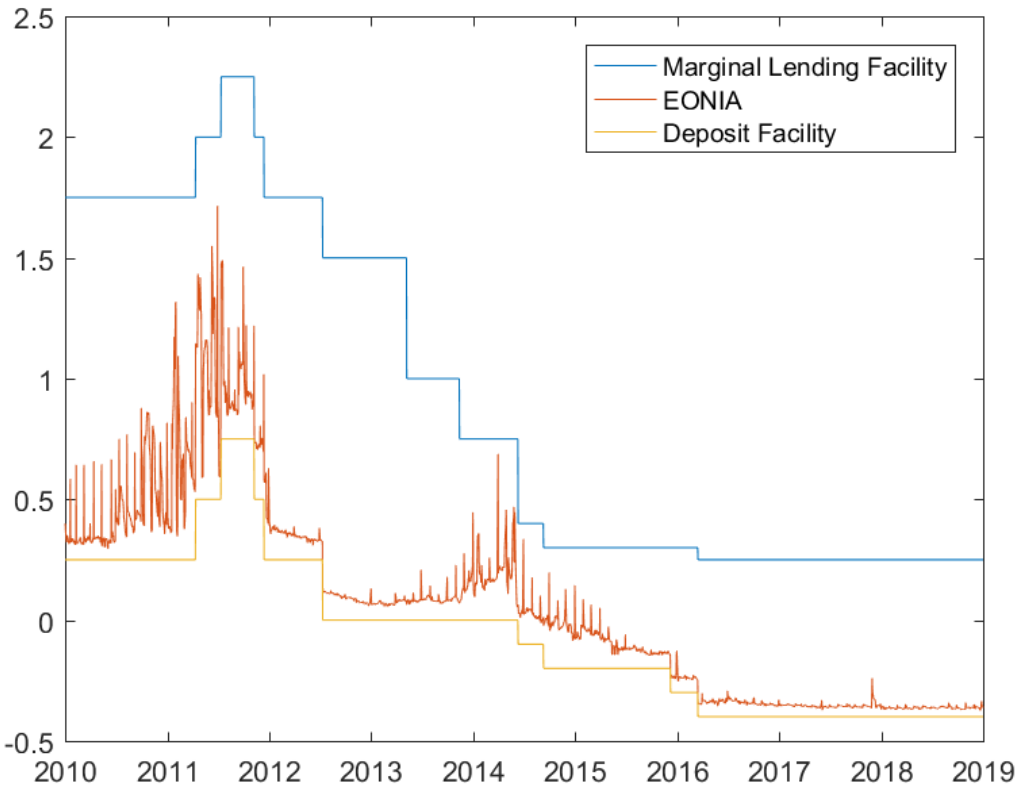

Figure: Rate corridor

The importance of the repo market

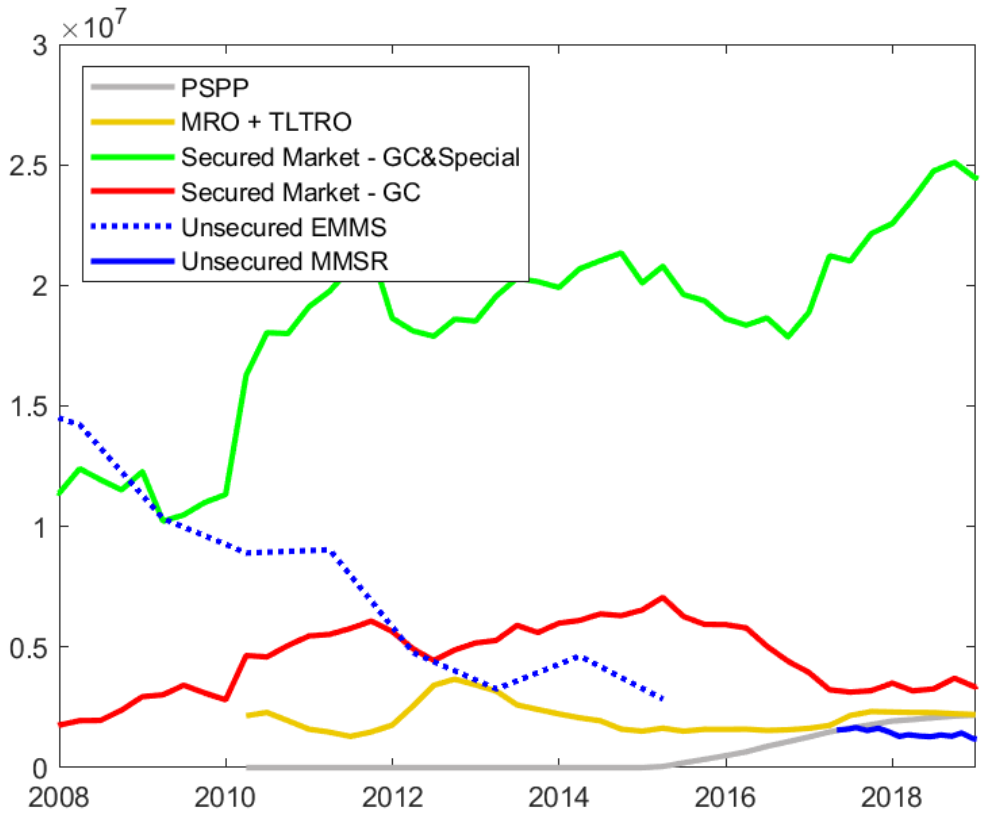

Figure: Different market turnovers (in euro million)

ECB access

Only euro area banks can **access** the ECB deposit facility.

- Deposit facility represents a **safe and convenient** way to store liquidity.
- It is **more convenient** when the repo rate falls below the deposit facility rate.
- Importance of the deposit rate and access to the central bank's facilities is stressed in the **theoretical** (Cúrdia and Woodford, 2011; Bech and Monnet, 2016; Williamson, 2019) and **empirical** (Bech and Klee, 2011; Kraenzlin and Nellen, 2015) literature.

Hypothesis I

Banks with (without) access to the ECB deposit facility lend at repo rates less (more) aligned to the monetary policy target rate.

Theoretical Framework: Link, Dispersion: Link, Volume and Spread: Link

Access/nonaccess banks

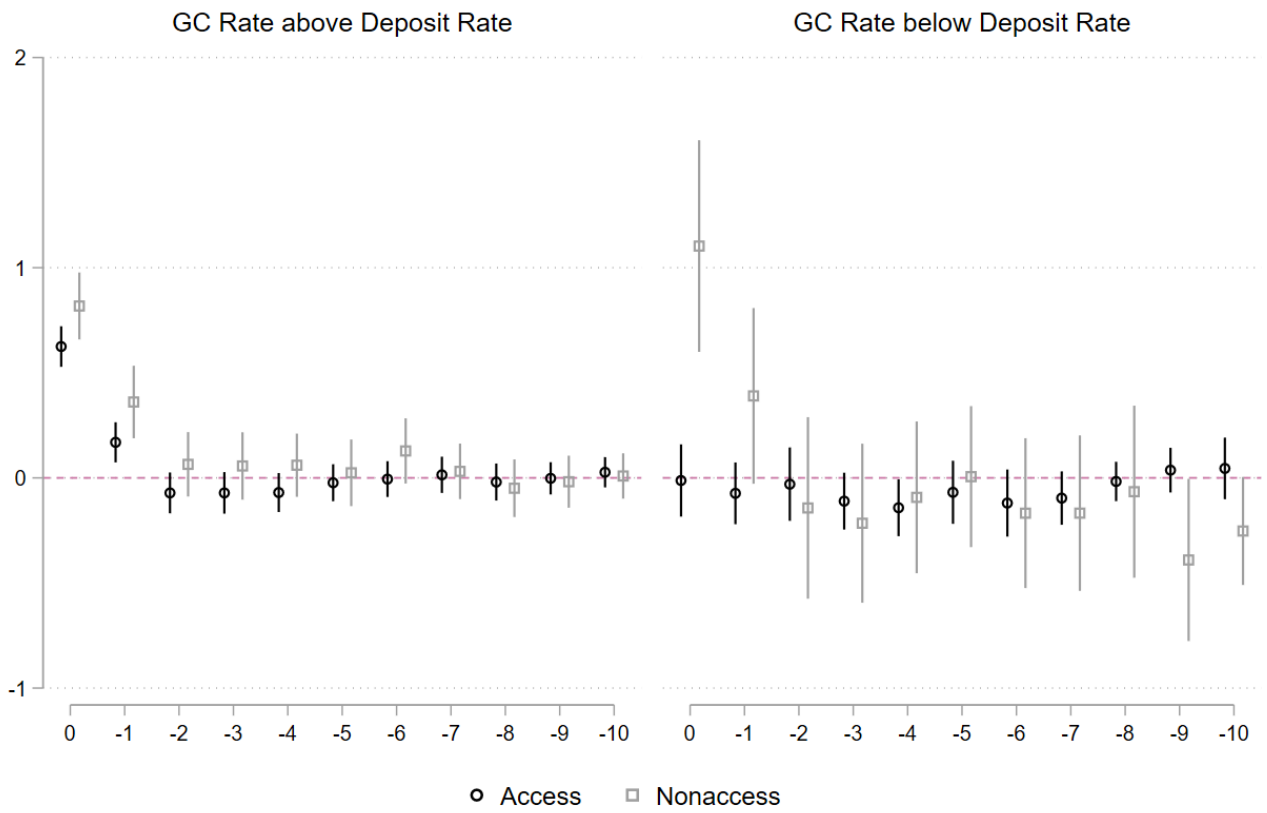

Figure: Impulse response after changes in policy rate

Regression results

Table: ECB access - German collateral

	(1) $\Delta repo^{GC}$ ON/TN b/t	(2) $\Delta repo^{GC}$ ON/TN b/t	(3) $\Delta repo^{GC}$ ON/TN b/t
$\Delta PolRate$	0.539^{***} (15.700)	0.717^{***} (10.745)	0.675^{***} (8.781)
D^{Dep}	-0.046^{**} (-2.265)		-0.047^{**} (-2.338)
$\Delta PolRate \cdot D^{Dep}$	-0.176^{**} (-2.216)		0.265^{**} (2.082)
D^{Access}		-0.001 (-0.071)	-0.000 (-0.035)
$\Delta PolRate \cdot D^{Access}$		-0.264^{***} (-3.549)	-0.177^{**} (-2.100)
$\Delta PolRate \cdot D^{Access} \cdot D^{Dep}$			-0.719^{***} (-4.970)
$\Delta repo^{GC}$ lagged	-0.332^{***} (-14.230)	-0.332^{***} (-14.147)	-0.332^{***} (-14.151)
N	10,001	10,001	10,001
R^2	0.210	0.213	0.220

All regressions include basket-month-term fixed effects and heteroscedasticity-robust standard errors.

Robustness checks: Core European countries, All European countries, different fixed effects, different standard errors, other monetary policy target rates.

Collateral eligibility

Assets that **qualify for the QE asset purchase program**.

- Comparing repo lending rates of **eligible and noneligible assets**.
- Employ the provisions of the Public Sector Purchase Program (**PSPP**) since the start of QE and retrospectively to compare time trends between (hypothetically) eligible and noneligible assets (difference-in-difference estimation setting).
- Role of central bank purchases is highlighted in the **theoretical** (Gertler and Karadi, 2013; Araújo, Schommer, and Woodford, 2015; Piquard and Salakhova, 2019) and **empirical** (Koijen et al., 2017; Avdjiev, Everett, and Shin, 2019; Schlepper et al., 2017; Arrata et al., 2020; Corradin and Maddaloni, 2020) literature.

Hypothesis II

Repos whose collateral is (not) eligible for QE programs is more (less) misaligned from the monetary policy rate. Observing similar reactions of both types of collateral before QE would imply common trends and allow us to interpret the results as causal.

Theoretical framework: Link, Dispersion measure: Link Volume and Spread: Link

Regression results

Table: QE eligibility - German collateral

	(1) $\Delta repo^{Special}$ TN/SN b/t	(2) $\Delta repo^{Special}$ TN/SN b/t	(3) $\Delta repo^{Special}$ TN/SN b/t
$\Delta PolRate$	0.106^{***} (19.644)	0.098^{***} (12.937)	0.109^{***} (13.130)
D^{QE}	-0.016 (-1.462)		-0.016 (-1.434)
$\Delta PolRate \cdot D^{QE}$	-0.150^{***} (-15.837)		-0.120^{***} (-8.154)
$D^{Eligible}$		0.004 (0.454)	0.004 (0.440)
$\Delta PolRate \cdot D^{Eligible}$		0.006 (0.537)	-0.005 (-0.463)
$\Delta PolRate \cdot D^{Eligible} \cdot D^{QE}$		-0.172^{***} (-14.035)	-0.052^{***} (-2.737)
$\Delta repo^{Special}$ lagged	-0.364^{***} (-20.719)	-0.364^{***} (-20.716)	-0.364^{***} (-20.719)
N	301,608	301,608	301,608
R^2	0.119	0.119	0.119

All regressions include ISIN-month-term fixed effects and heteroscedasticity-robust standard errors.

Robustness checks: Core European countries, All European countries, different fixed effects, different standard errors, other monetary policy target rates.

Extensions

Our results do not rely on the choice of the EONIA as the monetary policy target rate. We also employ:

- EONIA-€STR combination with €STR rates beginning in March 2017.
- Overnight euro LIBOR.
- Overnight point of the OIS-implied zero curve and the EURIBOR-implied zero curve.
- One-week OIS rate.
- Rate on the ECB GC Pooling Basket.

We consider the **joint effects** of the two features of the central bank framework:

- GC baskets with a higher share of collateral assets that are eligible for asset purchase are less sensitive to changes in the monetary policy rate. Results
- Access banks also react less sensitively in the special market after controlling for asset eligibility. Results

Conclusion & Policy Implications

Although designed to support monetary policy, **two crucial aspects of the central bank framework** have led to a **disconnect of repo rates from the monetary policy rate**.

The idea that unconventional policies "safeguard the transmission of our monetary policy," as pointed out by ECB President Christine Lagarde to justify the new Pandemic Emergency Purchase Programme (PEPP), may be short-sighted.

At the heart of the **CRR amendments** "to facilitate bank lending in the Union amid COVID-19", there is the exclusion of central bank reserves from the calculation of the leverage ratio. This policy could encourage additional amounts to be deposited creating more segmentation and the opposite effect to its aim.

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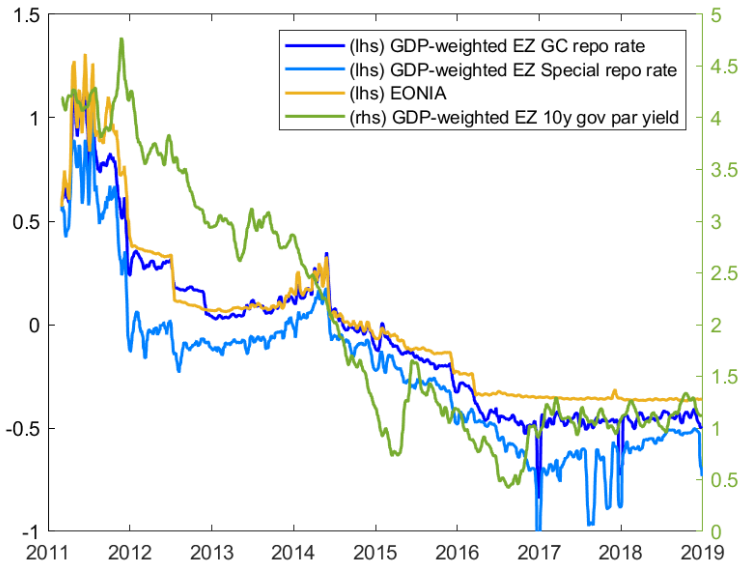
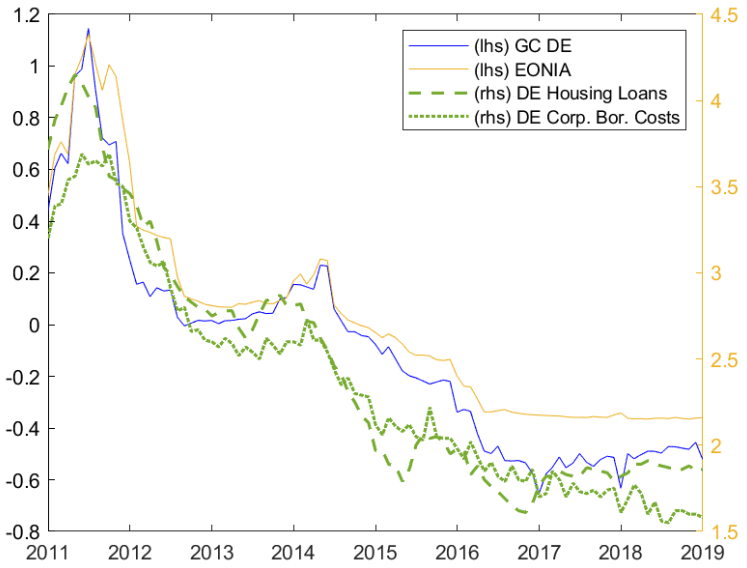
Appendix: Interest rate co-movements



(a) Eurozone government bond rates



(b) German real sector lending rates

Appendix: Monetary policy pass-through to lending rates

Table 1. Repo dispersion and the pass-through to lending rates

	(1)	(2)
	Non-Fin. Corporate Δr^L b/t	New Housing Δr^L b/t
$\Delta PolRate$	0.470***	0.729***
	(5.335)	(8.118)
$\Delta PolRate \cdot D^{Dispersion}$	-0.351***	-0.444***
	(-2.739)	(-3.379)
$\Delta PolRate \cdot PSPP^{Volume}$	-0.034*	-0.042**
	(-1.651)	(-2.066)
N	991	907
adj. R^2	0.073	0.089

The table reports the regression results examining the pass-through of changes in the monetary policy target rate into lending rates faced by corporate borrowers and private households. The dependent variable is the change of a given lending rate Δr^L. Non-financial corporate borrowing rates refer to the annualized borrowing costs of non-financial firms for new loans, while new housing rates refer to bank interest rates on new loans to households for house purchases with an initial rate fixation period of between one and five years. Both lending rates are available from the ECB's monetary financial institutions (MFI) interest rate statistics. $\Delta PolRate$ denotes the change in the policy rate. $D^{Dispersion}$ equals 1 if a country's dispersion in GC rates between access and nonaccess banks is above its mean. $PSPP^{Volume}$ denotes the monthly purchasing volumes of the PSPP in euro bn. ***, **, and * represent significance at a 1, 5, and 10% level, respectively; t-statistics are in parentheses. All regressions include country-year fixed effects and heteroskedastic-robust standard errors. Data are at a monthly frequency for all European countries for the time-period 2010–2018.

Appendix: Dispersion measure of GC repo rates

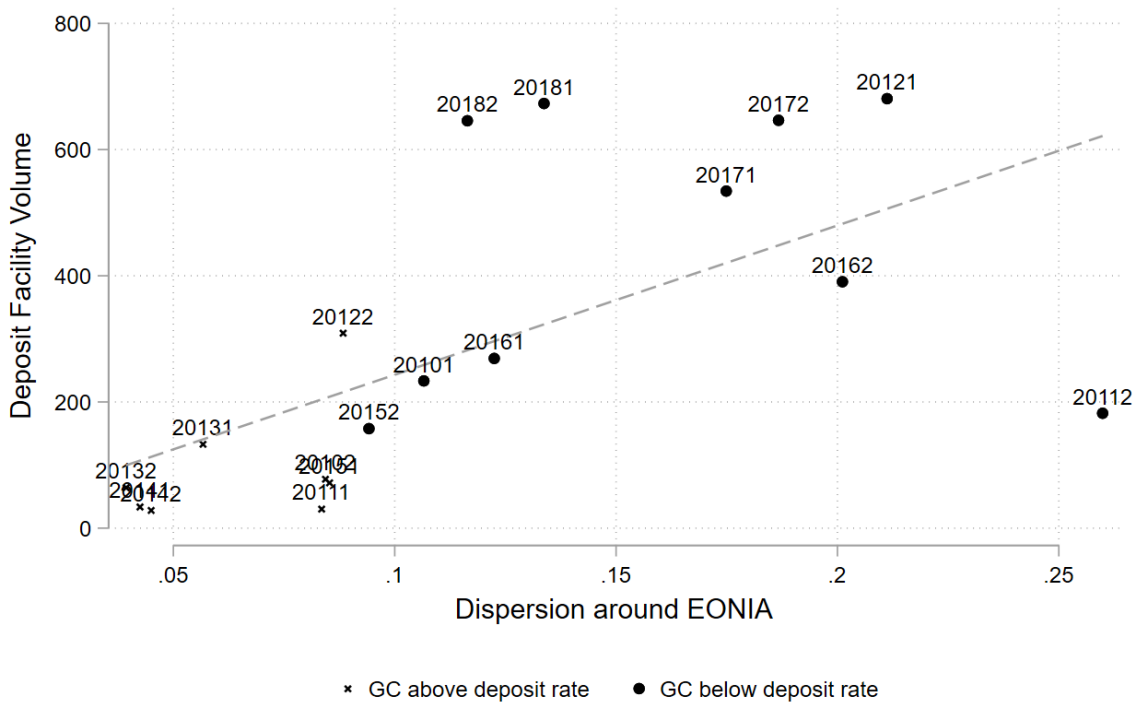


Figure: Dispersion of access and nonaccess rates

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Appendix: Dispersion measure of special repo rates

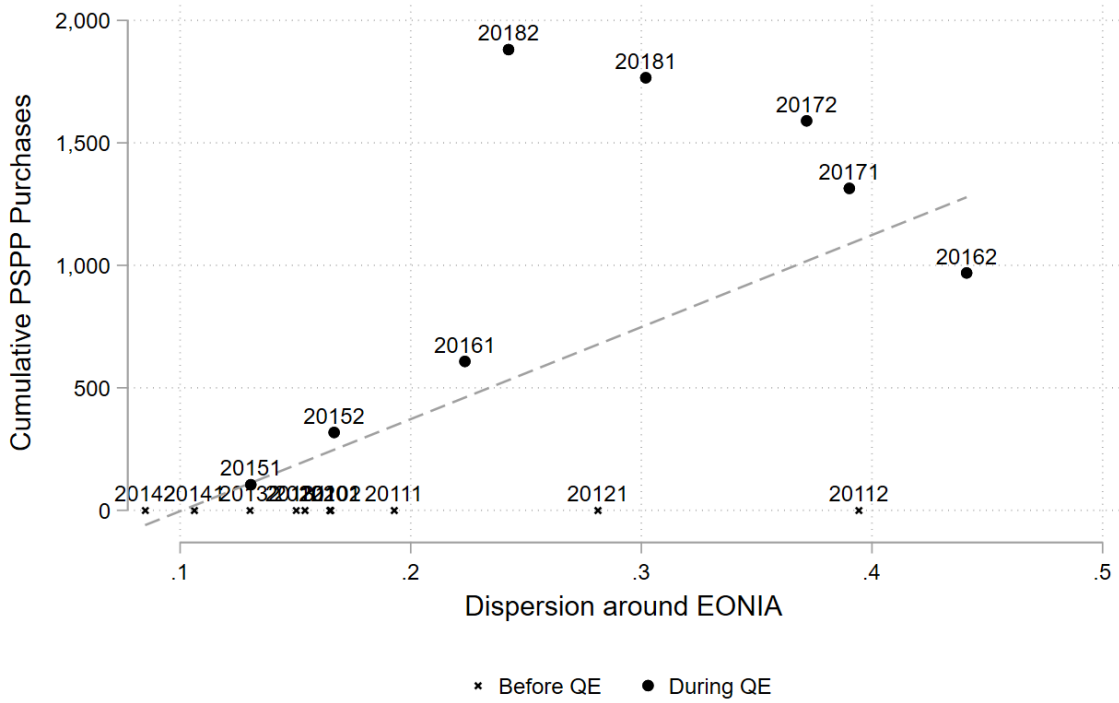

Figure: Dispersion of eligible and noneligible rates

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Appendix: Access/nonaccess model

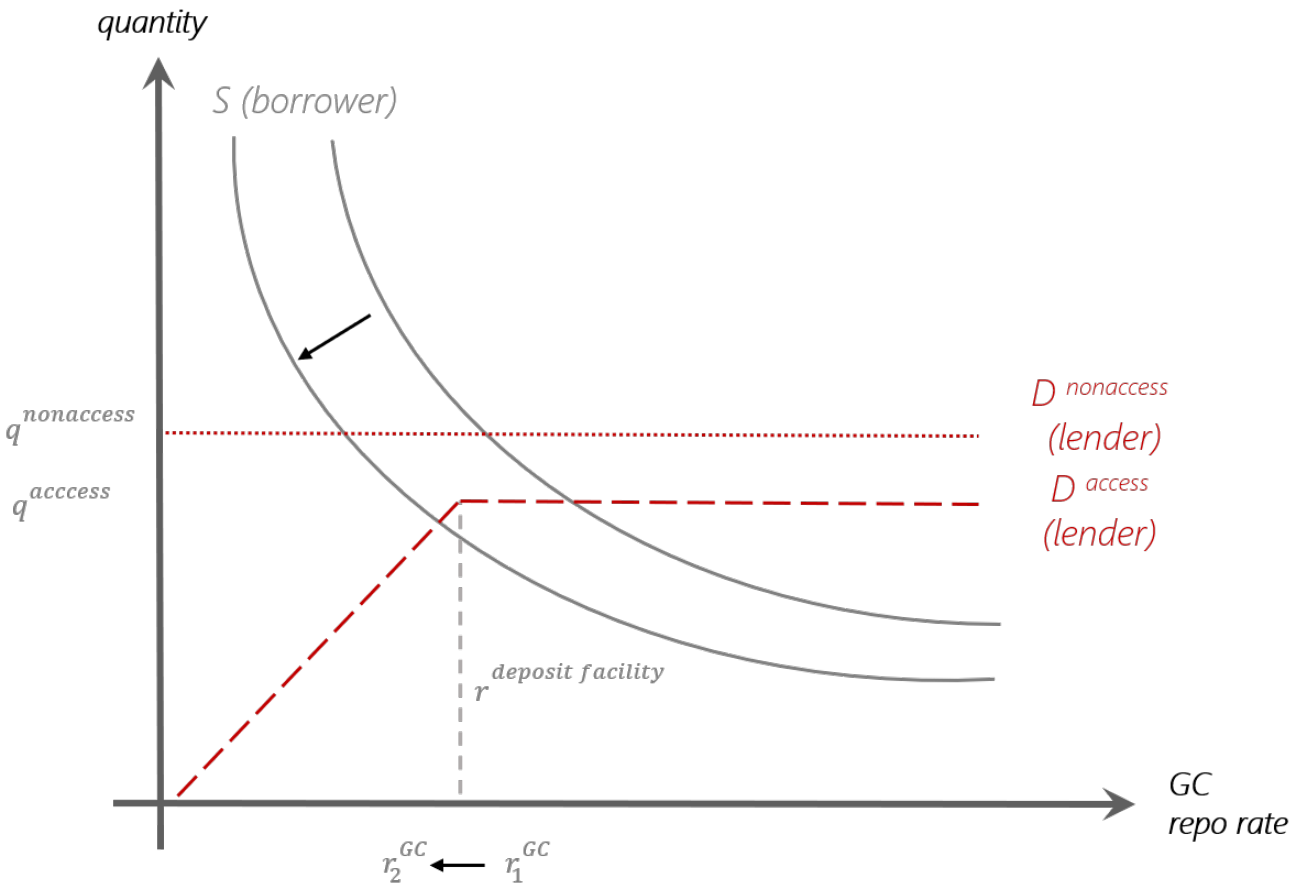

Figure: Impact of supply shock in the GC market

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Appendix: Eligible/noneligible model

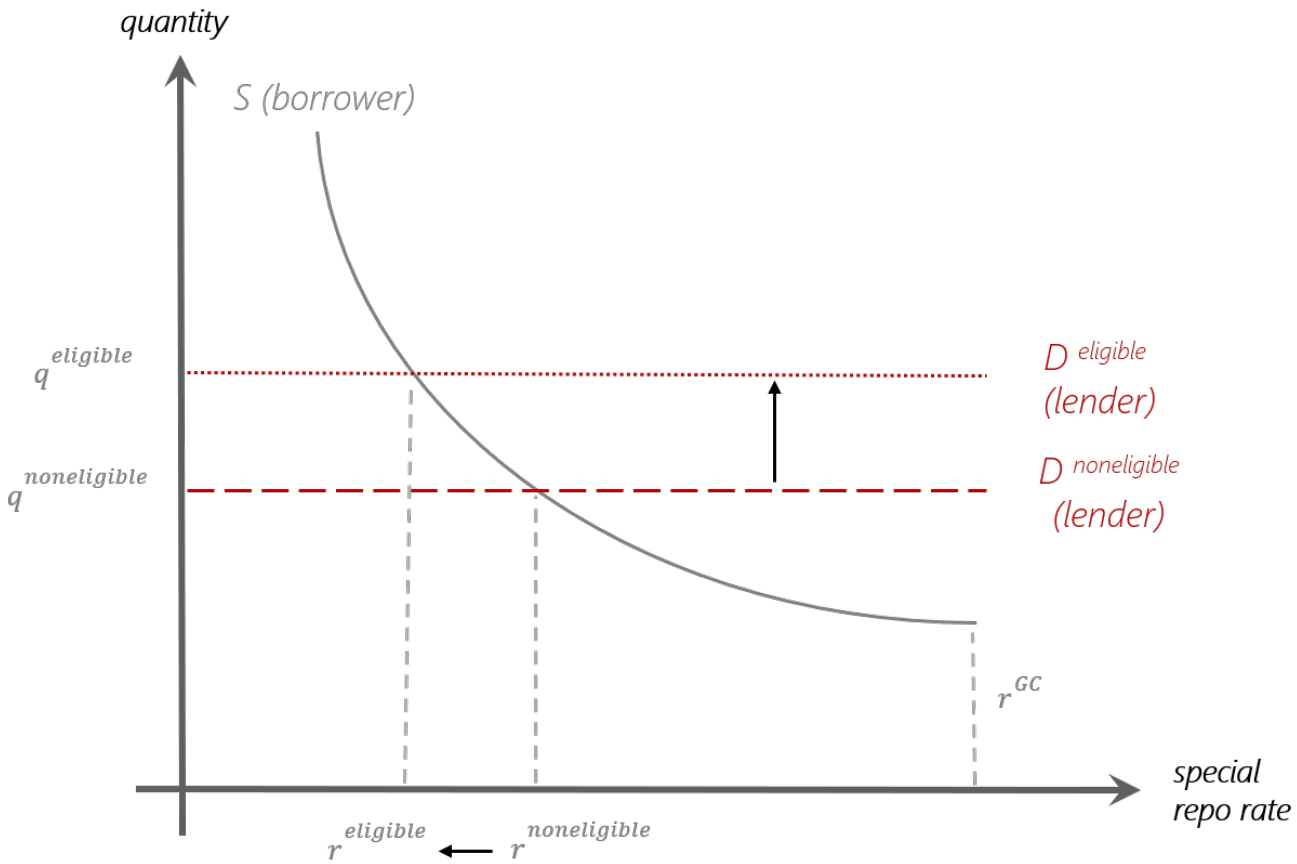

Figure: Impact of demand shock in the special repo market

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Appendix: Access/nonaccess by term type

Table 3.6. ECB access: Germany

	(1) $\Delta repo^{GC}$ ON b/t	(2) $\Delta repo^{GC}$ TN b/t	(3) $\Delta repo^{GC}$ ON/TN b/t	(4) $\Delta repo^{GC}$ ON b/t	(5) $\Delta repo^{GC}$ TN b/t	(6) $\Delta repo^{GC}$ ON/TN b/t	(7) $\Delta repo^{GC}$ ON b/t	(8) $\Delta repo^{GC}$ TN b/t	(9) $\Delta repo^{GC}$ ON/TN b/t
$\Delta PolRate$	0.742***	0.456***	0.539***	0.646***	0.760***	0.717***	0.601***	0.719***	0.675***
	(10.017)	(11.476)	(15.700)	(6.547)	(8.970)	(10.745)	(5.285)	(7.428)	(8.781)
D^{Dep}	−0.042	−0.045*	−0.046**				−0.043	−0.047**	−0.047**
	(−1.102)	(−1.890)	(−2.265)				(−1.136)	(−1.986)	(−2.338)
$\Delta PolRate \cdot D^{Dep}$	−0.130	−0.210**	−0.176**				0.238	0.287	0.265**
	(−0.891)	(−2.229)	(−2.216)				(1.477)	(1.614)	(2.082)
D^{Access}				−0.003	0.001	−0.001	−0.001	0.001	−0.000
				(−0.142)	(0.067)	(−0.071)	(−0.080)	(0.074)	(−0.035)
$\Delta PolRate \cdot D^{Access}$				0.114	−0.424***	−0.264***	0.194	−0.337***	−0.177***
				(0.912)	(−4.685)	(−3.549)	(1.387)	(−3.274)	(−2.100)
$\Delta PolRate \cdot D^{Access} \cdot D^{Dep}$							−0.625**	−0.760***	−0.719***
							(−2.461)	(−4.037)	(−4.970)
$\Delta repo^{GC}$ lagged	−0.311***	−0.326***	−0.332***	−0.311***	−0.321***	−0.332***	−0.313***	−0.321***	−0.332***
	(−7.411)	(−11.237)	(−14.230)	(−7.531)	(−10.978)	(−14.147)	(−7.491)	(−11.027)	(−14.151)
N	2,828	7,173	10,001	2,828	7,173	10,001	2,828	7,173	10,001
R^2	0.332	0.161	0.210	0.332	0.172	0.213	0.336	0.179	0.220

The table reports the regression results examining the impact of access to the ECB's deposit facility on the pass-through of the monetary policy target rate into GC repo rates. The dependent variable is the change in the GC rate $\Delta repo^{GC}$. $\Delta PolRate$ denotes the change in the policy rate. D^{Dep} equals 1 if a country's GC rate is below the deposit facility. D^{Access} equals 1 if a lending bank has access to the deposit facility. ***, **, and * represent significance at a 1, 5, and 10% level, respectively; t-statistics are in parentheses. All regressions include basket-month-term fixed effects and heteroskedastic-robust standard errors. Data include German GC repo transactions separate for each and pooled across the term types ON and TN for the time-period 2010–2018.

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Appendix: Access/nonaccess by term type

Table 3.7. ECB access: Core countries

	(1) $\Delta repo^{GC}$ ON b/t	(2) $\Delta repo^{GC}$ TN b/t	(3) $\Delta repo^{GC}$ ON/TN b/t	(4) $\Delta repo^{GC}$ ON b/t	(5) $\Delta repo^{GC}$ TN b/t	(6) $\Delta repo^{GC}$ ON/TN b/t	(7) $\Delta repo^{GC}$ ON b/t	(8) $\Delta repo^{GC}$ TN b/t	(9) $\Delta repo^{GC}$ ON/TN b/t
$\Delta PolRate$	0.679***	0.376***	0.472***	0.810***	0.624***	0.683***	0.801***	0.576***	0.643***
	(15.740)	(16.033)	(23.035)	(13.089)	(11.957)	(16.875)	(10.747)	(10.245)	(14.261)
D^{Dep}	−0.020	−0.037***	−0.032***				−0.017	−0.038***	−0.032***
	(−1.132)	(−2.682)	(−2.940)				(−1.014)	(−2.794)	(−2.922)
$\Delta PolRate \cdot D^{Dep}$	−0.219***	0.030	−0.048				0.045	0.450***	0.298***
	(−2.637)	(0.438)	(−0.897)				(0.472)	(4.129)	(3.968)
D^{Access}				−0.002	−0.006	−0.005	−0.002	−0.005	−0.004
				(−0.231)	(−0.801)	(−0.819)	(−0.226)	(−0.685)	(−0.743)
$\Delta PolRate \cdot D^{Access}$				−0.201***	−0.324***	−0.284***	−0.155*	−0.263***	−0.222***
				(−2.692)	(−5.644)	(−6.242)	(−1.782)	(−4.261)	(−4.423)
$\Delta PolRate \cdot D^{Access} \cdot D^{Dep}$							−0.528***	−0.604***	−0.561***
							(−3.986)	(−4.584)	(−5.885)
$\Delta repo^{GC}$ lagged	−0.302***	−0.345***	−0.337***	−0.303***	−0.340***	−0.335***	−0.303***	−0.341***	−0.335***
	(−15.168)	(−18.622)	(−24.685)	(−15.259)	(−18.181)	(−24.388)	(−15.180)	(−18.237)	(−24.410)
N	12,219	22,863	35,082	12,219	22,863	35,082	12,219	22,863	35,082
R^2	0.253	0.143	0.180	0.254	0.150	0.185	0.257	0.153	0.187

The table reports the regression results examining the impact of access to the ECB's deposit facility on the pass-through of the monetary policy target rate into GC repo rates. The dependent variable is the change in the GC rate $\Delta repo^{GC}$. $\Delta PolRate$ denotes the change in the policy rate. D^{Dep} equals 1 if a country's GC rate is below the deposit facility. D^{Access} equals 1 if a lending bank has access to the deposit facility. ***, **, and * represent significance at a 1, 5, and 10% level, respectively; t-statistics are in parentheses. All regressions include basket-month-term fixed effects and heteroskedastic-robust standard errors. Data include GC repo transactions for core European countries separate for each and pooled across the term types ON and TN for the time-period 2010–2018.

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Appendix: Access/nonaccess by term type

Table 3.8. ECB access: All countries

	(1) $\Delta repo^{GC}$ ON b/t	(2) $\Delta repo^{GC}$ TN b/t	(3) $\Delta repo^{GC}$ ON/TN b/t	(4) $\Delta repo^{GC}$ ON b/t	(5) $\Delta repo^{GC}$ TN b/t	(6) $\Delta repo^{GC}$ ON/TN b/t	(7) $\Delta repo^{GC}$ ON b/t	(8) $\Delta repo^{GC}$ TN b/t	(9) $\Delta repo^{GC}$ ON/TN b/t
$\Delta PolRate$	0.660***	0.304***	0.424***	0.708***	0.520***	0.589***	0.694***	0.484***	0.560***
	(19.491)	(15.542)	(24.699)	(10.666)	(12.869)	(16.774)	(9.670)	(11.494)	(15.106)
D^{Dep}	0.033***	−0.020*	0.001				0.034***	−0.020*	0.002
	(2.675)	(−1.775)	(0.143)				(2.774)	(−1.775)	(0.221)
$\Delta PolRate \cdot D^{Dep}$	−0.200**	0.122*	0.011				0.169*	0.525***	0.384***
	(−2.562)	(1.882)	(0.220)				(1.808)	(5.546)	(5.668)
D^{Access}				−0.002	−0.004	−0.003	−0.002	−0.004	−0.003
				(−0.302)	(−0.726)	(−0.755)	(−0.273)	(−0.674)	(−0.709)
$\Delta PolRate \cdot D^{Access}$				−0.085	−0.279***	−0.223***	−0.047	−0.240***	−0.184***
				(−1.152)	(−6.199)	(−5.687)	(−0.594)	(−5.104)	(−4.438)
$\Delta PolRate \cdot D^{Access} \cdot D^{Dep}$							−0.657***	−0.595***	−0.595***
							(−5.109)	(−5.022)	(−6.733)
$\Delta repo^{GC}$ lagged	−0.324***	−0.382***	−0.372***	−0.324***	−0.381***	−0.371***	−0.324***	−0.381***	−0.371***
	(−15.436)	(−25.063)	(−30.291)	(−15.482)	(−24.915)	(−30.133)	(−15.452)	(−24.929)	(−30.167)
N	21,894	36,289	58,183	21,894	36,289	58,183	21,894	36,289	58,183
R^2	0.248	0.140	0.174	0.248	0.145	0.177	0.250	0.147	0.178

The table reports the regression results examining the impact of access to the ECB's deposit facility on the pass-through of the monetary policy target rate into GC repo rates. The dependent variable is the change in the GC rate $\Delta repo^{GC}$. $\Delta PolRate$ denotes the change in the policy rate. D^{Dep} equals 1 if a country's GC rate is below the deposit facility. D^{Access} equals 1 if a lending bank has access to the deposit facility. ***, **, and * represent significance at a 1, 5, and 10% level, respectively; t-statistics are in parentheses. All regressions include basket-month-term fixed effects and heteroskedastic-robust standard errors. Data include GC repo transactions for all European countries separate for each and pooled across the term types ON and TN for the time-period 2010–2018.

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Appendix: Access/nonaccess by fixed effect specification

Table 3.9. ECB access: Germany, different fixed effect specifications

	(1)	(2)	(3)	(4)	(5)
	$\Delta repo^{GC}$	$\Delta repo^{GC}$	$\Delta repo^{GC}$	$\Delta repo^{GC}$	$\Delta repo^{GC}$
	ON/TN	ON/TN	ON/TN	ON/TN	ON/TN
	b/t	b/t	b/t	b/t	b/t
$\Delta PolRate$	0.675***	0.684***	0.712***	0.725***	0.725***
	(8.781)	(9.301)	(9.197)	(8.733)	(8.709)
D^{Dep}	−0.047**	−0.047**	−0.027**	−0.032***	−0.021*
	(−2.338)	(−2.274)	(−2.068)	(−3.605)	(−1.795)
$\Delta PolRate \cdot D^{Dep}$	0.265**	0.269**	0.279**	0.313**	0.293**
	(2.082)	(2.350)	(2.225)	(2.358)	(2.228)
D^{Access}	−0.000	−0.002	0.003	0.002	0.003
	(−0.035)	(−0.147)	(0.265)	(0.155)	(0.339)
$\Delta PolRate \cdot D^{Access}$	−0.177**	−0.149*	−0.130	−0.138	−0.139
	(−2.100)	(−1.766)	(−1.456)	(−1.461)	(−1.468)
$\Delta PolRate \cdot D^{Access} \cdot D^{Dep}$	−0.719***	−0.686***	−0.665***	−0.591***	−0.583***
	(−4.970)	(−4.821)	(−4.400)	(−3.616)	(−3.608)
$\Delta repo^{GC}$ lagged	−0.332***	−0.321***	−0.307***	−0.298***	−0.299***
	(−14.151)	(−14.032)	(−12.483)	(−12.005)	(−12.072)
FE	Basket× Month× Term	Basket× Month	Basket× Year	Basket	Year
N	10,001	10,098	10,165	10,168	10,168
R^2	0.220	0.239	0.227	0.220	0.223

The table reports the regression results examining the impact of access to the ECB's deposit facility on the pass-through of the monetary policy target rate into GC repo rates. The dependent variable is the change in the GC rate $\Delta repo^{GC}$. $\Delta PolRate$ denotes the change in the policy rate. D^{Dep} equals 1 if a country's GC rate is below the deposit facility. D^{Access} equals 1 if a lending bank has access to the deposit facility. ***, **, and * represent significance at a 1, 5, and 10% level, respectively; t-statistics are in parentheses. The regressions include different fixed effect specifications and heteroskedastic-robust standard errors. Data include German GC repo transactions pooled across the term types ON and TN for the time-period 2010–2018.

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Appendix: Access/nonaccess by fixed effect specification

Table 3.10. ECB access: Core countries, different fixed effect specifications

	(1)	(2)	(3)	(4)	(5)
	$\Delta repo^{GC}$	$\Delta repo^{GC}$	$\Delta repo^{GC}$	$\Delta repo^{GC}$	$\Delta repo^{GC}$
	ON/TN b/t	ON/TN b/t	ON/TN b/t	ON/TN b/t	ON/TN b/t
$\Delta PolRate$	0.643***	0.672***	0.709***	0.716***	0.715***
	(14.261)	(15.044)	(15.028)	(14.735)	(14.721)
D^{Dep}	−0.032***	−0.027**	−0.019***	−0.018***	−0.015**
	(−2.922)	(−2.434)	(−2.594)	(−4.059)	(−2.243)
$\Delta PolRate \cdot D^{Dep}$	0.298***	0.293***	0.298***	0.326***	0.310***
	(3.968)	(4.140)	(3.908)	(4.127)	(3.966)
D^{Access}	−0.004	−0.004	−0.002	−0.003	−0.001
	(−0.743)	(−0.662)	(−0.331)	(−0.487)	(−0.156)
$\Delta PolRate \cdot D^{Access}$	−0.222***	−0.230***	−0.227***	−0.227***	−0.225***
	(−4.423)	(−4.565)	(−4.262)	(−4.162)	(−4.126)
$\Delta PolRate \cdot D^{Access} \cdot D^{Dep}$	−0.561***	−0.512***	−0.482***	−0.429***	−0.423***
	(−5.885)	(−5.599)	(−5.029)	(−4.262)	(−4.230)
$\Delta repo^{GC}$ lagged	−0.335***	−0.327***	−0.310***	−0.303***	−0.304***
	(−24.410)	(−23.978)	(−22.599)	(−22.093)	(−22.134)
FE	Basket× Month× Term	Basket× Month	Basket× Year	Basket	Year
N	35,082	35,376	35,624	35,631	35,631
R^2	0.187	0.199	0.192	0.188	0.190

The table reports the regression results examining the impact of access to the ECB's deposit facility on the pass-through of the monetary policy target rate into GC repo rates. The dependent variable is the change in the GC rate $\Delta repo^{GC}$. $\Delta PolRate$ denotes the change in the policy rate. D^{Dep} equals 1 if a country's GC rate is below the deposit facility. D^{Access} equals 1 if a lending bank has access to the deposit facility. ***, **, and * represent significance at a 1, 5, and 10% level, respectively; t-statistics are in parentheses. The regressions include different fixed effect specifications and heteroskedastic-robust standard errors. Data include GC repo transactions for core European countries pooled across the term types ON and TN for the time-period 2010–2018.

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Appendix: Access/nonaccess by fixed effect specification

Table 3.11. ECB access: All countries, different fixed effect specifications

	(1) $\Delta repo^{GC}$ ON/TN b/t	(2) $\Delta repo^{GC}$ ON/TN b/t	(3) $\Delta repo^{GC}$ ON/TN b/t	(4) $\Delta repo^{GC}$ ON/TN b/t	(5) $\Delta repo^{GC}$ ON/TN b/t
$\Delta PolRate$	0.560***	0.583***	0.616***	0.622***	0.621***
	(15.106)	(15.963)	(16.619)	(16.527)	(16.500)
D^{Dep}	0.002	0.005	−0.002	−0.011***	−0.002
	(0.221)	(0.553)	(−0.311)	(−2.815)	(−0.530)
$\Delta PolRate \cdot D^{Dep}$	0.384***	0.383***	0.397***	0.429***	0.417***
	(5.668)	(5.995)	(5.843)	(6.082)	(5.976)
D^{Access}	−0.003	−0.004	−0.003	−0.004	−0.003
	(−0.709)	(−0.816)	(−0.746)	(−1.009)	(−0.904)
$\Delta PolRate \cdot D^{Access}$	−0.184***	−0.188***	−0.190***	−0.182***	−0.180***
	(−4.438)	(−4.586)	(−4.537)	(−4.259)	(−4.217)
$\Delta PolRate \cdot D^{Access} \cdot D^{Dep}$	−0.595***	−0.533***	−0.495***	−0.454***	−0.444***
	(−6.733)	(−6.303)	(−5.567)	(−4.889)	(−4.817)
$\Delta repo^{GC}$ lagged	−0.371***	−0.363***	−0.347***	−0.342***	−0.342***
	(−30.167)	(−30.027)	(−28.923)	(−28.550)	(−28.577)
FE	Basket× Month× Term	Basket× Month	Basket× Year	Basket	Year
N	58,183	58,626	58,983	58,996	58,997
R^2	0.178	0.191	0.188	0.186	0.188

The table reports the regression results examining the impact of access to the ECB's deposit facility on the pass-through of the monetary policy target rate into GC repo rates. The dependent variable is the change in the GC rate $\Delta repo^{GC}$. $\Delta PolRate$ denotes the change in the policy rate. D^{Dep} equals 1 if a country's GC rate is below the deposit facility. D^{Access} equals 1 if a lending bank has access to the deposit facility. ***, **, and * represent significance at a 1, 5, and 10% level, respectively; t-statistics are in parentheses. The regressions include different fixed effect specifications and heteroskedastic-robust standard errors. Data include GC repo transactions for all European countries pooled across the term types ON and TN for the time-period 2010–2018.

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Appendix: Access/nonaccess by clustered standard errors

Table 3.12. ECB access: Germany

	(1) $\Delta repo^{GC}$ b/t	(2) $\Delta repo^{GC}$ b/t	(3) $\Delta repo^{GC}$ b/t
$\Delta PolRate$	0.539*	0.717*	0.675*
	(7.367)	(10.556)	(9.705)
D^{Dep}	−0.046		−0.047
	(−4.366)		(−4.723)
$\Delta PolRate \cdot D^{Dep}$	−0.176		0.265
	(−0.631)		(3.538)
D^{Access}		−0.001	−0.000
		(−0.126)	(−0.060)
$\Delta PolRate \cdot D^{Access}$		−0.264**	−0.177*
		(−15.995)	(−12.534)
$\Delta PolRate \cdot D^{Access} \cdot D^{Dep}$			−0.719*
			(−11.802)
$\Delta repo^{GC}$ lagged	−0.332**	−0.332**	−0.332**
	(−34.857)	(−55.699)	(−31.902)
N	10,001	10,001	10,001
R^2	0.210	0.213	0.220

The table reports the regression results examining the impact of access to the ECB's deposit facility on the pass-through of the monetary policy target rate into GC repo rates using clustered standard errors. The dependent variable is the change in the GC rate $\Delta repo^{GC}$. $\Delta PolRate$ denotes the change in the policy rate. D^{Dep} equals 1 if a country's GC rate is below the deposit facility. D^{Access} equals 1 if a lending bank has access to the deposit facility. ***, **, and * represent significance at a 1, 5, and 10% level, respectively; t-statistics are in parentheses. All regressions include basket-month-term fixed effects and standard errors accounting for clustering at the basket and access level. Data include German GC repo transactions pooled across the term types ON and TN for the time-period 2010–2018.

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Appendix: Access/nonaccess by clustered standard errors

Table 3.13. ECB access: Core countries

	(1) $\Delta repo^{GC}$ b/t	(2) $\Delta repo^{GC}$ b/t	(3) $\Delta repo^{GC}$ b/t
$\Delta PolRate$	0.472*	0.683**	0.643**
	(6.571)	(16.968)	(17.549)
D^{Dep}	−0.032		−0.032
	(−3.318)		(−2.634)
$\Delta PolRate \cdot D^{Dep}$	−0.048		0.298*
	(−0.209)		(7.263)
D^{Access}		−0.005	−0.004
		(−2.577)	(−1.780)
$\Delta PolRate \cdot D^{Access}$		−0.284***	−0.222**
		(−74.521)	(−22.051)
$\Delta PolRate \cdot D^{Access} \cdot D^{Dep}$			−0.561**
			(−28.590)
$\Delta repo^{GC}$ lagged	−0.337**	−0.335**	−0.335**
	(−27.282)	(−52.065)	(−49.473)
N	35,082	35,082	35,082
R^2	0.180	0.185	0.187

The table reports the regression results examining the impact of access to the ECB's deposit facility on the pass-through of the monetary policy target rate into GC repo rates using clustered standard errors. The dependent variable is the change in the GC rate $\Delta repo^{GC}$. $\Delta PolRate$ denotes the change in the policy rate. D^{Dep} equals 1 if a country's GC rate is below the deposit facility. D^{Access} equals 1 if a lending bank has access to the deposit facility. ***, **, and * represent significance at a 1, 5, and 10% level, respectively; t-statistics are in parentheses. All regressions include basket-month-term fixed effects and standard errors accounting for clustering at the basket and access level. Data include GC repo transactions for core European countries pooled across the term types ON and TN for the time-period 2010–2018.

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Appendix: Access/nonaccess by clustered standard errors

Table 3.14. ECB access: All countries

	(1) $\Delta repo^{GC}$ b/t	(2) $\Delta repo^{GC}$ b/t	(3) $\Delta repo^{GC}$ b/t
$\Delta PolRate$	0.424*	0.589**	0.560**
	(6.626)	(18.599)	(18.663)
D^{Dep}	0.001		0.002
	(0.079)		(0.107)
$\Delta PolRate \cdot D^{Dep}$	0.011		0.384
	(0.047)		(6.133)
D^{Access}		−0.003	−0.003
		(−2.754)	(−2.053)
$\Delta PolRate \cdot D^{Access}$		−0.223	−0.184
		(−6.139)	(−5.411)
$\Delta PolRate \cdot D^{Access} \cdot D^{Dep}$			−0.595**
			(−17.311)
$\Delta repo^{GC}$ lagged	−0.372**	−0.371**	−0.371**
	(−21.546)	(−21.317)	(−21.424)
N	58,183	58,183	58,183
R^2	0.174	0.177	0.178

The table reports the regression results examining the impact of access to the ECB's deposit facility on the pass-through of the monetary policy target rate into GC repo rates using clustered standard errors. The dependent variable is the change in the GC rate $\Delta repo^{GC}$. $\Delta PolRate$ denotes the change in the policy rate. D^{Dep} equals 1 if a country's GC rate is below the deposit facility. D^{Access} equals 1 if a lending bank has access to the deposit facility. ***, **, and * represent significance at a 1, 5, and 10% level, respectively; t-statistics are in parentheses. All regressions include basket-month-term fixed effects and standard errors accounting for clustering at the basket and access level. Data include GC repo transactions for all European countries pooled across the term types ON and TN for the time-period 2010–2018.

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Appendix: Alternative Rates and access/nonaccess banks

Table 6. ECB access: Germany

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	EONIA	€STR	euro LIBOR	zero OIS	zero EURIBOR	OIS 1W	GC Pooling
	$\Delta repo^{GC}$	$\Delta repo^{GC}$	$\Delta repo^{GC}$	$\Delta repo^{GC}$	$\Delta repo^{GC}$	$\Delta repo^{GC}$	$\Delta repo^{GC}$
	ON/TN b/t	ON/TN b/t	ON/TN b/t	ON/TN b/t	ON/TN b/t	ON/TN b/t	ON/TN b/t
$\Delta PolRate$	0.675***	0.705***	0.480***	0.334***	0.179***	0.329***	0.723***
	(8.781)	(9.274)	(9.220)	(6.013)	(5.055)	(4.349)	(14.246)
D^{Dep}	−0.047**	−0.026**	−0.051**	−0.021	−0.029**	−0.029**	−0.041**
	(−2.338)	(−2.059)	(−2.520)	(−1.564)	(−2.061)	(−2.249)	(-2.108)
$\Delta PolRate \cdot D^{Dep}$	0.265**	0.253**	0.356***	0.268**	0.179**	0.363***	0.277**
	(2.082)	(2.086)	(4.003)	(2.571)	(2.196)	(3.249)	(2.320)
D^{Access}	−0.000	0.002	0.004	0.001	−0.004	0.001	−0.005
	(−0.035)	(0.183)	(0.339)	(0.120)	(−0.361)	(0.090)	(−0.482)
$\Delta PolRate \cdot D^{Access}$	−0.177**	−0.128	−0.117*	−0.165***	−0.072*	−0.046	−0.162***
	(−2.100)	(−1.474)	(−1.743)	(−2.702)	(−1.887)	(−0.516)	(−2.702)
$\Delta PolRate \cdot D^{Access} \cdot D^{Dep}$	−0.719***	−0.648***	−0.670***	−0.378***	−0.264***	−0.258*	−0.657***
	(−4.970)	(−4.425)	(−5.607)	(−3.377)	(−3.058)	(−1.740)	(−4.166)
$\Delta repo^{GC}$ lagged	−0.332***	−0.311***	−0.420***	−0.323***	−0.311***	−0.324***	−0.307***
	(−14.151)	(−12.972)	(−15.125)	(−12.711)	(−12.876)	(−12.113)	(−11.913)
N	10,001	10,158	9,952	9,778	9,758	10,078	10,060
R^2	0.220	0.231	0.187	0.124	0.114	0.144	0.297

see results for core countries, all countries

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Appendix: Alternative policy rates

Table 3.16. ECB access: Core countries

	(1) EONIA $\Delta repo^{GC}$ ON/TN b/t	(2) €STR $\Delta repo^{GC}$ ON/TN b/t	(3) euro LIBOR $\Delta repo^{GC}$ ON/TN b/t	(4) zero OIS $\Delta repo^{GC}$ ON/TN b/t	(5) zero EURIBOR $\Delta repo^{GC}$ ON/TN b/t	(6) OIS 1W $\Delta repo^{GC}$ ON/TN b/t
$\Delta PolRate$	0.643***	0.704***	0.440***	0.312***	0.135***	0.348***
	(14.261)	(15.067)	(8.908)	(9.306)	(7.426)	(6.378)
D^{Dep}	−0.032***	−0.018**	−0.030***	−0.020**	−0.025***	−0.022***
	(−2.922)	(−2.488)	(−2.770)	(−2.575)	(−3.260)	(−2.961)
$\Delta PolRate \cdot D^{Dep}$	0.298***	0.299***	0.375***	0.210***	0.198***	0.319***
	(3.968)	(3.943)	(5.581)	(3.317)	(4.152)	(4.315)
D^{Access}	−0.004	−0.001	−0.005	−0.001	−0.006	−0.004
	(−0.743)	(−0.192)	(−0.785)	(−0.231)	(−1.033)	(−0.619)
$\Delta PolRate \cdot D^{Access}$	−0.222***	−0.226***	−0.122**	−0.186***	−0.059***	−0.117**
	(−4.423)	(−4.310)	(−2.094)	(−5.242)	(−2.947)	(−2.006)
$\Delta PolRate \cdot D^{Access} \cdot D^{Dep}$	−0.561***	−0.497***	−0.417***	−0.240***	−0.231***	−0.233***
	(−5.885)	(−5.259)	(−4.766)	(−3.612)	(−4.533)	(−2.711)
$\Delta repo^{GC}$ lagged	−0.335***	−0.313***	−0.401***	−0.318***	−0.305***	−0.318***
	(−24.410)	(−22.963)	(−26.606)	(−22.834)	(−22.875)	(−22.775)
N	35,082	35,607	34,949	34,606	34,519	35,295
R^2	0.187	0.195	0.168	0.118	0.106	0.135

The table reports the robustness results examining the impact of access to the ECB's deposit facility on the monetary policy pass-through for alternative monetary policy target rates. The dependent variable is the change in the GC rate $\Delta repo^{GC}$. $\Delta PolRate$ denotes the change in different policy rates. D^{Dep} equals 1 if a country's GC rate is below the deposit facility. D^{Access} equals 1 if a lending bank has access to the deposit facility. ***, **, and * represent significance at a 1, 5, and 10% level, respectively; t-statistics are in parentheses. All regressions include basket-month-term fixed effects and heteroskedastic-robust standard errors. Data include GC repo transactions for core European countries pooled across the term types ON and TN for the time-period 2010–2018.

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Appendix: Alternative policy rates

Table 3.17. ECB access: All countries

	(1) EONIA $\Delta repo^{GC}$ ON/TN b/t	(2) €STR $\Delta repo^{GC}$ ON/TN b/t	(3) euro LIBOR $\Delta repo^{GC}$ ON/TN b/t	(4) zero OIS $\Delta repo^{GC}$ ON/TN b/t	(5) zero EURIBOR $\Delta repo^{GC}$ ON/TN b/t	(6) OIS 1W $\Delta repo^{GC}$ ON/TN b/t
$\Delta PolRate$	0.560***	0.612***	0.379***	0.250***	0.127***	0.262***
	(15.106)	(16.587)	(10.586)	(10.923)	(10.831)	(6.977)
D^{Dep}	0.002	−0.002	0.003	−0.003	−0.007	−0.005
	(0.221)	(−0.354)	(0.340)	(−0.468)	(−1.055)	(−0.804)
$\Delta PolRate \cdot D^{Dep}$	0.384***	0.400***	0.396***	0.289***	0.210***	0.417***
	(5.668)	(5.872)	(6.898)	(5.154)	(5.112)	(6.987)
D^{Access}	−0.003	−0.002	−0.003	−0.002	−0.004	−0.002
	(−0.709)	(−0.509)	(−0.641)	(−0.447)	(−0.961)	(−0.535)
$\Delta PolRate \cdot D^{Access}$	−0.184***	−0.193***	−0.112***	−0.142***	−0.052***	−0.102**
	(−4.438)	(−4.635)	(−2.677)	(−5.732)	(−4.004)	(−2.462)
$\Delta PolRate \cdot D^{Access} \cdot D^{Dep}$	−0.595***	−0.500***	−0.362***	−0.283***	−0.231***	−0.200***
	(−6.733)	(−5.763)	(−4.753)	(−4.711)	(−5.198)	(−2.713)
$\Delta repo^{GC}$ lagged	−0.371***	−0.350***	−0.416***	−0.354***	−0.346***	−0.345***
	(−30.167)	(−29.208)	(−30.883)	(−28.331)	(−27.758)	(−28.558)
N	58,183	58,961	57,864	57,214	57,026	58,447
R^2	0.178	0.189	0.160	0.133	0.128	0.139

The table reports the robustness results examining the impact of access to the ECB's deposit facility on the monetary policy pass-through for alternative monetary policy target rates. The dependent variable is the change in the GC rate $\Delta repo^{GC}$. $\Delta PolRate$ denotes the change in different policy rates. D^{Dep} equals 1 if a country's GC rate is below the deposit facility. D^{Access} equals 1 if a lending bank has access to the deposit facility. ***, **, and * represent significance at a 1, 5, and 10% level, respectively; t-statistics are in parentheses. All regressions include basket-month-term fixed effects and heteroskedastic-robust standard errors. Data include GC repo transactions for all European countries pooled across the term types ON and TN for the time-period 2010–2018.

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Appendix: Eligible/noneligible by term type

Table 4.6. Collateral eligibility: Germany

	(1) $\Delta repo^{Special}$ TN b/t	(2) $\Delta repo^{Special}$ SN b/t	(3) $\Delta repo^{Special}$ TN/SN b/t	(4) $\Delta repo^{Special}$ TN b/t	(5) $\Delta repo^{Special}$ SN b/t	(6) $\Delta repo^{Special}$ TN/SN b/t	(7) $\Delta repo^{Special}$ TN b/t	(8) $\Delta repo^{Special}$ SN b/t	(9) $\Delta repo^{Special}$ TN/SN b/t
$\Delta PolRate$	0.190***	0.061***	0.106***	0.171***	0.058***	0.098***	0.186***	0.066***	0.109***
	(17.269)	(11.084)	(19.644)	(11.689)	(6.992)	(12.937)	(11.598)	(7.315)	(13.130)
D^{QE}	−0.022	−0.010	−0.016				−0.022	−0.010	−0.016
	(−0.996)	(−0.877)	(−1.462)				(−0.995)	(−0.839)	(−1.434)
$\Delta PolRate \cdot D^{QE}$	−0.206***	−0.119***	−0.150***				−0.165***	−0.095***	−0.120***
	(−10.786)	(−12.683)	(−15.837)				(−5.586)	(−6.505)	(−8.154)
$D^{Eligible}$				−0.001	0.005	0.004	−0.001	0.005	0.004
				(−0.043)	(0.575)	(0.454)	(−0.051)	(0.568)	(0.440)
$\Delta PolRate \cdot D^{Eligible}$				0.023	−0.001	0.006	0.008	−0.010	−0.005
				(1.097)	(−0.127)	(0.537)	(0.356)	(−0.837)	(−0.463)
$\Delta PolRate \cdot D^{Eligible} \cdot D^{QE}$				−0.235***	−0.138***	−0.172***	−0.070*	−0.043**	−0.052***
				(−9.456)	(−11.374)	(−14.035)	(−1.820)	(−2.299)	(−2.737)
$\Delta repo^{Special}$ lagged	−0.424***	−0.312***	−0.364***	−0.424***	−0.312***	−0.364***	−0.424***	−0.312***	−0.364***
	(−56.995)	(−9.357)	(−20.719)	(−56.981)	(−9.356)	(−20.716)	(−56.992)	(−9.357)	(−20.719)
N	106,105	195,503	301,608	106,105	195,503	301,608	106,105	195,503	301,608
R^2	0.159	0.084	0.119	0.159	0.084	0.119	0.159	0.084	0.119

The table reports the regression results examining the impact of asset eligibility for quantitative easing on the pass-through of the monetary policy target rate into special repo rates. The dependent variable is the change in the special repo rate $\Delta repo^{Special}$. $\Delta PolRate$ denotes the change in the policy rate. D^{QE} equals 1 during the PSPP. $D^{Eligible}$ equals 1 if a security is (hypothetically) eligible for purchase under the PSPP. ***, **, and * represent significance at a 1, 5, and 10% level, respectively; t-statistics are in parentheses. All regressions include ISIN-month-term fixed effects and heteroskedastic-robust standard errors. Data include German special repo transactions separate for each and pooled across the term types TN and SN for the time-period 2010–2018.

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Appendix: Eligible/noneligible by term type

Table 4.7. Collateral eligibility: Core countries

	(1) $\Delta repo^{Special}$ TN b/t	(2) $\Delta repo^{Special}$ SN b/t	(3) $\Delta repo^{Special}$ TN/SN b/t	(4) $\Delta repo^{Special}$ TN b/t	(5) $\Delta repo^{Special}$ SN b/t	(6) $\Delta repo^{Special}$ TN/SN b/t	(7) $\Delta repo^{Special}$ TN b/t	(8) $\Delta repo^{Special}$ SN b/t	(9) $\Delta repo^{Special}$ TN/SN b/t
$\Delta PolRate$	0.184***	0.063***	0.105***	0.147***	0.063***	0.095***	0.157***	0.071***	0.103***
	(26.371)	(18.168)	(31.179)	(14.900)	(10.447)	(17.681)	(14.724)	(10.779)	(17.810)
D^{QE}	−0.010	−0.006	−0.008				−0.010	−0.005	−0.008
	(−0.719)	(−0.802)	(−1.187)				(−0.709)	(−0.760)	(−1.158)
$\Delta PolRate \cdot D^{QE}$	−0.160***	−0.110***	−0.126***				−0.124***	−0.092***	−0.104***
	(−12.396)	(−17.603)	(−19.814)				(−5.922)	(−8.172)	(−9.643)
$D^{Eligible}$				0.000	0.008	0.005	0.000	0.008	0.005
				(0.013)	(1.179)	(0.972)	(0.007)	(1.181)	(0.969)
$\Delta PolRate \cdot D^{Eligible}$				0.055***	−0.004	0.011	0.044***	−0.011	0.002
				(4.088)	(−0.526)	(1.592)	(3.169)	(−1.472)	(0.295)
$\Delta PolRate \cdot D^{Eligible} \cdot D^{QE}$				−0.182***	−0.120***	−0.137***	−0.058**	−0.028**	−0.033**
				(−11.145)	(−16.192)	(−17.552)	(−2.189)	(−2.095)	(−2.453)
$\Delta repo^{Special}$ lagged	−0.409***	−0.316***	−0.357***	−0.409***	−0.316***	−0.357***	−0.409***	−0.316***	−0.357***
	(−81.121)	(−19.471)	(−39.267)	(−81.084)	(−19.470)	(−39.259)	(−81.092)	(−19.472)	(−39.264)
N	238,165	467,468	705,633	238,165	467,468	705,633	238,165	467,468	705,633
R^2	0.146	0.088	0.115	0.146	0.008	0.115	0.146	0.088	0.115

The table reports the regression results examining the impact of asset eligibility for quantitative easing on the pass-through of the monetary policy target rate into special repo rates. The dependent variable is the change in the special repo rate $\Delta repo^{Special}$. $\Delta PolRate$ denotes the change in the policy rate. D^{QE} equals 1 during the PSPP. $D^{Eligible}$ equals 1 if a security is (hypothetically) eligible for purchase under the PSPP. ***, **, and * represent significance at a 1, 5, and 10% level, respectively; t-statistics are in parentheses. All regressions include ISIN-month-term fixed effects and heteroskedastic-robust standard errors. Data include special repo transactions for core European countries separate for each and pooled across the term types TN and SN for the time-period 2010–2018.

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Appendix: Eligible/noneligible by term type

Table 4.8. Collateral eligibility: All countries

	(1) $\Delta repo^{Special}$ TN b/t	(2) $\Delta repo^{Special}$ SN b/t	(3) $\Delta repo^{Special}$ TN/SN b/t	(4) $\Delta repo^{Special}$ TN b/t	(5) $\Delta repo^{Special}$ SN b/t	(6) $\Delta repo^{Special}$ TN/SN b/t	(7) $\Delta repo^{Special}$ TN b/t	(8) $\Delta repo^{Special}$ SN b/t	(9) $\Delta repo^{Special}$ TN/SN b/t
$\Delta PolRate$	0.174***	0.061***	0.099***	0.145***	0.062***	0.094***	0.153***	0.069***	0.101***
	(26.299)	(17.227)	(30.205)	(15.800)	(10.508)	(18.394)	(15.406)	(10.844)	(18.358)
D^{QE}	−0.021	−0.012	−0.017*				−0.021	−0.012	−0.016*
	(−1.046)	(−1.404)	(−1.752)				(−1.047)	(−1.375)	(−1.740)
$\Delta PolRate \cdot D^{QE}$	−0.126***	−0.105***	−0.108***				−0.094***	−0.088***	−0.089***
	(−10.342)	(−16.347)	(−17.339)				(−4.601)	(−7.479)	(−8.198)
$D^{Eligible}$				−0.007	0.009	0.004	−0.007	0.009	0.004
				(−0.658)	(1.374)	(0.669)	(−0.675)	(1.365)	(0.649)
$\Delta PolRate \cdot D^{Eligible}$				0.041***	−0.005	0.004	0.033**	−0.012	−0.004
				(3.259)	(−0.625)	(0.562)	(2.508)	(−1.545)	(−0.565)
$\Delta PolRate \cdot D^{Eligible} \cdot D^{QE}$				−0.145***	−0.114***	−0.117***	−0.051**	−0.026*	−0.028**
				(−9.463)	(−14.766)	(−15.319)	(−1.995)	(−1.869)	(−2.119)
$\Delta repo^{Special}$ lagged	−0.412***	−0.324***	−0.362***	−0.412***	−0.324***	−0.362***	−0.412***	−0.324***	−0.362***
	(−95.132)	(−27.036)	(−51.918)	(−95.101)	(−27.036)	(−51.911)	(−95.110)	(−27.037)	(−51.915)
N	323,263	620,086	943,349	323,263	620,086	943,349	323,263	620,086	943,349
R^2	0.151	0.093	0.118	0.151	0.093	0.118	0.151	0.093	0.118

The table reports the regression results examining the impact of asset eligibility for quantitative easing on the pass-through of the monetary policy target rate into special repo rates. The dependent variable is the change in the special repo rate $\Delta repo^{Special}$. $\Delta PolRate$ denotes the change in the policy rate. D^{QE} equals 1 during the PSPP. $D^{Eligible}$ equals 1 if a security is (hypothetically) eligible for purchase under the PSPP. ***, **, and * represent significance at a 1, 5, and 10% level, respectively; t-statistics are in parentheses. All regressions include ISIN-month-term fixed effects and heteroskedastic-robust standard errors. Data include special repo transactions for all European countries separate for each and pooled across the term types TN and SN for the time-period 2010–2018.

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Appendix: Eligible/noneligible by fixed effect specification

Table 4.9. Collateral eligibility: Germany, different fixed effect specifications

	(1)	(2)	(3)	(4)	(5)
	$\Delta repo^{Special}$	$\Delta repo^{Special}$	$\Delta repo^{Special}$	$\Delta repo^{Special}$	$\Delta repo^{Special}$
	TN/SN b/t	TN/SN b/t	TN/SN b/t	TN/SN b/t	TN/SN b/t
$\Delta PolRate$	0.109***	0.111***	0.117***	0.118***	0.119***
	(13.130)	(13.151)	(13.619)	(13.718)	(13.765)
D^{QE}	−0.016	−0.016	0.048***	0.013***	0.048***
	(−1.434)	(−1.428)	(9.022)	(5.858)	(9.408)
$\Delta PolRate \cdot D^{QE}$	−0.120***	−0.121***	−0.129***	−0.129***	−0.131***
	(−8.154)	(−8.170)	(−8.598)	(−8.558)	(−8.715)
$D^{Eligible}$	0.004	0.004	−0.010**	−0.002	−0.000
	(0.440)	(0.505)	(−2.344)	(−0.827)	(−0.017)
$\Delta PolRate \cdot D^{Eligible}$	−0.005	−0.006	−0.002	−0.003	−0.004
	(−0.463)	(−0.511)	(−0.219)	(−0.302)	(−0.348)
$\Delta PolRate \cdot D^{Eligible} \cdot D^{QE}$	−0.052***	−0.053***	−0.053***	−0.051***	−0.052**
	(−2.737)	(−2.739)	(−2.711)	(−2.596)	(−2.642)
$\Delta repo^{Special}$ lagged	−0.364***	−0.360***	−0.350***	−0.349***	−0.349***
	(−20.719)	(−21.031)	(−20.941)	(−20.941)	(−20.950)
FE	ISIN× Month× Term	ISIN× Month	ISIN× Year	ISIN	Year
N	301,608	301,859	301,896	301,897	301,897
R^2	0.119	0.123	0.121	0.121	0.121

The table reports the regression results examining the impact of asset eligibility for quantitative easing on the pass-through of the monetary policy target rate into special repo rates. The dependent variable is the change in the special repo rate $\Delta repo^{Special}$. $\Delta PolRate$ denotes the change in the policy rate. D^{QE} equals 1 during the PSPP. $D^{Eligible}$ equals 1 if a security is (hypothetically) eligible for purchase under the PSPP. ***, **, and * represent significance at a 1, 5, and 10% level, respectively; t-statistics are in parentheses. The regressions include different fixed effect specifications and heteroskedastic-robust standard errors. Data include German special repo transactions pooled across the term types TN and SN for the time-period 2010–2018.

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Appendix: Eligible/noneligible by fixed effect specification

Table 4.10. Collateral eligibility: Core countries, different fixed effect specifications

	(1) $\Delta repo^{Special}$ TN/SN b/t	(2) $\Delta repo^{Special}$ TN/SN b/t	(3) $\Delta repo^{Special}$ TN/SN b/t	(4) $\Delta repo^{Special}$ TN/SN b/t	(5) $\Delta repo^{Special}$ TN/SN b/t
$\Delta PolRate$	0.103***	0.106***	0.114***	0.115***	0.115***
	(17.810)	(18.194)	(19.593)	(19.711)	(19.745)
D^{QE}	−0.008	−0.008	0.045***	0.010***	0.045***
	(−1.158)	(−1.148)	(13.006)	(7.362)	(13.513)
$\Delta PolRate \cdot D^{QE}$	−0.104***	−0.107***	−0.119***	−0.119***	−0.121***
	(−9.643)	(−9.860)	(−10.855)	(−10.823)	(−11.030)
$D^{Eligible}$	0.005	0.005	−0.007**	−0.002	0.001
	(0.969)	(0.972)	(−2.470)	(−1.324)	(0.599)
$\Delta PolRate \cdot D^{Eligible}$	0.002	0.003	0.006	0.005	0.005
	(0.295)	(0.400)	(0.858)	(0.764)	(0.722)
$\Delta PolRate \cdot D^{Eligible} \cdot D^{QE}$	−0.033**	−0.033**	−0.031**	−0.029**	−0.030**
	(−2.453)	(−2.426)	(−2.305)	(−2.096)	(−2.179)
$\Delta repo^{Special}$ lagged	−0.357***	−0.352***	−0.341***	−0.340***	−0.340***
	(−39.264)	(−39.715)	(−39.287)	(−39.274)	(−39.297)
FE	ISIN× Month× Term	ISIN× Month	ISIN× Year	ISIN	Year
N	705,633	706,207	706,252	706,255	706,255
R^2	0.115	0.119	0.116	0.116	0.116

The table reports the regression results examining the impact of asset eligibility for quantitative easing on the pass-through of the monetary policy target rate into special repo rates. The dependent variable is the change in the special repo rate $\Delta repo^{Special}$. $\Delta PolRate$ denotes the change in the policy rate. D^{QE} equals 1 during the PSPP. $D^{Eligible}$ equals 1 if a security is (hypothetically) eligible for purchase under the PSPP. ***, **, and * represent significance at a 1, 5, and 10% level, respectively; t-statistics are in parentheses. The regressions include different fixed effect specifications and heteroskedastic-robust standard errors. Data include special repo transactions for core European countries pooled across the term types TN and SN for the time-period 2010–2018.

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Appendix: Eligible/noneligible by fixed effect specification

Table 4.11. Collateral eligibility: All countries, different fixed effect specifications

	(1) $\Delta repo^{Special}$ TN/SN b/t	(2) $\Delta repo^{Special}$ TN/SN b/t	(3) $\Delta repo^{Special}$ TN/SN b/t	(4) $\Delta repo^{Special}$ TN/SN b/t	(5) $\Delta repo^{Special}$ TN/SN b/t
$\Delta PolRate$	0.101***	0.105***	0.113***	0.114***	0.114***
	(18.358)	(18.825)	(20.418)	(20.554)	(20.584)
D^{QE}	−0.016*	−0.017*	0.038***	0.011***	0.039***
	(−1.740)	(−1.764)	(10.253)	(8.196)	(11.222)
$\Delta PolRate \cdot D^{QE}$	−0.089***	−0.092***	−0.104***	−0.104***	−0.106***
	(−8.198)	(−8.437)	(−9.547)	(−9.563)	(−9.737)
$D^{Eligible}$	0.004	0.004	−0.007***	−0.001	0.001
	(0.649)	(0.727)	(−2.867)	(−0.652)	(0.611)
$\Delta PolRate \cdot D^{Eligible}$	−0.004	−0.003	0.001	0.001	0.000
	(−0.565)	(−0.369)	(0.181)	(0.096)	(0.057)
$\Delta PolRate \cdot D^{Eligible} \cdot D^{QE}$	−0.028**	−0.029**	−0.031**	−0.028**	−0.029**
	(−2.119)	(−2.165)	(−2.310)	(−2.076)	(−2.170)
$\Delta repo^{Special}$ lagged	−0.362***	−0.356***	−0.345***	−0.344***	−0.344***
	(−51.915)	(−52.505)	(−51.939)	(−51.934)	(−51.964)
FE	ISIN× Month× Term	ISIN× Month	ISIN× Year	ISIN	Year
N	943,349	944,265	944,331	944,335	944,335
R^2	0.118	0.122	0.119	0.119	0.119

The table reports the regression results examining the impact of asset eligibility for quantitative easing on the pass-through of the monetary policy target rate into special repo rates. The dependent variable is the change in the special repo rate $\Delta repo^{Special}$. $\Delta PolRate$ denotes the change in the policy rate. D^{QE} equals 1 during the PSPP. $D^{Eligible}$ equals 1 if a security is (hypothetically) eligible for purchase under the PSPP. ***, **, and * represent significance at a 1, 5, and 10% level, respectively; t-statistics are in parentheses. The regressions include different fixed effect specifications and heteroskedastic-robust standard errors. Data include special repo transactions for all European countries pooled across the term types TN and SN for the time-period 2010–2018.

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Appendix: Eligible/noneligible by clustered standard errors

Table 4.12. Collateral eligibility: Germany

	(1) $\Delta repo^{Special}$ b/t	(2) $\Delta repo^{Special}$ b/t	(3) $\Delta repo^{Special}$ b/t
$\Delta PolRate$	0.106**	0.098**	0.109**
	(32.158)	(33.661)	(36.511)
D^{QE}	−0.016		−0.016
	(−0.832)		(−0.835)
$\Delta PolRate \cdot D^{QE}$	−0.150		−0.120**
	(−5.792)		(−20.932)
$D^{Eligible}$		0.004	0.004
		(0.400)	(0.400)
$\Delta PolRate \cdot D^{Eligible}$		0.006	−0.005
		(1.925)	(−1.309)
$\Delta PolRate \cdot D^{Eligible} \cdot D^{QE}$		−0.172***	−0.052*
		(−175.810)	(−8.421)
$\Delta repo^{Special}$ lagged	−0.364**	−0.364**	−0.364**
	(−22.869)	(−22.935)	(−22.804)
N	301,608	301,608	301,608
R^2	0.119	0.119	0.119

The table reports the regression results examining the impact of asset eligibility for quantitative easing on the monetary policy pass-through using clustered standard errors. The dependent variable is the change in the special repo rate $\Delta repo^{Special}$. $\Delta PolRate$ denotes the change in different policy rates. D^{QE} equals 1 during the PSPP. $D^{Eligible}$ equals 1 if a security is (hypothetically) eligible for purchase under the PSPP. ***, **, and * represent significance at a 1, 5, and 10% level, respectively; t-statistics are in parentheses. All regressions include ISIN-month-term fixed effects and standard errors accounting for clustering at the ISIN and eligibility level. Data include German special repo transactions pooled across the term types TN and SN for the time-period 2010–2018.

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Appendix: Eligible/noneligible by clustered standard errors

Table 4.13. Collateral eligibility: Core countries

	(1) $\Delta repo^{Special}$ b/t	(2) $\Delta repo^{Special}$ b/t	(3) $\Delta repo^{Special}$ b/t
$\Delta PolRate$	0.105***	0.095***	0.103***
	(134.397)	(72.001)	(81.078)
D^{QE}	−0.008		−0.008
	(−0.716)		(−0.694)
$\Delta PolRate \cdot D^{QE}$	−0.126*		−0.104**
	(−8.472)		(−39.994)
$D^{Eligible}$		0.005	0.005
		(1.050)	(1.028)
$\Delta PolRate \cdot D^{Eligible}$		0.011*	0.002
		(7.979)	(1.168)
$\Delta PolRate \cdot D^{Eligible} \cdot D^{QE}$		−0.137***	−0.033**
		(−195.384)	(−12.887)
$\Delta repo^{Special}$ lagged	−0.357**	−0.357**	−0.357**
	(−29.353)	(−29.473)	(−29.314)
N	705,633	705,633	705,633
R^2	0.115	0.115	0.115

The table reports the regression results examining the impact of asset eligibility for quantitative easing on the monetary policy pass-through using clustered standard errors. The dependent variable is the change in the special repo rate $\Delta repo^{Special}$. $\Delta PolRate$ denotes the change in different policy rates. D^{QE} equals 1 during the PSPP. $D^{Eligible}$ equals 1 if a security is (hypothetically) eligible for purchase under the PSPP. ***, **, and * represent significance at a 1, 5, and 10% level, respectively; t-statistics are in parentheses. All regressions include ISIN-month-term fixed effects and standard errors accounting for clustering at the ISIN and eligibility level. Data include special repo transactions for core European countries pooled across the term types TN and SN for the time-period 2010–2018.

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Appendix: Eligible/noneligible by clustered standard errors

Table 4.14. Collateral eligibility: All countries

	(1) $\Delta repo^{Special}$ b/t	(2) $\Delta repo^{Special}$ b/t	(3) $\Delta repo^{Special}$ b/t
$\Delta PolRate$	0.099**	0.094***	0.101***
	(45.807)	(110.286)	(99.326)
D^{QE}	−0.017		−0.016
	(−0.666)		(−0.661)
$\Delta PolRate \cdot D^{QE}$	−0.108*		−0.089**
	(−8.733)		(−48.349)
$D^{Eligible}$		0.004	0.004
		(0.702)	(0.667)
$\Delta PolRate \cdot D^{Eligible}$		0.004	−0.004
		(3.383)	(−1.931)
$\Delta PolRate \cdot D^{Eligible} \cdot D^{QE}$		−0.117***	−0.028**
		(−186.211)	(−31.726)
$\Delta repo^{Special}$ lagged	−0.362**	−0.362**	−0.362**
	(−43.257)	(−43.367)	(−43.092)
N	943,349	943,349	943,349
R^2	0.118	0.118	0.118

The table reports the regression results examining the impact of asset eligibility for quantitative easing on the monetary policy pass-through using clustered standard errors. The dependent variable is the change in the special repo rate $\Delta repo^{Special}$. $\Delta PolRate$ denotes the change in different policy rates. D^{QE} equals 1 during the PSPP. $D^{Eligible}$ equals 1 if a security is (hypothetically) eligible for purchase under the PSPP. ***, **, and * represent significance at a 1, 5, and 10% level, respectively; t-statistics are in parentheses. All regressions include ISIN-month-term fixed effects and standard errors accounting for clustering at the ISIN and eligibility level. Data include special repo transactions for all European countries pooled across the term types TN and SN for the time-period 2010–2018.

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Appendix: Alternative Rates and eligible/noneligible collateral

Table 7. Asset eligibility: Germany

	(1) EONIA $\Delta repo^{Special}$ TN/SN b/t	(2) €STR $\Delta repo^{Special}$ TN/SN b/t	(3) euro LIBOR $\Delta repo^{Special}$ TN/SN b/t	(4) zero OIS $\Delta repo^{Special}$ TN/SN b/t	(5) zero EURIBOR $\Delta repo^{Special}$ TN/SN b/t	(6) OIS 1W $\Delta repo^{Special}$ TN/SN b/t	(7) GC Pooling $\Delta repo^{Special}$ TN/SN b/t
$\Delta PolRate$	0.109***	0.109***	0.105***	0.054***	0.046***	0.101***	0.117***
	(13.130)	(13.130)	(11.394)	(9.442)	(9.250)	(12.053)	(13.854)
D^{QE}	−0.016	−0.016	−0.040***	−0.028**	−0.031**	−0.039***	0.042***
	(−1.434)	(−1.421)	(−3.105)	(−2.303)	(−2.465)	(−3.456)	(3.461)
$\Delta PolRate \cdot D^{QE}$	−0.120***	−0.116***	−0.109***	−0.025***	−0.019***	−0.039**	0.406***
	(−8.154)	(−7.867)	(−9.346)	(−3.565)	(−2.984)	(−2.427)	(6.250)
$D^{Eligible}$	0.004	0.004	0.003	0.003	0.002	0.002	0.002
	(0.440)	(0.435)	(0.316)	(0.314)	(0.254)	(0.187)	(0.202)
$\Delta PolRate \cdot D^{Eligible}$	−0.005	−0.005	−0.000	0.015**	0.002	−0.022**	0.013
	(−0.463)	(−0.463)	(−0.015)	(1.987)	(0.355)	(−2.059)	(1.172)
$\Delta PolRate \cdot D^{Eligible} \cdot D^{QE}$	−0.052***	−0.044**	−0.023	−0.031***	−0.017**	−0.023	−0.216***
	(−2.737)	(−2.289)	(−1.491)	(−3.346)	(−2.021)	(−1.086)	(−2.972)
$\Delta repo^{Special}$ lagged	−0.364***	−0.364***	−0.365***	−0.363***	−0.363***	−0.359***	−0.356***
	(−20.719)	(−20.719)	(−20.277)	(−19.856)	(−19.668)	(−20.195)	(−69.536)
N	301,608	301,608	299,889	290,153	289,058	298,718	303,446
R^2	0.119	0.119	0.120	0.119	0.120	0.116	0.119

see results for core countries, all countries,

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Appendix: Alternative policy rates

Table 4.16. Collateral eligibility: Core countries

	(1) EONIA $\Delta repo^{Special}$ TN/SN b/t	(2) €STR $\Delta repo^{Special}$ TN/SN b/t	(3) euro LIBOR $\Delta repo^{Special}$ TN/SN b/t	(4) zero OIS $\Delta repo^{Special}$ TN/SN b/t	(5) zero EURIBOR $\Delta repo^{Special}$ TN/SN b/t	(6) OIS 1W $\Delta repo^{Special}$ TN/SN b/t
$\Delta PolRate$	0.103***	0.103***	0.099***	0.055***	0.041***	0.074***
	(17.810)	(17.810)	(15.179)	(13.493)	(11.908)	(12.705)
D^{QE}	−0.008	−0.008	−0.033***	−0.023***	−0.026***	−0.032***
	(−1.158)	(−1.140)	(−3.990)	(−2.845)	(−3.244)	(−4.581)
$\Delta PolRate \cdot D^{QE}$	−0.104***	−0.097***	−0.094***	−0.037***	−0.023***	−0.001
	(−9.643)	(−8.995)	(−10.427)	(−7.136)	(−4.925)	(−0.049)
$D^{Eligible}$	0.005	0.005	0.006	0.004	0.003	0.004
	(0.969)	(0.959)	(1.003)	(0.688)	(0.612)	(0.629)
$\Delta PolRate \cdot D^{Eligible}$	0.002	0.002	0.017**	0.005	0.001	0.028***
	(0.295)	(0.295)	(2.108)	(1.112)	(0.270)	(3.810)
$\Delta PolRate \cdot D^{Eligible} \cdot D^{QE}$	−0.033**	−0.028**	−0.028**	−0.010	−0.005	−0.026*
	(−2.453)	(−2.133)	(−2.517)	(−1.591)	(−0.937)	(−1.754)
$\Delta repo^{Special}$ lagged	−0.357***	−0.357***	−0.359***	−0.356***	−0.356***	−0.352***
	(−39.264)	(−39.264)	(−38.341)	(−37.516)	(−37.058)	(−38.194)
N	705,633	705,633	701,859	681,324	678,897	699,266
R^2	0.115	0.115	0.117	0.114	0.115	0.113

The table reports the regression results examining the impact of asset eligibility for quantitative easing on the monetary policy pass-through for alternative monetary policy target rates. The dependent variable is the change in the special repo rate $\Delta repo^{Special}$. $\Delta PolRate$ denotes the change in different policy rates. D^{QE} equals 1 during the PSPP. $D^{Eligible}$ equals 1 if a security is (hypothetically) eligible for purchase under the PSPP. ***, **, and * represent significance at a 1, 5, and 10% level, respectively; t-statistics are in parentheses. All regressions include ISIN-month-term fixed effects and heteroskedastic-robust standard errors. Data include special repo transactions for core European countries pooled across the term types TN and SN for the time-period 2010–2018.

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Appendix: Alternative policy rates

Table 4.17. Collateral eligibility: All countries

	(1) EONIA	(2) €STR	(3) euro LIBOR	(4) zero OIS	(5) zero EURIBOR	(6) OIS 1W
	$\Delta repo^{Special}$	$\Delta repo^{Special}$	$\Delta repo^{Special}$	$\Delta repo^{Special}$	$\Delta repo^{Special}$	$\Delta repo^{Special}$
	TN/SN b/t	TN/SN b/t	TN/SN b/t	TN/SN b/t	TN/SN b/t	TN/SN b/t
$\Delta PolRate$	0.101***	0.101***	0.092***	0.055***	0.040***	0.065***
	(18.358)	(18.358)	(15.576)	(14.263)	(12.556)	(11.882)
D^{QE}	−0.016*	−0.016*	−0.039***	−0.031***	−0.034***	−0.040***
	(−1.740)	(−1.729)	(−3.990)	(−3.185)	(−3.471)	(−4.399)
$\Delta PolRate \cdot D^{QE}$	−0.089***	−0.083***	−0.086***	−0.033***	−0.018***	0.030**
	(−8.198)	(−7.669)	(−9.474)	(−6.308)	(−3.803)	(2.538)
$D^{Eligible}$	0.004	0.004	0.004	0.001	0.001	0.002
	(0.649)	(0.642)	(0.685)	(0.218)	(0.124)	(0.298)
$\Delta PolRate \cdot D^{Eligible}$	−0.004	−0.004	0.007	−0.003	−0.003	0.039***
	(−0.565)	(−0.565)	(0.902)	(−0.634)	(−0.659)	(5.593)
$\Delta PolRate \cdot D^{Eligible} \cdot D^{QE}$	−0.028**	−0.024*	−0.005	−0.001	−0.002	−0.013
	(−2.119)	(−1.781)	(−0.439)	(−0.103)	(−0.287)	(−0.857)
$\Delta repo^{Special}$ lagged	−0.362***	−0.362***	−0.363***	−0.360***	−0.360***	−0.358***
	(−51.915)	(−51.915)	(−50.806)	(−49.173)	(−48.554)	(−50.579)
N	943,349	943,349	938,391	913,396	910,329	934,884
R^2	0.118	0.118	0.120	0.118	0.118	0.117

The table reports the regression results examining the impact of asset eligibility for quantitative easing on the monetary policy pass-through for alternative monetary policy target rates. The dependent variable is the change in the special repo rate $\Delta repo^{Special}$. $\Delta PolRate$ denotes the change in different policy rates. D^{QE} equals 1 during the PSPP. $D^{Eligible}$ equals 1 if a security is (hypothetically) eligible for purchase under the PSPP. ***, **, and * represent significance at a 1, 5, and 10% level, respectively; t-statistics are in parentheses. All regressions include ISIN-month-term fixed effects and heteroskedastic-robust standard errors. Data include special repo transactions for all European countries pooled across the term types TN and SN for the time-period 2010–2018.

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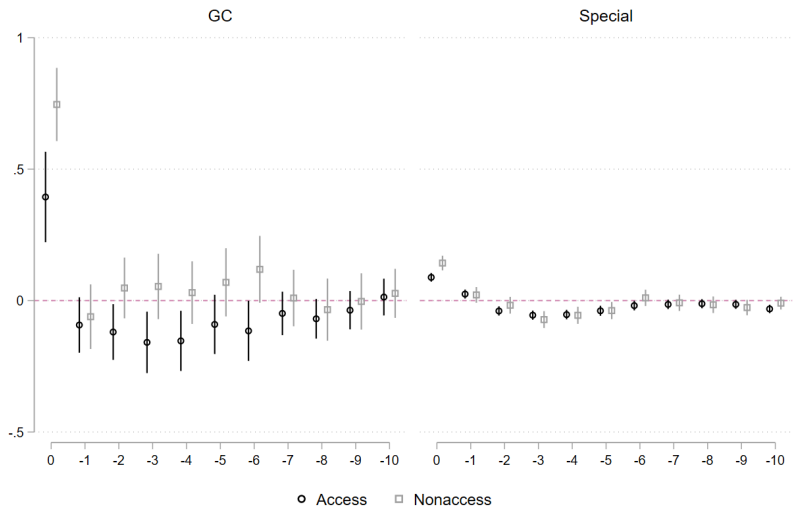
Appendix: Market spillover



Appendix: Regression results for Joint Effects - Eligible Share in GC Baskets

Table 5. Joint effects of both forms of segmentation

	Germany			Core			All		
	(1a)	(1b)	(2)	(3a)	(3b)	(4)	(5a)	(5b)	(6)
	$\Delta repo^{GC}$	$\Delta repo^{GC}$	$\Delta repo^{Special}$	$\Delta repo^{GC}$	$\Delta repo^{GC}$	$\Delta repo^{Special}$	$\Delta repo^{GC}$	$\Delta repo^{GC}$	$\Delta repo^{Special}$
	ON/TN b/t	ON/TN b/t	TN/SN b/t	ON/TN b/t	ON/TN b/t	TN/SN b/t	ON/TN b/t	ON/TN b/t	TN/SN b/t
$\Delta PolRate$	0.475***	0.599***	0.159***	0.576***	0.606***	0.154***	0.606***	0.653***	0.160***
	(5.030)	(6.026)	(12.959)	(10.521)	(10.483)	(17.617)	(12.420)	(12.430)	(18.668)
D^{Dep}	−0.067**	−0.066**	0.015***	−0.037***	−0.037***	0.005	−0.024**	−0.024**	0.006**
	(−2.456)	(−2.400)	(2.794)	(−2.699)	(−2.733)	(1.575)	(−2.077)	(−2.095)	(2.147)
$\Delta PolRate \cdot D^{Dep}$	0.361***	0.458***	0.012	0.383***	0.389***	0.103***	0.349***	0.362***	0.105***
	(2.692)	(2.814)	(0.416)	(4.260)	(4.343)	(4.510)	(4.165)	(4.358)	(4.686)
D^{Access}	−0.004	−0.003	−0.005***	−0.006	−0.006	−0.005***	−0.005	−0.005	−0.005***
	(−0.265)	(−0.193)	(−2.582)	(−1.018)	(−0.940)	(−4.127)	(−0.908)	(−0.794)	(−4.455)
$\Delta PolRate \cdot D^{Access}$	−0.181**	−0.183*	−0.062***	−0.260***	−0.265***	−0.063***	−0.311***	−0.311***	−0.074***
	(−2.015)	(−1.836)	(−5.181)	(−4.594)	(−4.732)	(−7.875)	(−6.132)	(−6.135)	(−9.305)
$\Delta PolRate \cdot D^{Access} \cdot D^{Dep}$	−0.606***	−0.795***	−0.161***	−0.456***	−0.525***	−0.225***	−0.402***	−0.477***	−0.214***
	(−3.775)	(−4.232)	(−5.413)	(−4.341)	(−4.890)	(−9.418)	(−4.035)	(−4.719)	(−8.988)
D^{QE}	−0.113	−0.119	−0.014	−0.047	−0.053	−0.007	−0.056	−0.062	−0.012
	(−1.489)	(−1.519)	(−1.231)	(−1.340)	(−1.503)	(−0.983)	(−1.071)	(−1.191)	(−1.309)
$D^{Eligible}$	−0.017	−0.008	0.003	−0.010**	0.010*	0.005	−0.010**	0.007	0.005
	(−1.509)	(−0.681)	(0.371)	(−2.047)	(1.910)	(0.911)	(−2.180)	(1.603)	(0.908)
$\Delta PolRate \cdot D^{Eligible}$	0.252***	0.045	−0.006	0.141***	0.077*	0.006	0.102**	0.006	0.005
	(3.338)	(0.490)	(−0.541)	(3.255)	(1.782)	(0.816)	(2.576)	(0.138)	(0.643)
$\Delta PolRate \cdot D^{Eligible} \cdot D^{QE}$	−0.315***	−0.040	−0.097***	−0.429***	−0.301***	−0.104***	−0.349***	−0.220***	−0.110***
	(−2.872)	(−0.261)	(−5.713)	(−6.802)	(−5.256)	(−9.822)	(−5.467)	(−3.633)	(−11.432)
$\Delta repo$ lagged	−0.340***	−0.341***	−0.364***	−0.338***	−0.338***	−0.357***	−0.337***	−0.338***	−0.360***
	(−11.817)	(−11.603)	(−20.711)	(−22.734)	(−22.683)	(−35.249)	(−24.814)	(−24.821)	(−40.685)
N	6,802	6,484	301,475	30,314	29,996	628,208	37,453	37,135	759,772
R^2	0.262	0.255	0.119	0.239	0.237	0.115	0.233	0.231	0.118

All regressions include basket-month-term fixed effects and heteroscedasticity-robust standard errors.

Repo market

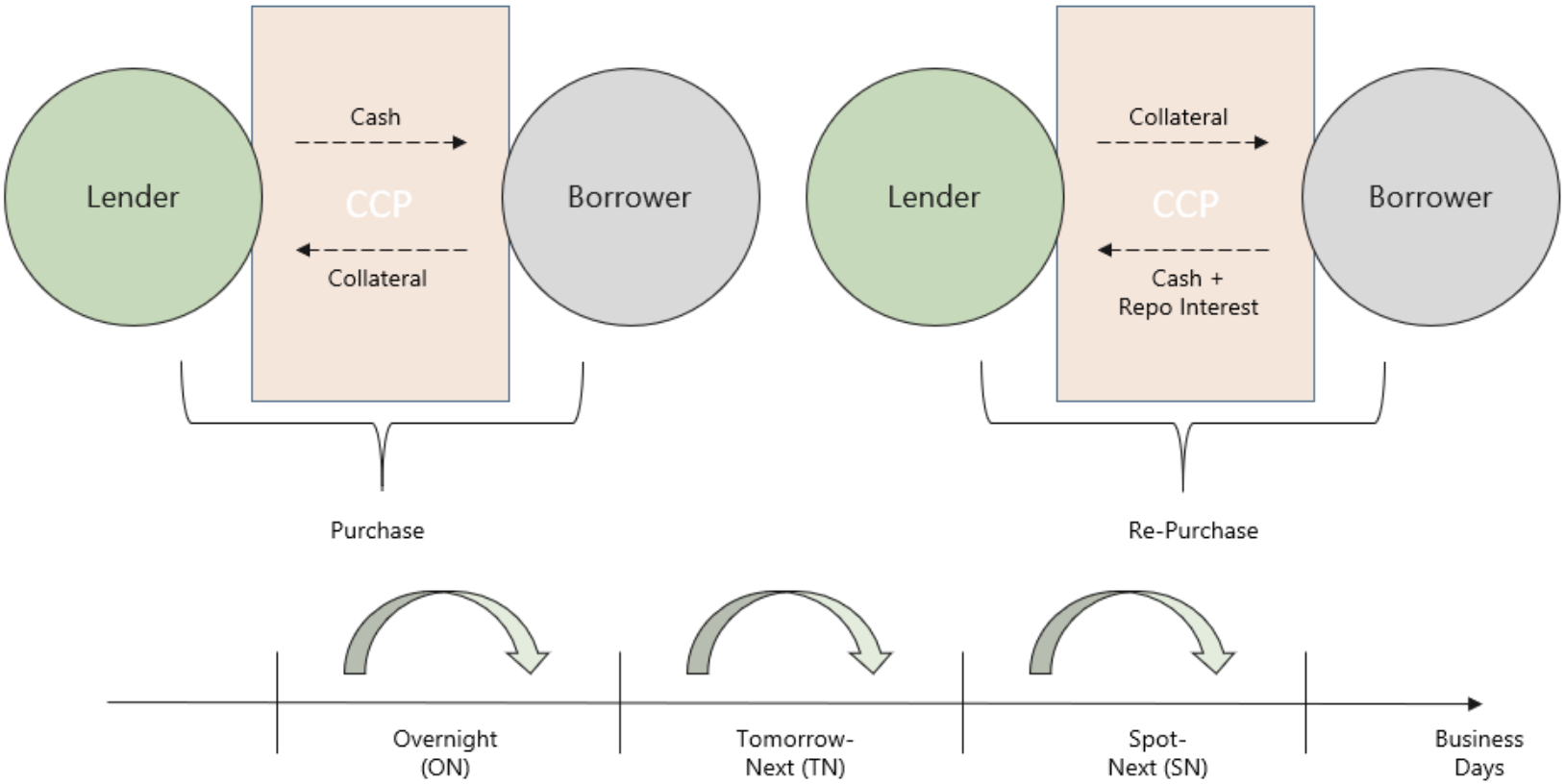


Figure: Repo market

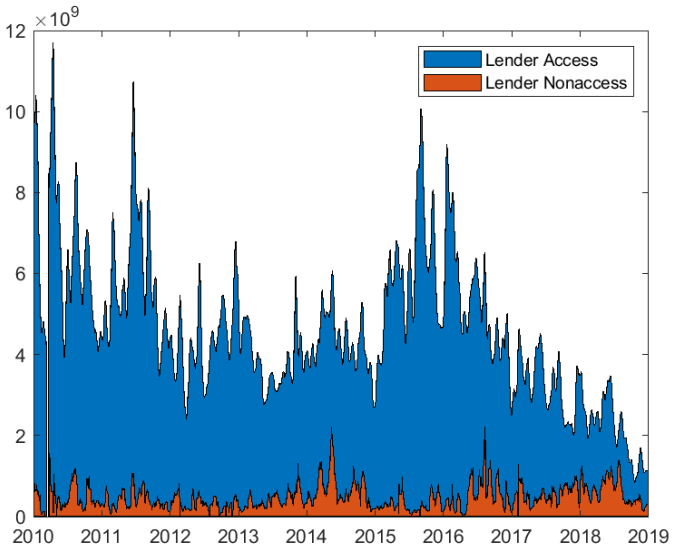
Regression results

Table 4. Asset eligibility: time since eligibility

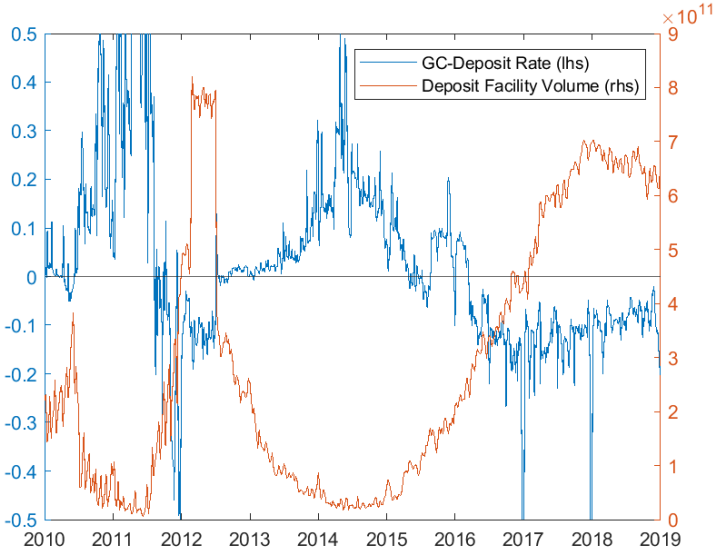
	Germany		Core		All	
	$\Delta repo^{Special}$	$\Delta repo^{Special}$	$\Delta repo^{Special}$	$\Delta repo^{Special}$	$\Delta repo^{Special}$	$\Delta repo^{Special}$
	TN/SN b/t	TN/SN b/t	TN/SN b/t	TN/SN b/t	TN/SN b/t	TN/SN b/t
$\Delta PolRate$	0.106***	0.106***	0.105***	0.105***	0.099***	0.099***
	(19.643)	(19.643)	(31.179)	(31.179)	(30.205)	(30.205)
D^{QE}	−0.015	−0.016	−0.008	−0.008	−0.016*	−0.016*
	(−1.380)	(−1.423)	(−1.102)	(−1.157)	(−1.699)	(−1.736)
$\Delta PolRate \cdot D^{QE}$	−0.094***	−0.120***	−0.080***	−0.103***	−0.070***	−0.082***
	(−9.018)	(−8.469)	(−11.341)	(−9.773)	(−10.103)	(−7.509)
$\Delta PolRate \cdot TSE$	−0.001***		−0.001***		−0.001***	
	(−9.635)		(−9.882)		(−10.592)	
$\Delta PolRate*$						
TSE^1_{Bucket}		−0.008		−0.010		−0.022*
		(−0.486)		(−0.847)		(−1.802)
TSE^2_{Bucket}		−0.279***		−0.086**		−0.036
		(−5.995)		(−2.491)		(−1.344)
TSE^3_{Bucket}		−0.470***		−0.459***		−0.382***
		(−6.521)		(−9.542)		(−11.200)
$\Delta repo^{Special}$ lagged	−0.364***	−0.364***	−0.357***	−0.357***	−0.362***	−0.362***
	(−20.715)	(−20.716)	(−39.263)	(−39.265)	(−51.913)	(−51.917)
N	301,608	301,608	705,633	705,633	943,349	943,349
R^2	0.119	0.119	0.115	0.115	0.118	0.118

All regressions include ISIN-month-term fixed effects and heteroscedasticity-robust standard errors.

ECB access



(a) General collateral trading volume



(b) Spread between GC and deposit facility rate

Figure: General collateral repo market

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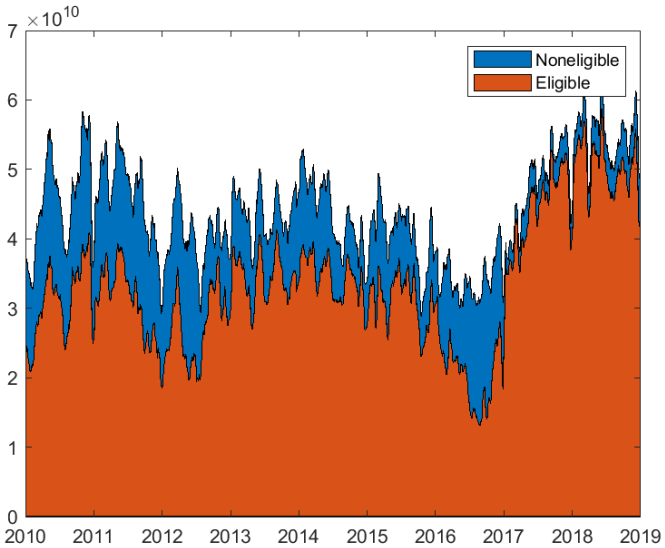
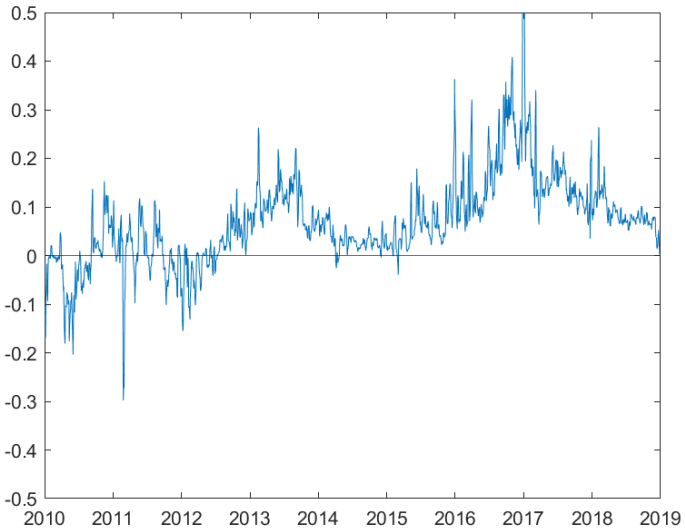
Collateral eligibility



(a) Special collateral trading volume



(b) Spread between (hypothetically) eligible and noneligible collateral

Figure: Special collateral repo market

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