

**A New World Post COVID-19**

Lessons for Business, the Finance Industry and Policy Makers

edited by Monica Billio and Simone Varotto

# The European Repo Market, ECB Intervention and the COVID-19 Crisis

**Monica Billio**

Università Ca' Foscari Venezia, Italia

**Michela Costola**

Università Ca' Foscari Venezia, Italia

**Francesco Mazzari**

Università Ca' Foscari Venezia, Italia

**Loriana Pelizzon**

Leibniz Institute for Financial Research SAFE, Frankfurt, Deutschland;

Università Ca' Foscari Venezia, Italia

**Abstract** During the COVID-19 crisis, the combined effect of ECB communications, concerns on sovereigns' stability, illiquidity and market expectations led to a flight to quality. This produced a sell-off of peripheral sovereign bonds that drove the repo rates of core and peripheral countries out-of-sync. Two ECB announcements affected the repo market, namely (i) the Press Conference of the ECB Governing Council on March 12, 2020 and (ii) the announcement of a €750 billion Pandemic Emergency Purchase Program (PEPP). These two announcements had heterogeneous effects in the European repo market which we shall investigate.

**Keywords** COVID-19 crisis. ECB announcements. European repo market. Repo specialness. Flight-to-quality.

**Summary** 1 Introduction. – 2 The European Repo Market in the Last Decade. – 3 The European Repo Market During the COVID-19 Crisis. – 4 Conclusions.



**Edizioni**  
Ca' Foscari

**Innovation in Business, Economics & Finance 1**

ISBN [ebook] 978-88-6969-442-4

**Open access**

Published 2020-07-31

© 2020 Creative Commons Attribution 4.0 International Public License

**DOI 10.30687/978-88-6969-442-4/004**

57

## 1 Introduction

The outbreak of the COVID-19 pandemic and the unprecedented lockdowns imposed by European member states in March 2020 marked the beginning of a crisis in the repurchase agreements (namely 'repo') market. As a result, repo rates of European core countries (i.e. Germany, France, the Netherlands and Belgium) and peripheral countries (i.e. Spain, Italy, Greece, Ireland and Portugal) went out-of-sync.<sup>1</sup> The events during this period not only shed light on the role of illiquidity and ECB announcements in this market, but also on the tight nexus between the repo and the secondary bond cash market. The repo market plays an essential role in banks' liquidity and collateral management as well as in the transmission of monetary policy (Cœuré 2017). Therefore, changes in monetary policy may impact on the repo rate and the wider financial system.

This paper investigates how monetary policy announcements by the ECB and specifically its quantitative easing announcements affected European repo rates during the COVID-19 crisis. This is a time when many firms needed access to the repo market in order to manage intraday liquidity and collaterals. In particular, we highlight how flight-to-quality impacted the repo market during the pandemic and how the repo market is strongly influenced by ECB monetary announcements.

## 2 The European Repo Market in the Last Decade

The market for repos consists of secured, over-collateralised, short-term, two-leg money market transactions in which the cash-taker simultaneously sells a security at the current spot price and enters into a forward agreement to buy the security back at a pre-specified price. The difference between the selling and purchasing price of the security is the repo rate. Repo contracts are either driven by the need for funding (i.e. General Collateral - GC transactions) or the need for a specific collateral (i.e. Special Collateral - SC transactions). In GC transactions, the exchanged collateral is unspecified and can be chosen amongst a basket of deliverable securities. However, in SC transactions, the collateral to be exchanged is specified. This is why special repos are entered into at a lower rate than general collateral repos because collat-

---

<sup>1</sup> In the European Union, peripheral countries are characterised by high debt-to-GDP ratios, lower employment levels and lower GDP per capita ratios (Kinsella 2012). Clustering between the core and the periphery was especially highlighted during the 2010-12 sovereign debt crisis. Peripheral countries were the Member States that have been hit the most by the crisis. In this paper, the peripheral countries that are analysed are Italy and Spain and the core countries are Germany, France, the Netherlands and Belgium.

eral scarcity may be envisaged as a dividend for the cash-taker, i.e. a convenience yield for holding the collateral rather than the cash. The collateral traded on such transactions is said to be 'on special', so that its repo rate is lower than the corresponding GC repo rate. With the Deposit Facility Rate (DFR), the rate at which the Central Bank remunerates reserves, being lower than zero, we have also started to observe negative repo rates. This implies that the buyer (who is lending cash) effectively pays an interest to the seller, who is borrowing cash (ICMA 2013) or, put differently, the lender pays a fee to borrow the collateral.

In the European market, repo agreements are mostly entered into three dealer-to-dealer electronic trading platforms: Eurex Repo, BrokerTec and MTS (mostly for the Italian market), which link to several central clearing counterparties (CCPs), such as LCH.Clearnet LTD, LCH.Clearnet SA and Cassa di Compensazione e Garanzia (CC&G) for the Italian market (Mancini, Ranaldo, Wrampelmeyer 2015). Eurex Repo GmbH is the leading platform for GC transactions and relies on Eurex Clearing AG (Deutsche Boerse Group) as CCP and on Clearstream for collateral management and settlement. This platform uses mainly two baskets to manage transactions: the GCP ECB basket and the ECB EXTENDED basket. BrokerTec is the largest platform for SC transactions and is operated by ICAP plc. MTS is part of MTS Group whose majority stake is owned by the London Stock Exchange (Mancini, Ranaldo, Wrampelmeyer 2015).

Repo contracts are said to be over-collateralised as a haircut is applied to each operation in order to account for credit and liquidity risk. The collateral value is given by the difference between the market value of the traded collateral and the market value of the portion of collateral used as haircut. The securities for which the lowest haircut is applied are central government bonds. However, sovereign risk in the euro area varies widely between core and peripheral countries. For this reason, the rate at which an investor is willing to lend cash in exchange for a collateral differs according to the sovereign risk of the collateral.

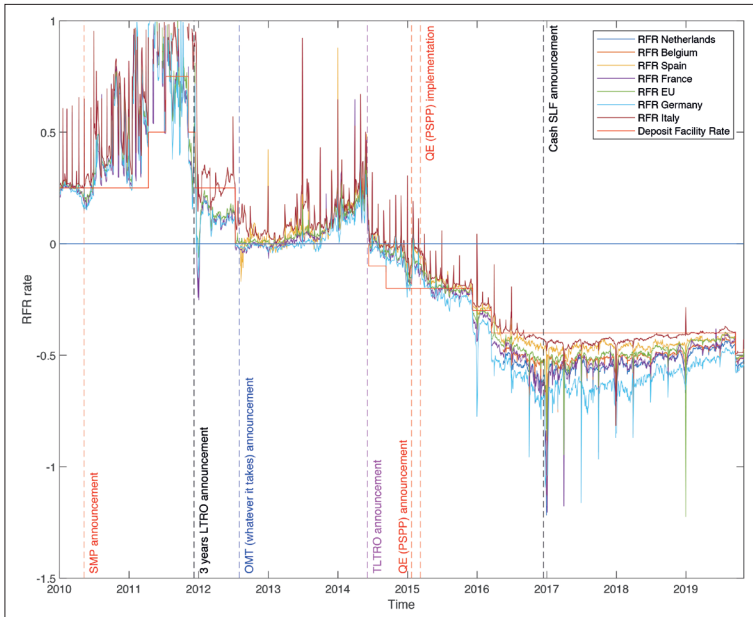
This aspect is well represented in figure 1 which shows the Repo-Funds Rate (RFR) indexes for Belgium, France, Germany, Italy, the Netherlands and Spain as well as the average repo rate for the Eurozone [fig. 1]. RFRs are based on the average of both general and special collateral transactions settled on the three aforementioned platforms where the collaterals accepted are all government bonds.

As it is shown, in January 2010, there was almost no difference in the RFR indexes for all the countries considered, i.e. the market was not charging different rates for transactions based on the German Bund or the Italian BTP. However, starting with the Greek sovereign crisis, repo rates began to diverge. The figure reports that the RFR indexes for Germany and the Netherlands are the lowest from that date onwards, indicating that German and Netherlands government bonds represent the safest collateral traded in the market. By

contrast, the RFR index for Italy is riskiest collateral among the analysed countries in most of the sample period (with Spain occasionally taking the lead).

More generally, figure 1 gives a historical representation of the effects of the ECB's Balance Sheet Policies (BSPs) announcements on the repo market since the sovereign debt crisis (outliers are trimmed).<sup>2</sup>

**Figure 1** RFRs from 2010 and some major announcements



This figure shows the average daily repo rates for six European countries (Belgium, France, Germany, the Netherlands, Italy and Spain) as well as the average repo rates for the Euro, the deposit Facility Rate offered by the ECB and five event lines. The five event lines represent: (1) SMP announcement on May 10, 2010; (2) Announcement of the 3 years Longer Term Refinancing Operations on December 8, 2011; (3) Outright Monetary Transactions (i.e. OMT) announcement on August 2, 2012; (4) Targeted Longer Term Refinancing Operations (TLTRO) on June 5, 2014; (5) Cash Security Lending Facility announcement on December 8, 2016. Repo Funds Rate data has been downloaded from <http://www.repofundsrate.com/> for the Netherlands, Belgium, Spain, France, the European Union, Germany and Italy. The RFR Netherlands and RFR Belgium time series start from May 16, 2016. Data on RFR Spain starts from August 6, 2012. The Deposit Facility Rate time series has been downloaded from the ECB's Statistical Data Warehouse.

<sup>2</sup> For a detailed description of the evolution of the repo market during the sovereign crisis of 2010-12 see Corradin, Maddaloni 2019.

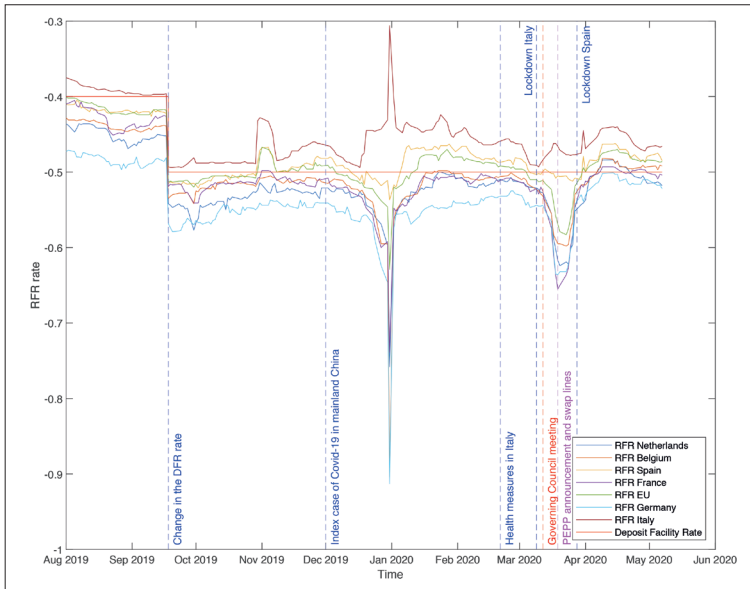
The pattern of the repo market is quite striking in the period after the QE announcement, i.e. after 2015. The implementation of a buy-and-hold Public Sector Purchase Program (PSPP) led (mostly) National Central Banks to buy central government bonds in the secondary cash market, in turn reducing the availability of collateral for repo transactions. The QE produced the strongest effects on repo rates of the safest countries due to their superior funding conditions, increasing scarcity until even GC rates were pushed below zero. Furthermore, two regulatory factors contributed to increase the scarcity of High Quality Liquid Assets (HQLA) at reporting dates. Firstly, the implementation of the Basel III non-risk-weighted capital requirements, such as the leverage ratio, strengthened window dressing in banks' balance sheets, increasing the scarcity of the safest collateral in these dates. Secondly, accounting practices and the implementation of the European market infrastructure regulation (EMIR) created an opposite shock for the demand and supply of repo transactions in the periods in which these contracts were needed the most (Ranaldo, Schaffner, Vasios 2019). For these reasons, core countries' RFRs are affected by quarterly negative spikes, as the scarcity of HQLA is the highest in these periods. Interestingly, the effect on peripheral countries is the opposite. As one can see from figure 2, RFR Italy reached record-high levels on the same dates, due to the intrinsic risk of the collateral [fig. 2]. The average European effect has been negative overall.

This effect has been exacerbated through time, as highlighted in figure 2. The figure shows that the joint effect of the scarcity channel activated by the implementation of unconventional monetary policies and the enforcement of non-risk-weighted capital requirements in the Basel III framework inverted the usual relationship between repo rates and the DFR. This might be surprising given that at the DFR the ECB remunerates the excess reserves of banks, preventing transactions in the money market to be concluded at a lower interest rate. However, as Arata et al. (2020) demonstrate, Basle III prevents banks that have access to the ECB to arbitrage away transactions concluded in the repo market at a lower interest rate than the DFR. Even if core countries' repo rates adjusted to the 50 basis point cut of the DFR on September 18, 2019, scarcity and market segmentation affected their levels by pushing them below it.

### 3 The European Repo Market During the COVID-19 Crisis

How does the European repo market react to the COVID-19 crisis? In this section we highlight the role of policy announcements, concerns on sovereigns' stability, scarcity and market expectations on the economic outcomes of the health crisis in the repo market tur-

Figure 2 RFRs in 2019 and 2020

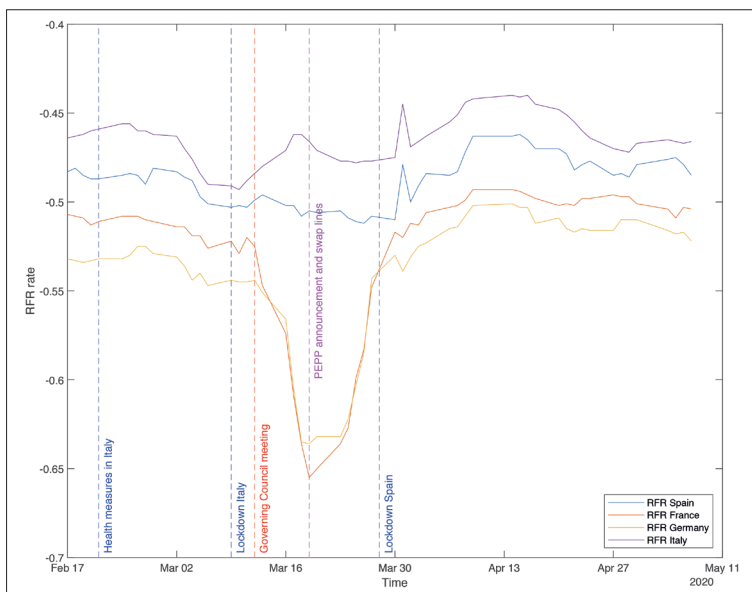


This figure reports the Repo Funds Rates (RFRs) between August 2019 and May 2020. The blue dashed event line represents the change in the Deposit Facility Rate (DFR) occurred on September 19, 2019. RFR data has been downloaded from <http://www.repo fundsrate.com/> for the Netherlands, Belgium, Spain, France, European Union, Germany and Italy. The DFR time series has been downloaded from the ECB's Statistical Data Warehouse.

moil of March 2020. The unfolding and resolution of the tensions developed mostly in a few weeks.

Three events characterised the evolution of the crisis: (i) the lockdown in Italy at the end of February and first half of March, 2020; (ii) the Press Conference of the ECB Governing Council on March, 12 2020, and; (iii) the announcement of a € 750 billion Pandemic Emergency Purchase Program (PEPP) on March 18, 2020. Figures 2 and 3 depict the three events and the heterogeneous consequences of the announcements in the repo market. In figure 3, the sample of countries analysed is restricted to two core countries, namely France and Germany, and two peripheral countries, namely Italy and Spain, to better focus on the dynamic between the core and the periphery [fig. 3].

**Figure 3** RFRs during the COVID-19 crisis



This figure shows the RFRs during the COVID-19 crisis for two core countries (Germany and France) and two peripheral countries (Spain and Italy). The figure also reports six event lines that represent: (1) Enforcement of health measures in Italy on February 21, 2020; (2) Beginning of the lockdown in Italy on March 9, 2020; (3) Meeting of the ECB Governing Council on March 12, 2020; (4) Activation of swap lines between the Bank of Canada, the Bank of England, the Bank of Japan, the European Central Bank, the Federal Reserve, and the Swiss National Bank on March 18, 2020; (5) Announcement of the Pandemic Emergency Purchase Program on March 18, 2020; (6) Beginning of the Lockdown in Spain on March 28, 2020. RepoFunds Rate data has been downloaded from <http://www.repofundsrate.com/> for Spain, France, Germany and Italy.

Figure 2 shows that the six countries considered in our analysis entered the COVID-19 crisis with different repo rates. The RFRs of Italy and Spain and the average Repo-Funds Rate of the Eurozone were above the DFR, whereas the average RFRs of core countries were below the DFR. The difference between the Italian RFR and the German RFR indexes was equal to about 7 basis points, which was impacted a lot by the COVID-19 crisis. By March 17, this difference more than doubled and reached 17 basis points as the Italian RFR increased and the German and French RFRs significantly decreased.

The figures review the differential effects of the policy announcement on the repo market. Italy and Spain are the two countries most severely hit by the coronavirus, societally as well as economically. Figure 3 already shows a large increase of the Italian repo rates af-

ter the national lockdown was imposed, but the Italian RFR, on the one hand, and the German and French RFRs, on the other, started to significantly diverge after the first policy announcement. Figure 3 details that repo rates signalled early warnings of distress in the first half of March. Indeed, as the consequences of the pandemic materialised in Italy, concerns regarding the future economic and political measures that the country would have to implement started mounting. As a result, a sell-off of securities started in this period (ICMA 2020), making RFRs to trend downwards. However, this effect was not limited to core countries. Although March 2020 was characterised by a general appreciation of repo rates, the actual distress started after the first policy announcement on March 12, 2020. This event marked the beginning of a downwards adjustment of core countries' repo rates, making them persistently move out-of-sync with respect to the peripheral ones.

On March 12, the meeting of the ECB Governing Council deliberated measures aimed at addressing the increasing distress in financial markets as the health crisis was spreading in Western Europe. In particular, the Council adopted a dovish monetary policy stance focused on liquidity injections via additional (Targeted) Longer-Term-Refinancing-Operations. Additionally, it eased collateral eligibility criteria for securities pledged in Open Market Operations (OMOs). Moreover, to support the private sector, the Council decided to expand the existing Private Sector Purchase Programs, up until the effects of the crisis would diminish. Such measures were different from the ones taken by other Central Banks. For instance, the Federal Reserve cut interest rates by 150 basis points between March 3, 2020 and March 15, 2020. On March 15, 2020, in contrast to the first attempts of a quantitative tightening in 2019, the Fed opted for the implementation of a new QE to support the smooth functioning of the market and the effective transmission of monetary policy. Nonetheless, the dovish stance of the ECB Governing Council, a looming economic downturn and the ECB President's statement that closing spreads between member states' funding costs is not an ECB objective, failed to alleviate market tensions. Rather, the announcement re-awaked concerns on the financial stability of sovereigns, raising questions on the ability of peripheral countries struggling to tackle the coronavirus (like Italy) to cope with increased debt issuance. Consequently, the statement by the ECB President resulted in a flight to quality assets, which gave rise to a sell-off of the riskiest securities. In addition, spreads widened in the cash market and core repo rates collapsed to unprecedented levels in times when reporting obligations were not binding. In fact, the effects produced were moderate with respect to 2019-year end effects (ICMA 2020), but persistent and clustered between core and peripheral countries. Indeed, RFRs based on the safest collateral, plummeted to record lows, as



those treasuries were valued more with respect to the ones of other Eurozone states.

Another aspect highlighted by figure 3 is that the French RFR reached a negative peak at -65.5 basis points, which is even lower than the one of Germany which stood at -63.6 basis points. This is surprising as Germany is almost invariably the preferred safe haven in the sample period as shown in figures 1 and 2. However, the effect might be due to the fact that, in the European Union, the bulk of dollar-denominated transactions is carried out by French banks. By pledging collateral against liquidity, the amount of French sovereign bonds outstanding decreased, hence increasing their scarcity and decreasing their repo rate. In general, in the whole sample represented in figure 2, one can see that rates collapsed, and scarcity increased for several countries. But the impact on RFR Italy and RFR Spain was heterogeneous. Indeed, while the Spanish repo rate mildly cheapened during the week after the announcement, RFR Italy significantly appreciated in the same period. The level of uncertainty for Italian sovereigns was such that the Repo Funds Rate moved out-of-sync with respect to the sample of countries analysed. For these reasons, there is evidence that the joint effect of sovereign conditions and the severity of the virus played a major role in driving repo rates, as the effects on Italy and Spain were significantly different. The worsening of the health conditions in the latter country did not generate effects akin to the ones produced in the former. However, the response of Spanish RFR may be affected by the second policy announcement described below. As it became clear that the spread of COVID-19 was not only regional and that the number of cases was increasing in all Western Europe, the tensions on the first policy announcement compounded up until the second policy event on March 18, 2020, when the ECB Governing Council decided to implement a €750 Billion Pandemic Emergency Purchase Program (PEPP). Indeed, the announcement marked the nadir of the crisis as it restored market confidence into the stability of distressed sovereigns and alleviated pressures in the secondary bond cash market. For these reasons, the sell-off of risky assets ended and the negative trend and the volatility of repo rates in the previous days bounced back, up to normal levels. In addition, after the announcement, French rates increased to usual levels. However, it seems that the effect is mainly due to the activation of swap lines: arrangements to provide foreign currency liquidity to domestic commercial banks via agreements between Central Banks. As in Open Market Operations, Central Banks require the financial institutions to pledge HQLA as collateral in exchange for the currency. These measures are designed to tackle market stress and to alleviate illiquidity in dollar funding markets. In this period, the Bank of Canada, the Bank of England, the Bank of Japan, the European Central Bank, the Federal Reserve, and the Swiss National

Bank agreed upon the implementation of standing US dollar liquidity swap lines [fig. 3]. The last spike, which occurred in March 2020, marked the beginning of the last week prior to the first quarter-end, which is affected by reporting dates as previously explained. Then, the unfolding of the crisis drastically revealed the effect of the ECB communication policy on the sovereign bond cash market and, in turn, on the repo market.

#### 4 Conclusions

The crisis that resulted from the outbreak of the coronavirus in Western Europe did not only shed light on scarcity issues in the repo market but also on the tight nexus between funding and secondary bond cash markets. It especially highlighted the impact ECB announcements may have. Even though scarcity and market expectations on the economic outcomes of the health crisis may have significantly affected repo rates, there is evidence that the tensions originated from policy announcements may have fuelled the turmoil of March 2020. Instead of alleviating market tensions, the economic outlook and the statement of the ECB President during the Q&A emphasizing that the “ECB is not there to close spreads” reawakened concerns regarding the ability of peripheral countries struggling to tackle the virus to cope with increased debt issuance. The resulting flight to quality mostly affected core countries. There is also evidence that illiquidity in the dollar funding market may have further risen scarcity for the countries more involved in foreign currency transactions, such as France. Instead, the peripheral countries hit by the pandemic, e.g. Italy, were most negatively affected. As a result, their repo rates moved persistently out-of-sync with respect to the core countries. On the contrary, the announcement of expansionary monetary policies, the PEPP, significantly contributed to calm markets down, to restore confidence and its normal activity, and the swap lines restored the German bund as the most demanded collateral.

The repo market has a pivotal role in preserving the liquidity of the money market. The COVID-19 crisis created significant liquidity needs largely for non-financial firms. While demand for repos increased substantially during the height of the crisis in February/March due to flight to quality, dealers’ capacity to intermediate that demand was relatively constrained. This limited the ability of many firms to access the repo market which was badly needed to manage intraday liquidity and collaterals. Our analysis highlights the dependence of the repo market on central bank interventions in times of stress.

## Bibliography

- Arrata, W.; Nguyen, B.; Rahmouni-Rousseau, I.; Vari, M., (2020). "The Scarcity Effect of Qe on Repo Rates: Evidence from the Euro Area". *Journal of Financial Economics*. <https://doi.org/10.1016/j.jfineco.2020.04.009>.
- Briciu, L.; Lisi, G. (2015). *An Event-Study Analysis of ECB Balance Sheet Policies Since October 2008*. European Commission publications, Economic Brief 001, July 2015. <http://dx.doi.org/10.2765/844347>.
- Cœuré, B. (2017). "Asset Purchases, Financial Regulation and Repo Market Activity". Speech by Benoît Cœuré, Member of the Executive Board of the ECB, at the ERCC General Meeting, Brussels, 14 November, 2017.
- Corradin, S.; Maddaloni, A. (2019). "The Importance of Being Special: Repo Markets During the Crisis". *Journal of Financial Economics*, 137(2), 392-429. <https://doi.org/10.1016/j.jfineco.2020.02.006>.
- ICMA (2013). *Frequently Asked Questions on Repo*. International Capital Market Association.
- ICMA European Repo and Collateral Council (ERCC) (2020). *The European Repo Market and the COVID-19 Crisis*. International Capital Market Association.
- Kinsella, S. (2012). "Conventions and the European Periphery". *Journal of Balkan and Near Eastern Studies*. <https://dx.doi.org/10.2139/ssrn.2155577>.
- Mancini, L.; Ranaldo, A.; Wrampelmeyer, J. (2015). "The Euro Interbank Repo Market". *The Review of Financial Studies*, 29(7), 1747-79. <https://doi.org/10.1093/rfs/hhv056>.
- Ranaldo, A.; Schaffner, P.; Vasios, M. (2019). "Regulatory Effects on Short-Term Interest Rates". *Bank of England Working Paper No. 801*. <https://dx.doi.org/10.2139/ssrn.3397082>.