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Research Report

The market for short-term debt securities in Europe: What we know and what we do not know

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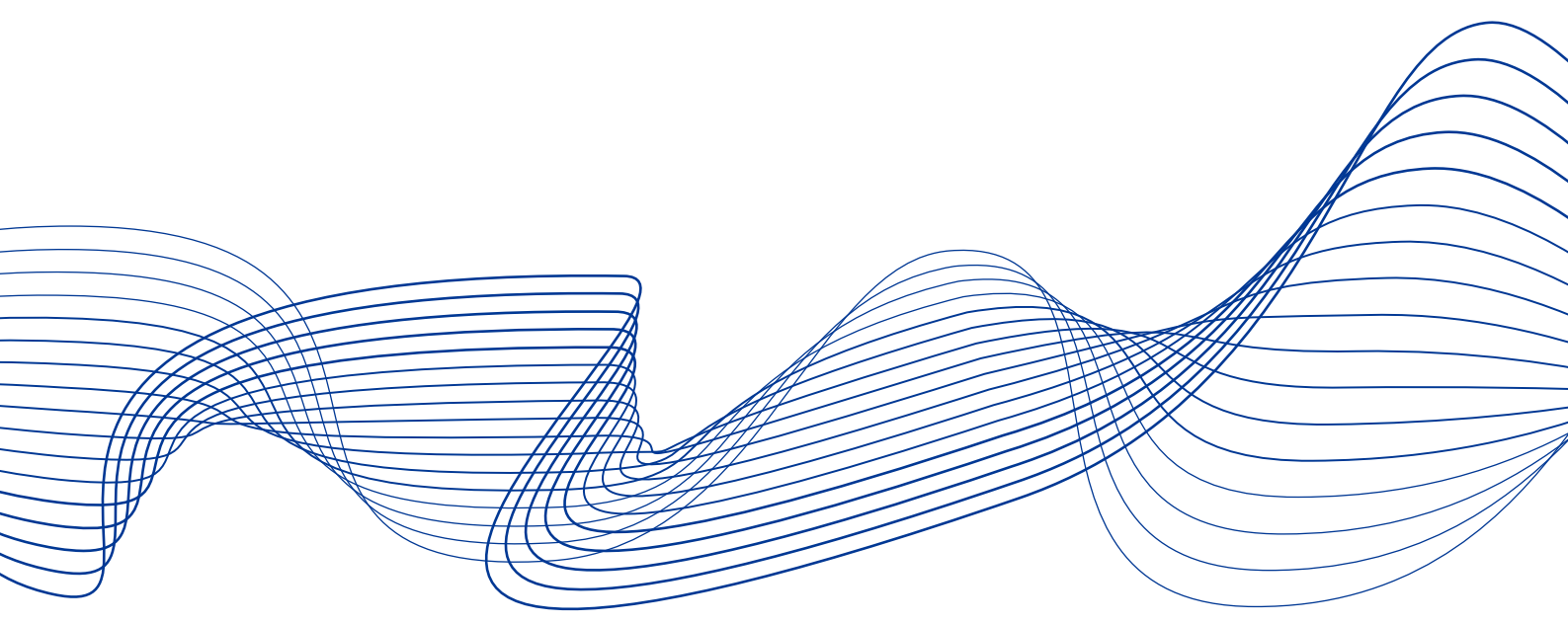
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The market for short-term debt securities in Europe: what we know and what we do not know

by
Pierre-Emmanuel Darpeix



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Abstract

In March 2020, against the backdrop of a worsening Covid crisis, some segments of the money market fund (MMF) industry faced severe redemption pressures. Given their central role within the short term funding market, MMFs were at the heart of financial stability concerns, and legitimately underwent careful reviews by macroprudential bodies and market supervisors to assess their vulnerabilities and propose policy options to remediate them.

Yet it is clear that MMFs are only one part of a wider ecosystem. These funds collect excess cash from some economic agents, which is predominantly invested in the markets for short-term debt securities, thus providing funding to a wide array of entities in need for short-term funding (banks, non-financial corporates, States, local governments, etc.). And clearly, beyond funds, vulnerabilities were also identified both on the underlying market and on the investors' side.

In order to complement the recommendations issued in January 2022 by the ESRB ahead of the scheduled revision of the MMF Regulation, and so as to provide a better understanding of vulnerabilities still widely unaddressed, the AMF conducted a stock-take analysis of the public information available on the very fragmented and opaque market for short-term debt instruments in Europe. Thanks to a fruitful collaboration with ESRB who shared internal databases, it was able to fill in some data gaps and provide new insights on this market. In particular, this stock-take gives the first comprehensive and consolidated estimate of the outstanding in question (more than EUR 2.2 trillion as of Dec.2020), with a breakdown according to issuer types, instrument types and currencies.

The analysis highlights the still unaddressed vulnerabilities such as the fragmentation of the market and of its supervision as well as the lack of a robust identification of Euro-CP and emphasizes the lack of transparency in the secondary market operations.

Keywords: Short term funding market, Commercial paper, Certificates of deposit, Treasury bills, STEP, NEU-CP, Euro-CP.

JEL Codes: D53, E58, E65, G15, G18, G23, H63.



Introduction

In March 2020, as the coronavirus (COVID-19) pandemic was worsening and governments around the world were imposing lockdown measures to contain it, money market funds (MMFs), especially in Europe and in the United States, experienced major redemption pressures.

The shock was not homogeneous, though. Initial analyses from the International Organization of Securities Commissions (IOSCO)¹, the ESRB² and the AMF³ highlighted structural differences depending on:

1. the underlying assets (e.g. USD-denominated public debt MMFs – whether onshore in the United States or offshore in Luxembourg and Ireland – experienced large inflows, while USD-denominated funds holding private debt recorded high redemptions);
2. the regulatory regime (e.g. in Europe for the short-term MMF segment, where low-volatility net asset value (LVNAV) funds experienced the largest outflows, while equivalent short-term variable net asset value (VNAV) – funds recorded no outflows overall);
3. the maturity profile (e.g. unlike short-term VNAVs, longer-maturity VNAVs experienced outflows on a substantial scale – yet not to the extent of short-term LVNAVs, especially given that about half the redemption pressure experienced by standard VNAVs during the March 2020 episode could actually be explained by a long-observed quarterly cyclicity in flows that is specific to this type of MMF).

MMFs saw a lot of tension during the March market turmoil. They were therefore scrutinised in considerable detail by the Financial Stability Board (FSB), which drew up policy proposals to enhance their resilience.⁴ In parallel, the ESRB drafted a recommendation to the European Commission⁵ for its 2022 review of the European Money Market Funds Regulation (MMFR)⁶.

Yet MMFs should not be considered in isolation but rather as a key element in the broader ecosystem of short-term finance. ESRB (2021) pointed out that investigations were still necessary to understand both the short-term securities markets through which MMFs invest, and the behavioural reactions that characterised MMF investors during the crisis. The causal relationship between the freeze on the short-term debt securities market (which triggered central bank

¹ Board of the International Organization of Securities Commissions (2020), “**Money Market Funds during the March-April Episode**” *Thematic Note*, OR03/2020, Madrid, November.

² European Systemic Risk Board (2021), “**Issues note on systemic vulnerabilities of and preliminary policy considerations to reform money market funds (MMFs)**”, Frankfurt am Main, July.

³ Darpeix, Pierre-Emmanuel and Mosson, Natacha (2021), “**Detailed analysis of the portfolios of French money market funds during the COVID-19 crisis in early 2020**”, *Risk and Trend Mapping*, AMF, Paris, May; Darpeix, Pierre-Emmanuel (2021), “**Econometric analysis of the determinants of redemption flows on French money market funds during the 2020 crisis**”, *Risk and Trend Mapping*, AMF, Paris, July.

⁴ Financial Stability Board (2021), “**Policy Proposals to Enhance Money Market Fund Resilience – Final Report**”, Basel, 11 October.

⁵ Recommendation of the European Systemic Risk Board of 2 December 2021 on reform of money market funds (**ESRB/2021/9**).

⁶ **Regulation (EU) 2017/1131** of the European Parliament and of the Council of 14 June 2017 on money market funds (OJ L 169, 30.6.2017, p.8).



interventions) and MMF redemptions is, indeed, still unclear, but in any case the crisis revealed structural vulnerabilities, data gaps and regulatory uncertainties for this market. On the investor side, two years after the March 2020 turmoil, work still needs to be done to fully understand the role of investors and corporates in the initial redemption pressure (among the reasons generally cited or identified are actual or anticipated operational cash needs, fears of first mover advantage on stable net asset value (NAV) funds, and margin calls) and the subsequent record high inflows over the second semester of 2020.

This document was developed to feed into the ESRB's reflections on the MMFR. It aims to present background work on the European market for short-term debt securities, clarifying concepts and terminology, and shedding lights on data gaps and overlaps in coverage by various sources that still hamper a proper diagnosis of the events of March 2020.

In the first section, we provide some insights into the general features of short-term debt instruments, set out certain practical market definitions, and indicate how these instruments are treated under European legislation.

In the second section, we describe the main market segments for short-term market securities, namely the Euro commercial paper (Euro-CP) market, the Negotiable European Commercial Paper (NEU-CP) market, the market for short-term treasury bills and the other (smaller) domestic commercial paper (CP) and certificate of deposit (CD) markets. For each of these segments, we have conducted a stock-taking exercise of the information and public data sources available, and point to the data gaps.

The third section summarises our interim conclusions on the initial diagnosis.

In the fourth section, we provide a first assessment of the consolidated short-term debt securities market, building on the Centralised Securities Database (CSDB), which compiles information on securities issued in the European Union, on securities issued elsewhere by European issuers, and on securities likely to be held by European investors. This database is provided by the ESRB. We complement our analysis with extracts from the Securities Holdings Statistics by Sector (SHSS), also provided by the ESRB, and with data on NEU-CP accessed through the Banque de France.

In the last section, we take a step back and highlight other elements missing from the diagnosis of the March 2020 turmoil: indeed, several key dimensions of the crisis are still largely unaddressed and deserve proper investigation.



1 Background definitions, regulatory framework and scope of the paper

First and foremost, we need to describe as clearly as possible what we mean by the *market for short-term debt securities in Europe*. Indeed, the terminology can be very confusing, with many overlaps.

The short-term debt instruments we are considering in this analysis are either **commercial paper** (CP), **certificates of deposit** (CDs) or **treasury bills**.

Those are generic terms that are not necessarily precisely defined by law. The “short-term” maturity is generally deemed to be less than a year.

According to IMF (2003), a CP is an “unsecured promise to pay a certain amount on a stated maturity date, issued in bearer form”, while a CD is “a certificate issued by a bank acknowledging a deposit in that bank for a specified period of time at a specified rate of interest”, essentially in the form of a “negotiable time deposit”. Treasury bills are “a common form of sovereign short-term debt”.⁷ Treasury bills are generally named in the official language of the country which issues them, and consequently, a large number of labels exist in this category.

To simplify the picture, we could say that CP, CDs and treasury bills essentially differ by the type of institution that issue them. CP is mostly issued by non-financial corporates (NFCs), CDs are issued almost exclusively by banks, while treasury bills can only be issued by sovereign states. Yet the reality is slightly more complex, as some banks, sovereign states and public entities also issue CP, while other financial institutions belonging to industrial conglomerates can issue CDs.

⁷ See IMF (2003), “**External Debt Statistics, Guide for Compilers and Users (Appendices)**”:
“**Commercial Paper (CP)**: Commercial paper is an unsecured promise to pay a certain amount on a stated maturity date, issued in bearer form. CP enables corporations to raise short-term funds directly from end investors through their own in-house CP sales team or via arranged placing through bank dealers. Short-term in nature, with maturities ranging from overnight to one year, CP is usually sold at a discount. A coupon is paid in a few markets. Typically, issue size ranges from \$100,000 up to about \$1 billion. In bypassing financial intermediaries in the short-term money markets, CP can offer a cheaper form of financing to corporations. But because of its unsecured nature, the credit quality of the issuer is important for the investor. Companies with a poor credit rating can obtain a higher rating for the issue by approaching their bank or insurance company for a third-party guarantee, or perhaps issue CP under a MOF (Multiple Option Facility), which provides a backup line of credit should the issue be unsuccessful.” (Index, p.223)
“**Certificate of Deposit (CD)**: A certificate issued by a bank acknowledging a deposit in that bank for a specified period of time at a specified rate of interest; CDs are essentially a form of negotiable time deposit (evidenced by the certificate). CDs are widely issued in the domestic and international markets, and are typically bearer instruments, issued at face value with original maturities of one to six months, although there have been maturities of up to seven years. Typically, interest costs are payable at maturity for issues of one year or less, and semiannually on longer issues. The rate of interest on a given CD depends on several factors: current market conditions, the denomination of the certificate, and the market standing of the bank offering it. Typically, CDs are highly liquid instruments, which allows banks access to a cheaper source of funds than borrowing on the interbank market.” (Index, p.222)
“**Treasury Bills**: A common form of sovereign short-term debt; many governments of the world issue treasury bills. Typically issued through the central bank with maturities ranging from four weeks to two years, they are typically issued at a discount to face value and are redeemed at par.” (Index, p.235)



Taken together, treasury bills, CDs and CP are generally referred to as **money market instruments** (MMIs).⁸ Under European law (MiFID II)⁹, money market instruments are “**financial instruments**”¹⁰, yet they are not necessarily “transferable securities” (i.e. they are not necessarily “negotiable on the capital market”).¹¹ The issue is that the obligation to report transactions to the securities regulator depends on the latter (Article 26, MIFIR).¹² Treasury bills are generally admitted on at least a trading venue, but this is only seldom the case for CP and CDs, consequently transactions in the latter two securities do not have to be reported.

Additionally, securities supervisors do not receive the prospectuses for CP or CDs for approval before issuance (in contrast with other types of security) given that the Prospectus Regulation¹³ applies to “securities”, which are defined in its Article 2 with reference to the “transferable securities” of MiFID II, while explicitly excluding “money market instruments”.¹⁴ Under French national law however, the Banque de France is responsible for oversight of the financial documentation of NEU-CP issuance programmes.¹⁵

As for the geographical scope, we focus not only on the European Union, but extend it to include other western European countries (Switzerland, Norway, Iceland, and, most importantly, the United Kingdom), given their close links to the EU market and the fact that issuers from these countries issue short-term debt securities in the EU while conversely, EU entities do issue short-term debt securities in the national currencies of those non-EU member countries. Furthermore, this extension is warranted by the key role played by the United Kingdom in the Euro-CP market (see the next section).

⁸ For instance, Art. 4(1)(17) of **MiFID II** (Directive 2014/65/EU) states that “*money market instruments means those classes of instruments which are normally dealt in on the money market, such as treasury bills, certificates of deposit and commercial papers and excluding instruments of payment*”. The definition is even clearer in Article 11 of **Commission Delegated Regulation (EU) 2017/565**: “*Money-market instruments in accordance with Article 4(1)(17) of Directive 2014/65/EU, shall include treasury bills, certificates of deposits, commercial papers and other instruments with substantively equivalent features where they have the following characteristics: (a) they have a value that can be determined at any time; (b) they are not derivatives; (c) they have a maturity at issuance of 397 days or less.*”

⁹ **Directive 2014/65/EU** of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU (OJ L 173, 12.6.2014, p. 349).

¹⁰ See Section C (Financial instruments) in Annex I of **MiFID II**.

¹¹ According to the definition set out in Article 4(1)(44) of **MiFID II**.

¹² In the exact words of Article 26 of MIFIR (**Regulation (EU) 600/2014** of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Regulation (EU) No 648/2012), obligations to report transactions apply in particular to “financial instruments which are admitted to trading, or traded on a trading venue or for which a request for admission to trading has been made”.

¹³ **Regulation (EU) 2017/1129** of the European Parliament and of the Council of 14 June 2017 on the prospectus to be published when securities are offered to the public or admitted to trading on a regulated market, and repealing Directive 2003/71/EC (OJ L 168, 30.6.2017, p. 12).

¹⁴ See **Regulation (EU) 2017/1129**, Article 2(a): “‘securities’ means transferable securities as defined in point (44) of Article 4(1) of Directive 2014/65/EU with the exception of money market instruments as defined in point (17) of Article 4(1) of Directive 2014/65/EU, having a maturity of less than 12 months”.

¹⁵ See Art **L.213-4** of the French Code monétaire et financier (Monetary and Financial Code).

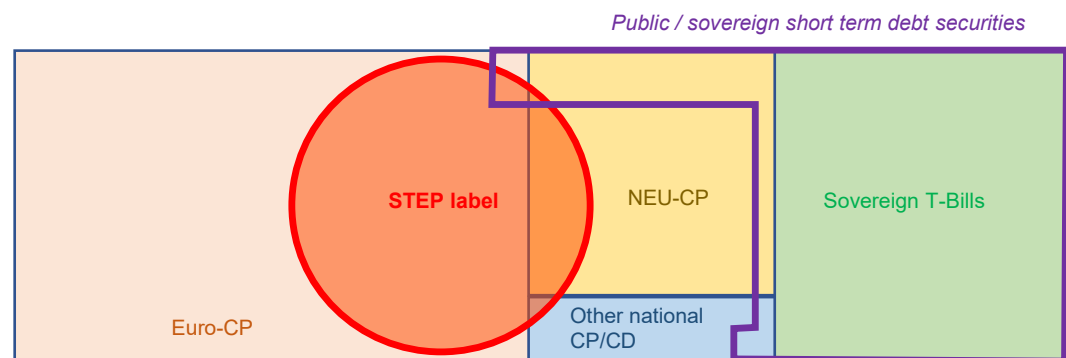


2 Components of the Short-term securities market in Europe

The European short-term debt securities market is, in fact, extremely fragmented. Broadly speaking, it is composed of four main blocks: the market for NEU-CP, the market for Euro-CP, the markets for other national CP/CDs, and the market for sovereign short-term bills. In addition, a label referred to as “STEP” (an acronym for “Short-Term European Paper”) has been applied by industry bodies as standard to the short-term securities, and can relate to any European CP/CD.

Figure 1

Attempt to represent the structure of the short-term debt market in Europe



Source: Author.

Note: The diagram is a first attempt to illustrate our understanding of the short-term debt securities market in Europe. The areas represent qualitatively the relative size of each segment, to the best of our knowledge (i.e. the Euro-CP market is larger than the treasury bill markets, followed by the NEU-CP market, and other national CP/CDs make up the rest). The overarching STEP label does not apply to treasury bills, but it may be applied to CP programmes issued by public entities.

2.1 Negotiable European Commercial Paper (NEU-CP)

Under the French Monetary and Financial Code¹⁶, short-term (a maturity of less than one year) and medium-term (a maturity of more than one year) debt securities are referred to as *Titres de créance négociables* (TCNs, literally “negotiable debt securities”), in contrast to longer-maturity debt securities, namely Obligations (bonds).

The issuing of TCNs is supervised by the Banque de France (**Article L213-4** of the Monetary and Financial Code). Prior to 2016, medium-term debt securities were referred to as *Bons à moyen terme négociables* (BMTN), while shorter-term private paper was labelled *Billets de trésorerie* (CP) and *Certificats de dépôt* (CDs).

¹⁶ See **Code monétaire et financier**, Partie Législative, Livre II, Titre Ier, Chapitre III (articles L213-0-1 à L213-35).



In 2016, the Reform of the French negotiable debt securities market introduced the trade name “NEU-CP” (Negotiable European Commercial Paper), and opened up the French-based CP/CDs market more broadly to international issuers and investors (in particular by allowing the financial documentation to be written in languages other than French).¹⁷

With this reform, the distinction between CP and CDs vanished, as both types of short-term security are now labelled NEU-CP (yet the Banque de France offers a breakdown by issuer type, namely banks, other-financials, non-financials, and public¹⁸). TCNs with an initial maturity of more than one year (previously referred to as BMTNs) are now called NEU-MTNs (Negotiable European Medium Term Notes).

This market is organised and regulated by the Banque de France. General information about the key features of NEU-CP is presented in a dedicated section of its institutional website.¹⁹ In particular, NEU-CP have a maturity of at most one year. The minimum amount is €150,000, and NEU-CP can be issued in euro or in any other currency.

The French primary market is relatively transparent. The Banque de France maintains a public list of issuers, with centralised access to the legal documentation of issuance programmes.²⁰ It should be noted, however, that information about the actual interest rate and international securities identification number (ISIN) of any given issue forming part of an issuance programme is not publicly available.

The Banque de France also publishes an average weekly issuance rate, broken down by maturity and by rating bucket.²¹ Detailed information on weekly volumes of CP issuance, matured CP and outstanding amounts of CP at issuer level is available on the website in the “Data weekly Excel forms”.²² In addition, a full historical record of monthly analyses is available permanently (with an additional breakdown by currency).²³

In short, except for the actual issuance rate and the ISIN for each issue, the primary market is fairly transparent, and the relevant data are compiled in a single website. This explains why much of the analysis conducted on the European short-term debt securities market focuses predominantly on this segment.²⁴

¹⁷ See Banque de France and Direction générale du Trésor (2016), “**Reform of the negotiable debt securities market (TCN)**”, May.

¹⁸ Note that there are indeed public issuers on the NEU-CP market (e.g. local and regional administrations, social security bodies and public hospitals), but we found no sovereign states among the current issuers.

¹⁹ See information on **key features of commercial paper and medium term notes** on the Banque de France’s website.

²⁰ See the Banque de France’s website: **list of issuers**.

²¹ See the Banque de France’s website: **Weekly statistical review**. Note that only the last six weeks are displayed in this page, but older reports can still be accessed by changing the date directly in the hyperlink.

²² See, for instance, the Banque de France’s website: **Statistical reports – Weekly Review from 07/08/2021 to 13/08/2021**.

²³ See the Banque de France’s website: **Monthly statistical review**.

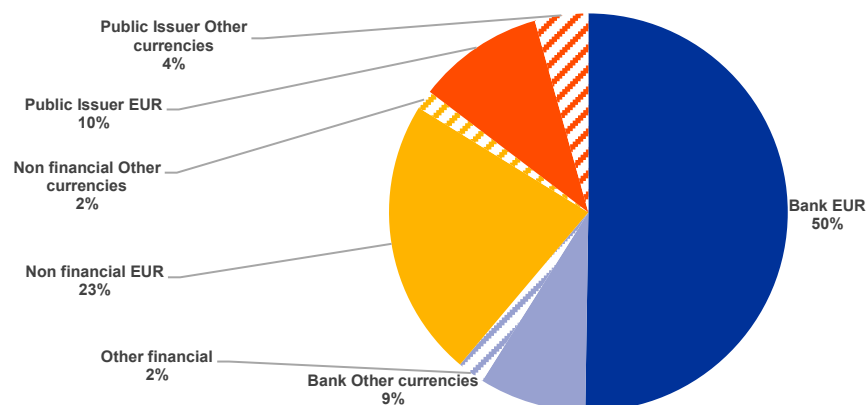
²⁴ See, for instance, ICMA Commercial Paper Committee (2021), “**The European Commercial Paper and Certificates of Deposit Market**”, *white paper*, International Capital Market Association, Zurich, September, 29 pages: eight graphs relate to the NEU-CP market as compared with only three for the larger E-CP market. See also ECB (2021), “**Euro money market study 2020 – Money market trends as observed through MMSR data**”, Frankfurt am Main, April (see in particular **Chapter 3: The short-term debt securities segment**, pp. 42-58). Here again, the analysis focuses on NEU-CP and STEP paper.



At the end of July 2021, the Banque de France reported outstanding NEU-CP amounting to €260 billion, of which €101 billion was issued by NFCs and €159 billion by financial issuers. 85% of this debt was issued in euro.²⁵

Chart 1

Structure of the NEU-CP outstanding as at end-July 2021

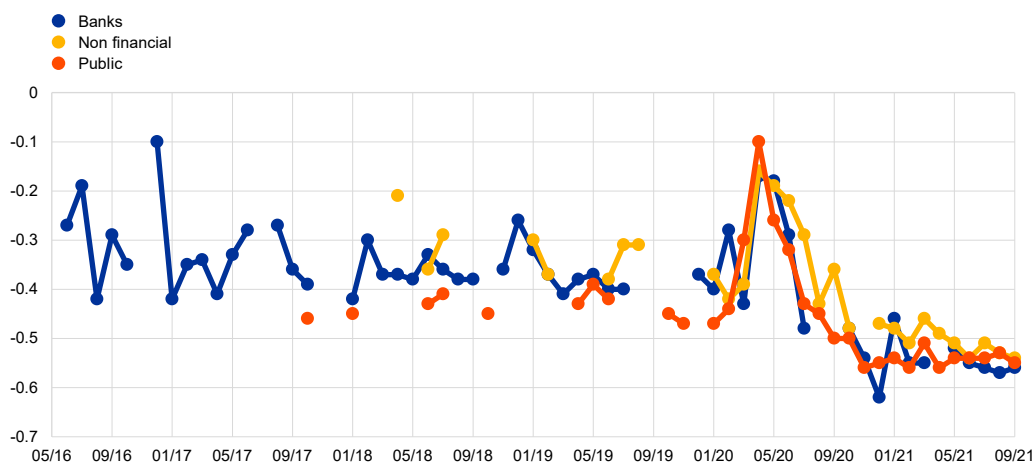


Source: Banque de France, July 2021 report on commercial paper.

Note: Asset-backed commercial paper (ABCP) is included in the “Other financial” category. At end-July 2021, ABCP amounting to €4.8 billion was outstanding under a NEU-CP programme.

Chart 2

Average monthly rate at issuance for three-month NEU-CP with the highest credit rating, by issuer type



Source: Banque de France, Monthly statistical review.

Note: When there is no data point, it means that the average could not be computed (no or too few issuances).

²⁵ See the July report on [commercial paper](#).



There is much less information on the secondary market, which is essentially over the counter (OTC). The Banque de France does not report any information on the prices and volumes exchanged, nor does it do so for bid/ask quotes and volumes. No information is available on the characteristics of central bank interventions on this specific market: indeed, we do not even know the total amount of NEU-CP that were purchased by central banks during the pandemics (the only available information on purchases by the European System of Central Banks aggregates NEU-CP with other types of CP – see Section 3.3).

2.2 Euro Commercial Paper (Euro-CP)

The market for Euro-CP (or ECP) appears to be much less consolidated than the NEU-CP market. Despite their name, Euro-CP can be denominated in euro or in any other currency (“Euro” refers to the fact that the securities are issued in Europe, just as it was common, from the US viewpoint, to talk of Euro-dollar when referring to offshore dollar funding).

In this regard, the International Capital Market Association (ICMA) report issued in 2021 emphasises that “the Euro Commercial Paper (ECP) market began life in 1985 as a means for issuers to tap the offshore short-term USD market outside of US jurisprudence” (emphasis ours) and adds, in a footnote, that Euro-CP cannot be sold to US-domiciled investors due to a lack of compliance with an SEC exemption.²⁶

It appears that most Euro-CP are governed by English law and that the minimum amount that it is possible to issue is USD 500,000 or the equivalent in other currency.²⁷ The ICMA indicates that the market is “traditionally based in London” and “largely absorbed the UK domestic sterling CP market”. No legal documentation on the requirements and definitions is easily accessible on the internet, and there is uncertainty as to which authority (if any) actually supervises the market.

There is no centralised public database providing a consolidated overview of the Euro-CP market. Using data from the private data provider “CMDportal.com”, ICMA (2021) estimated that the Euro-CP market represented an outstanding of slightly less than USD 1,000 billion in March 2021 (42% denominated in euro, 33% in USD and 18% in GBP).²⁸

Some information about the primary market is published on the Bank of England’s website. The Bank of England’s database provides monthly data on issuances and repayments, by sector, domicile of the issuer and currency, but resorts to the general abbreviation of “CP”²⁹. It is therefore not clear whether the data relate solely to Euro-CP, and significant effort to achieve a reconciliation would probably need be undertaken to avoid double-counting of issuances of other types of CP in these series (e.g. a UK firm that issued NEU-CP).

²⁶ ICMA Commercial Paper Committee (2021), “**The European Commercial Paper and Certificates of Deposit Market**”, *white paper*, International Capital Market Association, Zurich, September, 29 pages.

²⁷ See e.g. Ombrane **webpage on Euro CP**.

²⁸ ICMA (2021) also reports that ABCP issued under a Euro-CP programme amounted to an outstanding of USD 39 billion at June 2019 (as compared with USD 6 billion for NEU-CP), see p. 14.

²⁹ See **Bank of England database**.



The Bank of England also provides data on outstanding amounts of CP (GBP, EUR, other currencies) issued by UK-resident banks, as well as data on UK-resident banks' holdings of CP issued by UK-resident banks, with a further breakdown by ownership of the UK-resident bank (e.g. Japan-owned, EU-owned, etc. See detailed information in Appendix 1).

At 31/07/2021, UK-resident monetary and financial institutions (MFIs) had issued GBP 121 billion in CP in GBP and GBP 170 billion in foreign currencies (including GBP 56 billion in EUR). In total, UK-resident banks' CP outstanding amounted to GBP 291 billion at the end of July 2021, yet UK-resident banks were only holding less than GBP 0.5 billion of these CP.

No information is publicly available on the amounts outstanding from other types of issuer and the Bank of England provides no information on rates at issuance.

Euroclear provides some further insights into the market: average daily yields for one-month and three-month Euro-CP primary issuances settled on its books (Euroclear Bank), broken down by currency (EUR, USD and GBP).³⁰ It should be noted that yields have no longer been reported for EUR issuances since March 2016. A further breakdown by issuer type and rating is available at a weekly frequency. The outstanding amounts on which these yields are computed are not disclosed, and we do not know how representative these data are.

The secondary market is again mostly OTC, with very limited information on volumes, prices, and positions.

2.3 Other national Commercial Paper (CP) and Certificates of Deposit (CD) markets

Other national CP/CD markets are more fragmented and there is little information available.

According to ICMA (2021), *“there are a number of other, well-established domestic CP markets, mainly serving domestic issuers and investors. These include Belgium, Germany, and Spain. Meanwhile, some jurisdictions are in the process of developing their own domestic CP markets, notably Italy.”*

2.4 Sovereign short-term bills

The sovereign short-term debt instruments issued by the EU Member States may take several forms. The most widespread appears to be **sovereign short-term bills**, issued on specific auction platforms, with a limited number of auction participants, generally referred to as *Primary Dealers*.

The European Commission recently issued EU-Bills for €5 billion on the Banque de France's TELSAT auction platform.³¹ This platform is also that used for the issuing of French Treasury Bills

³⁰ See Euroclear's website: [Euro commercial paper](#).

³¹ See the European Commission's website (2021): [“The EU to use the TELSAT auction platform by Banque de France for its auctions as of September 2021”](#), Brussels, 17 May.



(*Bons du Trésor à taux fixe et intérêt précompté* – BTF) and longer-term bonds (*Obligations assimilables du Trésor* – OAT).³² Italian *Buoni del Tesoro*, German *Bubills*, Spanish *Letras del Tesoro* are other examples of auction-type, short-term sovereign debt instruments. In some countries, two types of short-term sovereign treasury instrument coexist. This is the case for Hungary (“Discount Treasury Bonds” and “One-Year Hungarian Government Securities”) and in Ireland (“Treasury Bills” and “Exchequer Notes”).

Some sovereign treasuries are also issuing on the CP markets (i.e. either on the Euro-CP market, or on the US CP market, or even on their domestic CP market³³). For instance, the Belgian, Dutch, Danish, Irish and Swedish Treasuries report issuing Euro-CP. The Austrian Treasury mentions issuances of Austrian CP (although these securities are governed by English law), while the Italian Treasury indicates that it issues “CP” (interestingly enough, Italian sovereign CP seem to be referred to as “Treasury Bills” in the legal documentation³⁴). The Danish and Dutch Treasuries may also be issuing on the US CP market. This illustrates the fragmentation of the market for short-term debt securities, as well as the issues of interconnectedness and substitutability of such securities.

In Table 1 below, we list all the information on short-term public debt that we could gather from the websites of European Union countries’ national treasuries and central banks.

³² See Agence France Trésor’s website: [The Banque de France](#).

³³ Even if public issuers are present on the NEU-CP market (local and regional administrations, public hospitals, social security bodies, etc.), there are no traces of sovereign issuances of NEU-CP (no central government). See the Banque de France website: [list of issuers](#).

³⁴ See Ministry of Economy and Finance website, [legal documentation on international funding programme](#), Commercial paper programme subheading, Department of the Treasury.



Table 1

List of EU national Short-term sovereign securities

(the amounts in EUR or in national currencies correspond to the latest value available when the research was conducted, in September/October 2021)

Country	Name in English	Original name	Acronym	€bn	National currency bn	Additional CP programs?
Austria	Austrian Treasury Bills	Austrian Treasury Bills	ATB	4		Austrian CP
Belgium	Treasury Certificates	Certificats de Trésorerie	CT	26		Euro-CP
Bulgaria		N/A				
Croatia	Treasury Bills	Trezorski zapisi			17	
Cyprus	Treasury Bills	Γραμμάτια Δημοσίου		1.45		Euro-CP
Czech Republic	Treasury Bills	Státní pokladniční poukázky	SPP		331	
	Czech National Bank Bills	ČNB poukázky	P ČNB		4000	
Denmark	Treasury Bills	Skattekammerbeviser			60.3	Euro-CP / USCP
Estonia	Treasury Bills	Lühiajalised võlakirjad	ETB	0.4		
Finland	Government Treasury bills	Valtion velkasitoumukset		16.4		
France	Fixed-rate discount Treasury bills	Bons du Trésor à taux fixe et à intérêt précompté	BTF	151		
Germany	Treasury discount paper	Unverzinsliche Schatzanweisungen	Bubills	156		
Greece	Treasury Bills	Έντοκα Γραμμάτια		12.6		
Hungary	Discount Treasury Bond	Diszkont Kincztárjegy			?	
	One Year Hungarian Government Securities	Egyéves Magyar Állampapír			?	
Ireland	Treasury Bills	Tresury Bills		4.5		Euro-CP
	Exchequer Notes	Exchequer Notes				
Italy	Treasury Bills	Buoni ordinari del Tesoro	BOT	144		CP
Latvia	Treasury Bills	IEKŠĒJĀ AIZŅĒMUMA parādzīme		0		
Lithuania	Treasury Bills	iždo vekselius		0		
Luxembourg	Treasury Certificates	Certificats de Trésorerie		0		
Malta	Malta Treasury Bills	Bills tat-Teżor ta' Malta		0.6		
Netherlands	Dutch Treasury Certificate	Schatkistpapier	DTC	24.7		Euro-CP / USCP
Poland	Treasury Bills	Bony skarbowe			0	
Portugal	Treasury Bills	Bilhetes do Tesouro	BT	12.5		
Romania	Treasury Certificates	Certificate de trezorerie	CT		7.5	
Slovakia	Treasury Bills	Štátne pokladničné poukázky	ŠPP	0		
Slovenia	Treasury Bills	Zakladne menice		1.5		
Spain	Treasury letters	Letras del Tesoro		77		
Sweden	Treasury Bills	Statsskuldväxlar			100	Euro-CP

Source: Author, based on national treasuries' and national central banks' websites.



Public information on both the primary and secondary markets is fragmented and/or scarce.

Data on these financial instruments are spread over multiple websites (see Table 1)³⁵, and proper investigation of aggregate amounts, as well as on the existence of a secondary market capable of absorbing significant selling pressure, is still warranted. For instance, to the best of our knowledge, no analysis was produced about the (relative) liquidity conditions of the various national European T-bills during the Covid crisis. We could not find information as to whether T-bills were actually sold to obtain cash at the peak of the crisis and on the type of economic agents that were willing to purchase them (beyond central banks). To be clear, we suspect that just as CP and CD, short-term T-bills are “hold-to-maturity” and not readily liquid. Finally, in general, information on sovereign CP issuance is even less straightforwardly available.

2.5 Short-Term European Paper (STEP)

STEP is an overarching label set up in 2006 by the ACI-Financial Market Association (ACI) and by the European Money Market Institute, two trade associations. The goal was to encourage a better integration of the European short-term markets through standardized market practices and improved transparency.³⁶ One of the conditions for the label is that information be provided to the European Central Bank (ECB)/European System of Central Banks (ESCB), which produce and publish statistics on yields and volumes. The label can be applied to NEU-CP, Euro-CP and domestic CP. Since April 2007, STEP has been “accepted as a non-regulated market for collateral purposes in Eurosystem credit operations”.³⁷ The STEP label thus plays a significant role in eligibility for central bank interventions.

The ECB publishes some data on STEP, but the actual composition of the STEP perimeter (in terms of NEU-CP versus Euro-CP) is unknown, and there is no information on the secondary market. The ECB provides data on outstanding and gross issues on a daily basis, broken down by residual time to maturity, rating category, and issuer type.

At the end of July 2021, STEP paper outstanding amounted to €410 billion. The ECB also reports data on yields for new issues on a daily basis.

As is the case for NEU-CP, given that there is more information on the STEP segment than on the wider CP market, the analyses here generally focus on this specific perimeter.

³⁵ Some commercial data providers might still compile this information. The completeness of their data has not been assessed for this study.

³⁶ See the ECB’s webpage: [Short-term European paper \(STEP\)](#).

³⁷ See ECB (2007), “[First publication of Short-Term European Paper \(STEP\) yield statistics](#)”, *press release*, Frankfurt am Main, 2 April.



3 Main issues identified with the short-term debt securities market

The stock-take exercise conducted in Section 2 showed that the European short-term funding market is fragmented and opaque. Four main structures coexist: NEU-CP, Euro-CP, domestic CP and sovereign short-term instruments. Several large issuers are active on two or three of these sub-markets (e.g. the French Social Security system issues both NEU-CP and Euro-CP³⁸, and, as pointed out in the previous section, the Irish and Belgian Governments issue both Treasury Bills and Euro-CP), and investors also hold various types of instrument. As a consequence, although separate, the sub-markets are also intricately intertwined.

3.1 Size of the short-term debt securities market and MMF's market footprint

Currently, given the existing public information available, it is difficult to get a clear picture of the total size of the European short-term debt securities market. In April 2021, the ECB produced an analysis of the CP/CD market, based on its internal data, in which it estimated the overall size to be €675 billion at year-end 2020³⁹. However, it excluded sovereign bills from the scope, and mostly focused on the NEU-CP and STEP segments (where it collects data). A large chunk of the Euro-CP market was thus missing. ICMA (2021) estimated the Euro-CP market at around USD 1,000 billion at the first quarter of 2021 (roughly €850 billion), with another €250 billion for NEU-CP.⁴⁰ This tends to show that several hundred billion euro' worth of CP have not been included in the ECB's analysis.

The lack of proper data on consolidated amounts outstanding on the short-term debt securities market prevented any calculation of the exact market footprint for MMFs. This also leaves question marks about the diagnosis of the March 2020 crisis.

Additionally, it is crucial to understand the interplay of the various currencies in the short-term debt securities market and the connection with the structure of the European MMFs' industry. It should be remembered that, based on the regulatory data compiled for the ESRB (2021), the EU market for MMF represented a total amount of around €1,350 billion (data at December 2020)⁴¹:

- MMFs investing predominantly in public debt securities are almost exclusively denominated in USD (which is understandable given the current yields on public debt in Europe) and

³⁸ See the Union de recouvrement des cotisations de Sécurité sociale et d'allocations familiales (URSSAF) webpage: [Acoss, benchmark issuer on the money market](#).

³⁹ ECB (2021), "[Euro money market study 2020 – Money market trends as observed through MMSR data](#)", Frankfurt am Main, April, 96 pages (see in particular [Chapter 3: The short-term debt securities segment](#), pp. 42-58).

⁴⁰ See, for instance, ICMA Commercial Paper Committee (2021), "[The European Commercial Paper and Certificates of Deposit Market](#)", *white paper*, International Capital Market Association, Zurich, September, 29 pages.

⁴¹ See Chart 4 in European Systemic Risk Board (2021), "[Issues note on systemic vulnerabilities of and preliminary policy considerations to reform money market funds \(MMFs\)](#)", Frankfurt am Main, July.



represent slightly less than €150 billion. EU public-debt MMFs are, in practice, an offshore equivalent of the US Government MMFs;

- Private debt USD-denominated EU MMFs represent around €300 billion and mostly take the form of (short-term) LVNAV funds;
- Private debt GBP-denominated EU MMFs are also mostly LVNAV funds, and represent about €300 billion;
- LVNAVs (especially those denominated in USD) were those that experienced the most dramatic wave of redemption during the March episode.⁴² In aggregate, over the month of March 2020, redemptions on Luxembourg and Irish USD-LVNAVs exceeded 25% of their assets under management (AuMs) at the end of February;
- Private debt EUR-denominated EU MMFs amounted to slightly more than €600 billion. LVNAVs only represented less than 20%. The vast majority of EUR MMFs are longer-maturity VNAVs and are essentially domiciled in France;
- French short-term EUR VNAVs (i.e. those VNAVs with a maturity profile similar to LVNAVs) experienced virtually no redemptions on aggregate in March 2020, while French standard EUR VNAVs (i.e. those with a longer maturity than LVNAVs) recorded, in March, outflows of 14% of their AuMs at the end of February (yet about half this corresponded to a long-observed end-quarter redemption cycle specific to this type of fund).⁴³

Last, the ratings of the various programmes and issuers by the major credit rating agencies (CRAs) proved to be a determinant in eligibility for the ESCB's pandemics asset purchase programme. The actual short-term credit ratings of programmes and issuers, as well as CRAs' coverage of and market shares in this segment should be investigated in detail.

Access to more information would therefore make it possible to gain a better understanding of the March 2020 crisis on the short-term debt market in Europe.

3.2 Secondary market data

The secondary market for short-term debt is, by and large, OTC, and an assessment of its depth and liquidity is impossible. No data are publicly available on actual trades (volume, settlement price) and information on the demand and supply for short-term instruments (bid and offer prices, volumes posted) appears extremely difficult to gather.

As a consequence, the bid/ask spreads and volumes offered or demanded by the various players are broadly unknown to market regulators. This prevents regulators from assessing the structural liquidity of the market, and its ability to cope with large sales pressure, both in normal times and in

⁴² See Board of the International Organization of Securities Commissions (2020), "**Money Market Funds during the March-April Episode**", *Thematic Note*, OR03/2020, Madrid, November.

⁴³ See Darpeix, Pierre-Emmanuel and Mosson, Natacha (2021), "**Detailed analysis of the portfolios of French money market funds during the COVID-19 crisis in early 2020**", *Risk and Trend Mapping*, AMF, Paris, May.



stressed conditions. It should be remembered that CP transactions are not, in general, reported to securities regulators since the vast majority of CP are not admitted to trading or traded on a trading venue (see Section 1).

Accessing standardised data on the short-term debt securities secondary market would help with assessing its liquidity in comparison to that of other markets. The relative liquidity of short-term bonds as compared with commercial paper is an issue that merits extensive investigation, as does comparison of the relative liquidity of sovereign bills as compared with sovereign CP and with other CP on the secondary market. This last aspect is all the more important given that even the US Treasury market (a market which is much deeper and much more homogeneous than the 27 EU sovereign debt markets) is reported to have faced large-scale dysfunction during the COVID crisis.⁴⁴

3.3 March 2020 crisis and Central bank interventions

In March 2020, against the backdrop of the dramatic evolution of the COVID pandemic and the strict lockdown measures that had to be imposed by governments, the short-term debt securities market froze.

The secondary market is generally seen as not being very deep, given that investors usually hold these short-term securities to maturity. It was therefore difficult for the market to absorb the large selling pressure (as stated before, though, not much information is available on the secondary market due to its OTC nature, and we do not know what the actual positions were).

In parallel, issuances on the primary market were halted: the high degree of uncertainty about the near future limited investors' willingness to purchase CP or CDs, even for very short maturities of a few weeks.

By end-March, central banks in Europe had started to implement asset purchase programmes targeting the CP/CD market. The ECB increased its private-sector purchases and expanded the eligibility of non-financial commercial paper by lowering the residual maturity criteria (from 6 months to 28 days).⁴⁵ This intervention, focused on eligible NFCs (investment grade-rated issuers, rated by one of the largest four credit rating agencies, issuing securities in euros), proved efficient in progressively restoring confidence in the entire CP/CD market and help issuances resume within a few weeks.

Information on central bank interventions on the market for short-term debt is also rather fragmented.

⁴⁴ See Group of Thirty Working Group on Treasury Market Liquidity (2021), "**U.S. Treasury Markets: Steps Towards Increased Resilience**", Group of Thirty, Washington, July, 40 pages. See also: Vissing-Jørgensen, Annette (2021), "**The Treasury market in Spring 2020 and the response of the Federal Reserve**", *NBER Working Paper*, No 29128, National Bureau of Economic Research, August.

⁴⁵ See de Guindos, Luis and Schnabel, Isabel (2020), "**The ECB's commercial paper purchases: a targeted response to the economic disturbances caused by COVID-19**", *The ECB Blog*, 3 April.



ESCB CP purchases under the Pandemic Emergency Purchase Programme (PEPP)⁴⁶ are reported by the ECB at a bi-monthly frequency (i.e. every other month).⁴⁷ At the end of May 2020, the total holdings of CP amounted to €35.5 billion (**more than 80% purchased on the primary market**). By the end of July 2021, CP in the ESCB's balance sheet had almost disappeared and represented an outstanding of less than €4 billion (see Chart 3), highlighting the transitory needs on this market). There is no public information about the composition of the CP purchased (whether they were Euro-CP or NEU-CP or other national CP).

The issue of eligibility for central bank programmes remains key to understanding the scope of their interventions. Transparency and market-neutrality of eligibility rules would allow supervisors to assess whether MMFs' assets are likely to be bought in the event of a crisis (either because of direct central bank purchase, or because market players believe that the central bank might eventually buy them). Attention should be especially drawn to the fact that ratings issued by agencies other than the big four (S&P, Moody, Fitch and DBRS Morningstar) have not, so far, been included in the Eurosystem credit assessment framework (ECAF).⁴⁸ It is difficult to find a public explanation for this, especially since these smaller CRAs are also authorised and regulated by the European Securities and Market Authority (ESMA). One reason might be that ECAF applies to all types of security, and not specifically to the short-term debt segment, on which Eurosystem interventions are not frequent. In any case, including more of these smaller CRAs in the ECAF would contribute significantly to the stated objectives of the European CRA Regulation⁴⁹ (2013 amendments) to foster competition in this market.

⁴⁶ See de Guindos, Luis and Schnabel, Isabel (2020), "**The ECB's commercial paper purchases: a targeted response to the economic disturbances caused by COVID-19**", The ECB Blog, 3 April.

⁴⁷ See the ECB's webpage: **Pandemic Emergency Purchase Programme (PEPP)**. In addition, the ECB provides quarterly information on euro area national central banks' balance sheets, with a breakdown by security type, maturity, issuer type in its **Quarterly Sector Accounts (QSA)**. Banque de France's holdings of non financial corporations' debt securities with maturity up to one year (which is a proxy for its pandemic intervention on the corporate CP market) was representing 27.3 billion euros at the end of the second quarter of 2020 out of a total of 37.1 billion euros for the 19 euro zone central banks taken together.

⁴⁸ See the ECB's webpage: **Eurosystem credit assessment framework (ECAF)**.

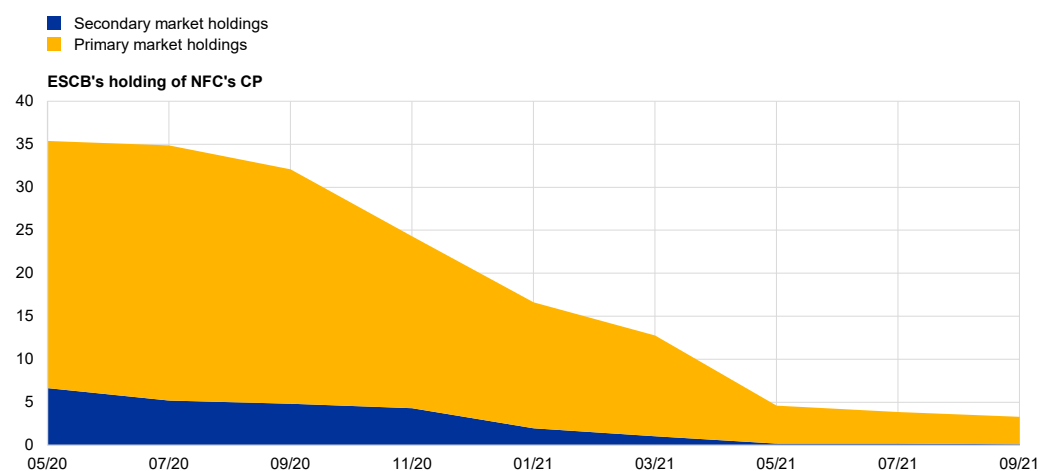
⁴⁹ See **Regulation (EU) No 462/2013** of the European Parliament and of the Council of 21 May 2013 amending Regulation (EC) No 1060/2009 on credit rating agencies (OJ L 146, 315.2013, p. 1).



Chart 3

Net amounts outstanding of commercial paper purchased by the ESCB within the PEPP

(EUR bn)



Source: ECB.

CP purchases under the Bank of England and HM Treasury's COVID Corporate Financing Facility are reported at a weekly frequency (i.e. eight times more frequently than the ESCB) from 1 April 2020.⁵⁰

The Bank of England's intervention was **exclusively targeted at the primary market**, and the maximum amount of CP in the balance sheet was £20.5 billion on 20 May 2020. At 15 September 2021, only £3.6 billion were still on the balance sheet (see Chart 4).

Yet, as is the case with other data from the Bank of England, the series only refers to the vague term "CP". It is therefore unclear whether the programme targeted Euro-CP only or all types of commercial paper.

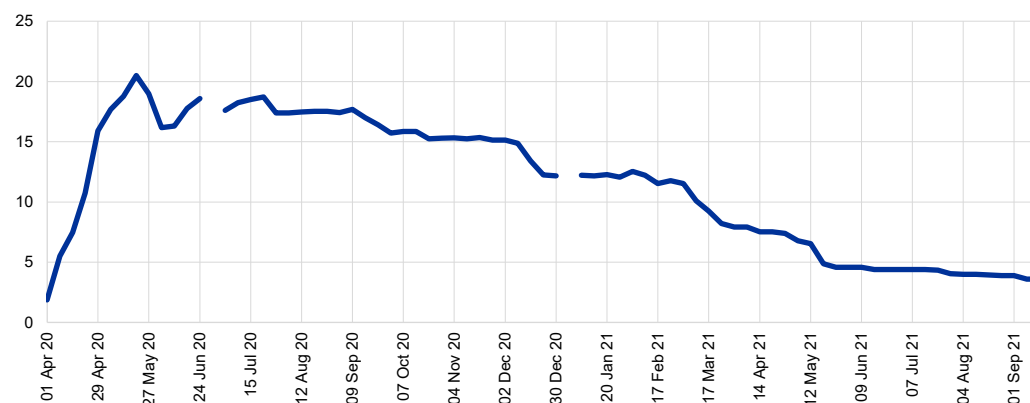
⁵⁰ See Bank of England database, **YWWZOR7 series**.



Chart 4

Net amounts outstanding of commercial paper purchased in the Bank of England and HM Treasury's COVID Corporate Financing Facility

(£ billion)



Source: Bank of England (YWWZOR7 series).

Just as was the case with the Federal Reserve's previous interventions on the US CP market in 2008-2009⁵¹, central bank purchases of CP in Europe appear to have been very short-lived. The central bank interventions concerned were entirely different from the unconventional longer-term bond purchases initiated in 2014 in the aftermath of the EU sovereign debt crisis, which had long-lasting consequences on central banks' balance sheets.

The interventions were sizeable when compared with the outstanding amount of non-financial corporate CP (the EUR corporate CP market was assessed as being around €75 billion by the ECB in April 2020⁵² – yet estimates from the CSDB indicate €111 billion in corporate CP outstanding at that date, to which should probably be added a portion of the €81 billion in CP issued by non-bank financial institutions), but quite limited relative to the overall amount of short-term debt securities.

The transitory nature of these interventions (on a market that underwent a liquidity crisis, but not a solvency crisis) must be highlighted. Central banks played a critical role in liquidity provision of last resort on the primary market for short-term funding, and enabled the market to resume operation rapidly after the initial freeze.⁵³

⁵¹ See Adrian, Tobias, Kimbrough, Karin and Marchioni, Dina (2011). "**The Federal Reserve's Commercial Paper Funding Facility**", *FRBNY Economic Policy Review*, New York, May.

⁵² See de Guindos, Luis and Schnabel, Isabel (2020), "**The ECB's commercial paper purchases: a targeted response to the economic disturbances caused by COVID-19**", *The ECB Blog*, 3 April.

⁵³ See e.g. Bagehot, Walter (1873), "Lombard Street – a description of the Money Market", Henri S. King & Co., London, 359 pages.



4 A few insights from the Centralised Securities Database (CSDB)

In this section, we exploit month-end extracts from the ECB's Centralised Securities Database provided for by the ESRB. This database is probably the most exhaustive source of information on the securities outstanding in Europe⁵⁴. The perimeter encompasses all securities issued by EU residents (whether within or outside of the EU), all securities denominated in EUR, as well as other internationally traded securities likely to be held by EU residents.⁵⁵

For the purpose of this analysis, we focused on the short-term debt instruments, securities gathered in the CSDB under the general heading of "Money Market Instruments" (D.7). We obtained extracts at a monthly frequency on 2020. Outstanding amounts were then broken down by nature (4 sub-groups emerged: "certificates of deposits"; Euro Commercial Paper"; "other commercial paper"; and "other money market instruments"), by type and domicile of the issuer, by currency, and by coupon type.

As can be seen from the previous paragraph, Euro-CP are clearly identified, yet this is not the case for NEU-CP, domestic CP markets and treasury bills. Those securities are probably spread over the other main types. Section 4.4 provides useful complements to the analysis: a matching of CSDB ISIN-level data with Banque de France data on NEU-CP helped identify the latter in the broader CSDB and shed light on their classification.

In Chart 5, we provide an overview of the structure of the short-term debt securities market according to the CSDB, by nature of the security and by issuing country: eurozone ("€z"), rest of the EU ("EU\€z"), four non-EU-western Europe countries, namely Switzerland, the United Kingdom, Norway and Iceland ("UK/NO/CH/IS"). As Euro-CP are by definition issued in Europe, we also added in the graph the Euro-CP issued by all the other foreign entities ("Other international").

A given colour identifies each of the four types of instrument listed above. Outstanding issued by eurozone-domiciled entities are in light shades while issues by the other countries are in darker colours. Euro-CP issued by non-European entities are indicated with vertical stripes. CDs are depicted in blue. Euro-CP are in green while other CP are in brown. Other non-identified MMIs are in yellow.

Chart 5 shows that the short-term debt market in Europe is worth more than 2 trillion euro. From the relatively stable plateau observed over 2020-Q1 around 2.1 trillion euros, outstanding have

⁵⁴ Note that, as the CSDB extract provides for a snapshot of outstanding securities at month-end, securities maturing within the very month in which they were issued could be overlooked (but this would be an issue only in case they are not rolled over).

⁵⁵ For more details on the CSDB, refer to ECB (2010), "[The "Centralised Securities Database" in brief](#)", Frankfurt am Main, February. Interested readers could also have a look at Cornejo Pérez, Asier and Huerga, Javier (2015), "[The Centralised Securities Database \(CSDB\) – Standardised micro data for financial stability purposes](#)", IFC workshop on "Combining micro and macro statistical data for financial stability analysis. Experiences, opportunities and challenges", Irving Fisher Committee on Central Bank Statistics, Bank for International Settlements, Warsaw, 14-15 December.

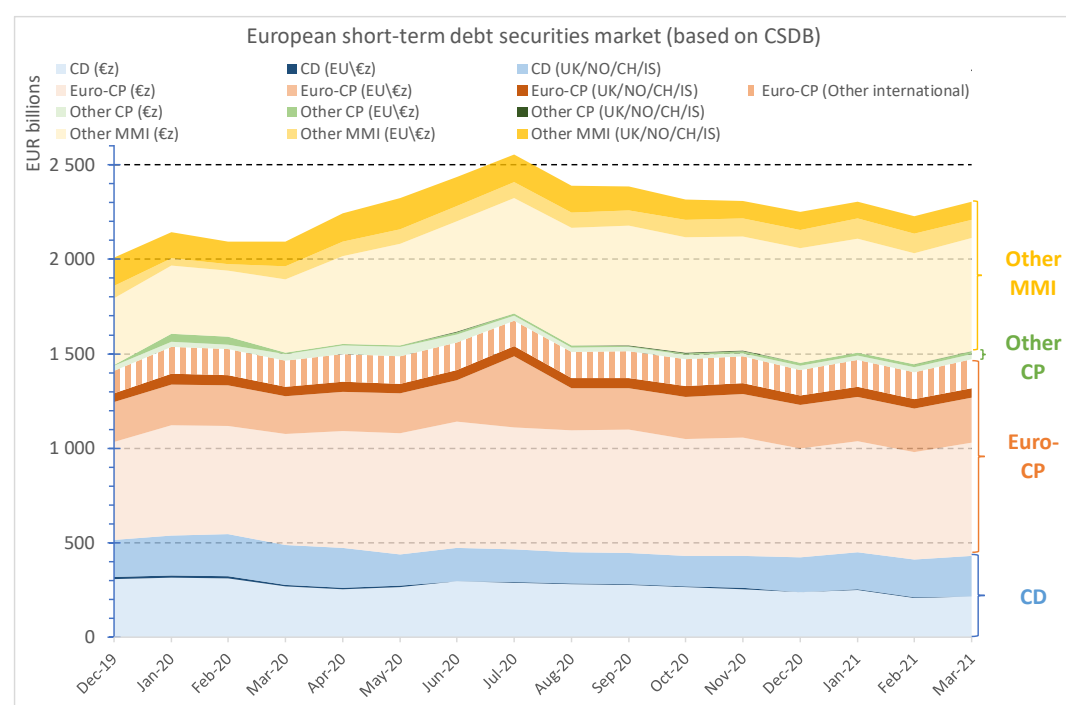


increased significantly in 2020-Q2 and peaked above 2.5 trillion by end-July. They then decreased slightly over the following months to stabilise at around 2.3 trillion euro.

One notes a slight but continuous decline in the CD segment (blue areas, at the bottom of the graph) over time (from €514 billion at year-end 2019 to €431 billion at the end of March 2021). The decrease is particularly sensible between the peak observed at end-Feb 2020 (€546 billion) and the trough observed at the end of May 2020 (€425 billion).

Chart 5
European short-term debt market over 2020, based on CSDB data

(EUR bn)



Source: CSDB.

The Euro-CP market (brown areas) amounted to €895 billion at year-end 2019, and €992 billion twelve months later (exceeding €1 trillion at the end of each month between these two dates). The outstanding appears to have been relatively stable, despite a peak observed at the end of July, where it exceeded €1.2 trillion (this was due to a doubling in the outstanding of EUR-denominated Euro-CP issued by a non-eurozone EU central bank – probably due to a rollover anticipated by a few days, with the two rolling securities outstanding at the same time). Euro-CP issued by eurozone issuers corresponded to about €600 billion, non-eurozone EU-issuers to €200 billion, and other non-EU issuers (including non-European) to another €200 billion.

The “other CP” markets, depicted in green, are very small (about €50 billion), while the “other MMI” segment (yellow shades) is very large, ranging between €500 billion and €800 billion depending on the month.



4.1 Focus on the CD segment

Overall, the outstanding of CDs issued by European entities (EU and non-EU) represented €423 billion at December 2020, down from €514 billion twelve months earlier. At the beginning of the period (end-2019), EU CDs dominated (representing 60% of the total), while the split was more balanced for the more recent data points (50% at end-March 2021).

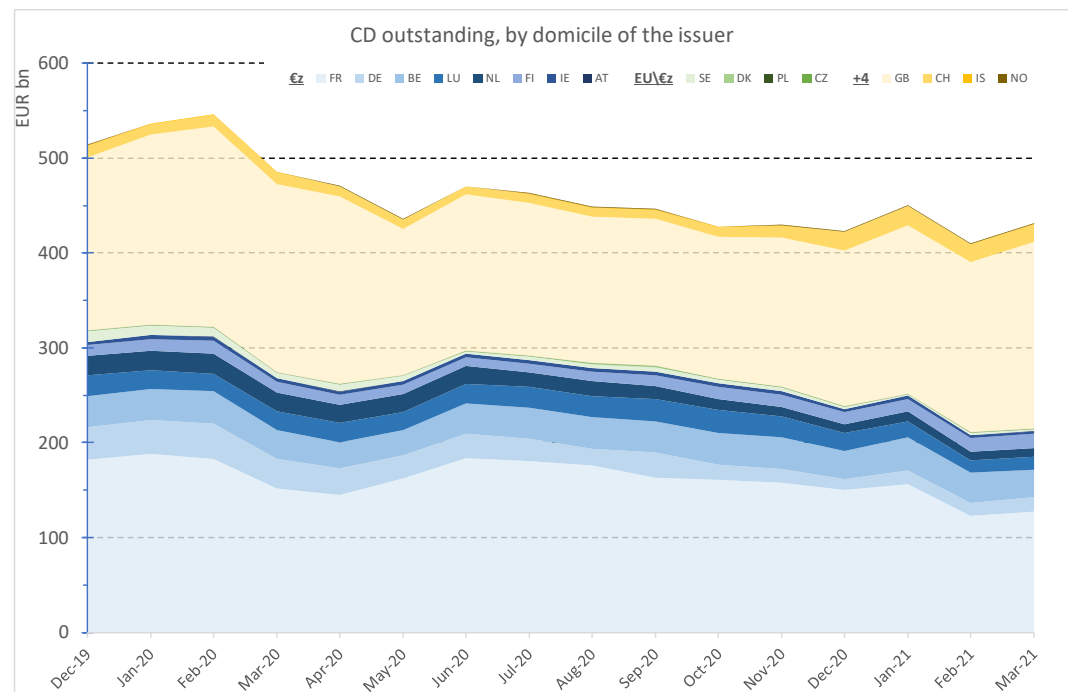
Entities based in EU countries that do not belong to the eurozone had very limited amounts of CDs outstanding in 2020 (less than €15 billion at most in the beginning of the period, representing less than 5% of the EU total).

More than half of “EU CDs” had actually been issued by entities domiciled in France (depending on the month, the proportion of French CDs in the total of EU CDs oscillated between 55% and 63%). German and Belgian issuers were next, with about 10% each, and then came Luxembourg and Dutch issuers, with between 4% and 8%. The share of Irish, Swedish and Finnish banks amounted to between 1 to 5% of the EU market. Austrian, Danish and Polish entities also issued CDs, but the outstanding amounts for these countries never exceeded €1 billion.

Chart 6

European CD market over 2020, based on CSDB data

(EUR bn)



Source: CSDB.

“Non-EU” CDs are almost exclusively issued by UK-domiciled entities (over the considered period, the share of UK-based entities as a total of non-EU CDs oscillated between 89% and 95%).



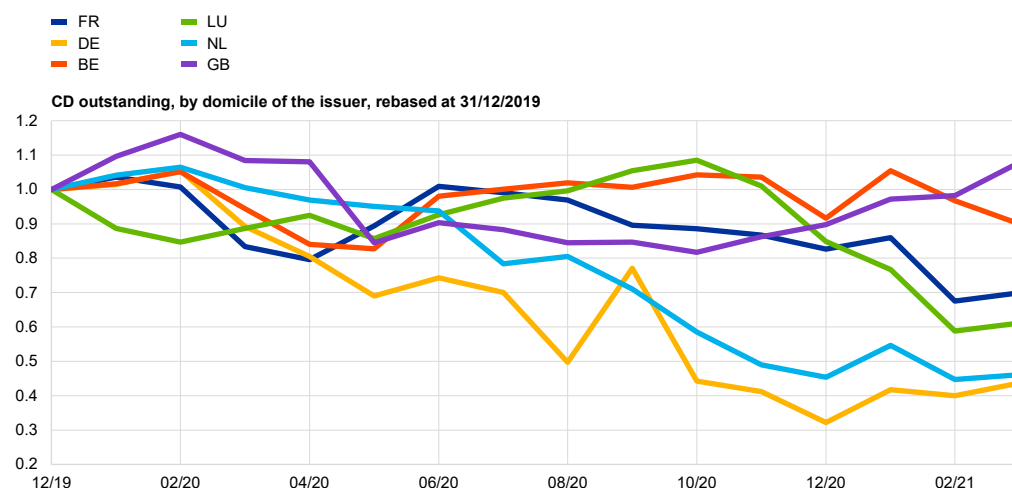
French and UK-based entities combined represented slightly less than three-quarters of the total outstanding of European CDs.

As indicated in Section 1, CDs are almost exclusively issued by banks. The only exceptions to this rule in the data we have for EU countries were a €50 million line issued by “Other financial corporations” in Ireland, and a line for less than €15 million issued by “Non-financial corporations” in Luxembourg.

As for non-EU countries, we find CDs issued by Swiss NFCs for less than €100 million (outstanding between June and December), by Swiss regional and local government for €31 million in December, and by the Icelandic central bank for around €700 million. In the United Kingdom, other financial corporations issued CDs for a maximum amount of €25 billion in February.

The downward trend in the outstanding of CDs can be better visualised from the graph below. Chart 7 shows the size of the CDs issued by entities domiciled in each of the major jurisdictions (FR, UK, DE, BE, LU, and NL), relative to the size as at 31/12/2019.

Chart 7
Development of CDs outstanding, by domicile



Source: CSDB.

The CDs outstanding of French-domiciled banks fell by about 20% (€31 billion) in March 2020, increased again over the second quarter of 2020 to return to pre-crisis levels, and then steadily declined until December 2020 to represent 83% of the pre-crisis level. Then we observed another major drop (by 18 percentage points of the initial outstanding) in February 2021.

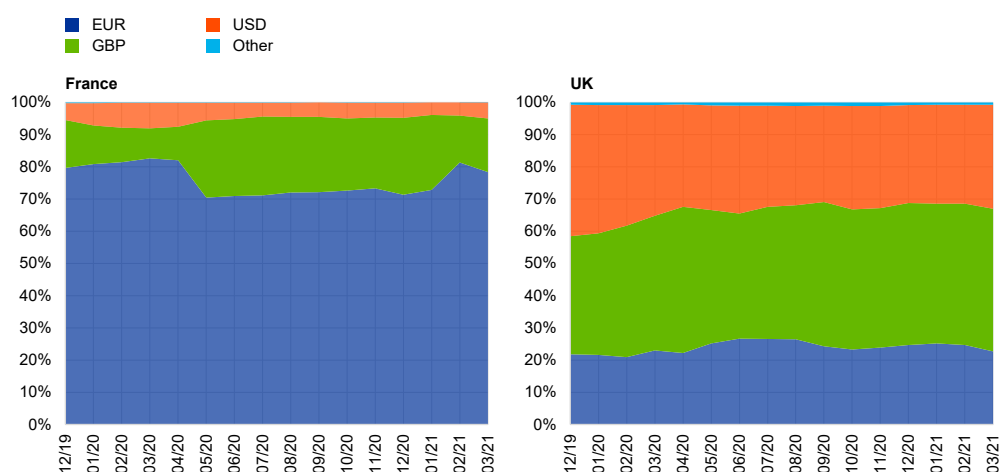
For UK-domiciled banks, the amount of the CDs outstanding dropped significantly in 2020, and even more sharply than in the French case (€43 billion), but this drop took place in May (i.e. two months later than in France). There was then a plateau, and the outstanding started to increase again (steadily) in the fourth quarter of 2020 and the first quarter of 2021.



The smaller segment of CDs issued by Dutch and German entities represented, at the end of 2020, less than half what they had amounted to twelve months before.

In terms of currencies, it should simply be noted that French-domiciled bank CDs outstanding was predominantly (more than 70%) denominated in EUR. The currency split for UK-domiciled bank CDs was more balanced (see Chart 8).

Chart 8
Currency split for CDs outstanding (France to the left; United Kingdom to the right)



Source: CSDB.

4.2 Focus on the Euro-CP segment

Over 2020, CSDB data showed a total outstanding for Euro-CP oscillating around €1 trillion, broadly speaking of the same order of magnitude as ICMA's estimate (which was around USD 1 trillion)⁵⁶, yet substantially higher if we account for the difference in currency (one euro was worth around USD 1.15 in 2020). The analysis of the CSDB data also tends to show that previous estimates by the ECB (€675 billion) were significantly biased downward due to the partial coverage of STEP and the SHSS data on Euro-CP.⁵⁷

EU-domiciled issuers in the Euro-CP segment represented roughly 80% of the outstanding (60% for eurozone countries and 20% for other EU countries).

Issuers were predominantly French (between 16% and 22% of the total Euro-CP market, depending on the month), followed by Czech (15% - almost exclusively attributable to Euro-CP

⁵⁶ ICMA Commercial Paper Committee (2021), "The European Commercial Paper and Certificates of Deposit Market", *white paper*, International Capital Market Association, Zurich, September, 29 pages.

⁵⁷ ECB (2021), "Euro money market study 2020 – Money market trends as observed through MMSR data", Frankfurt am Main, April, 96 pages (in particular see Chapter 3: The short-term debt securities segment, pp. 42-58).



issuance by the Czech central bank in Czech korunas), German (around 15%), Spanish (around 9%) and Dutch (6-7%).

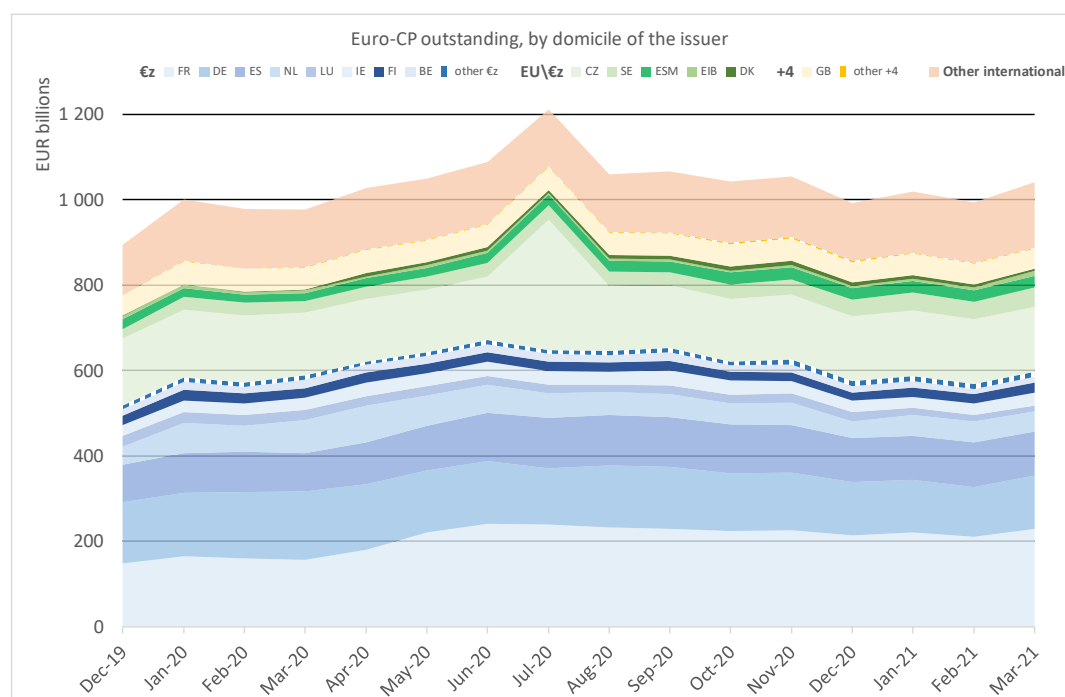
The UK issuers represented around 5% of the total Euro-CP market.

Non-European issuers of Euro-CP were essentially domiciled in Singapore (around 7% of the total). US issuers represented only around 1% of the total.

The peak in Euro-CP at the end of July actually appeared to stem from a slight overlap of two rolling over securities simultaneously outstanding for a few days.

Chart 9
Euro-CP market over 2020, based on CSDB data

(EUR bn)



Source: CSDB.

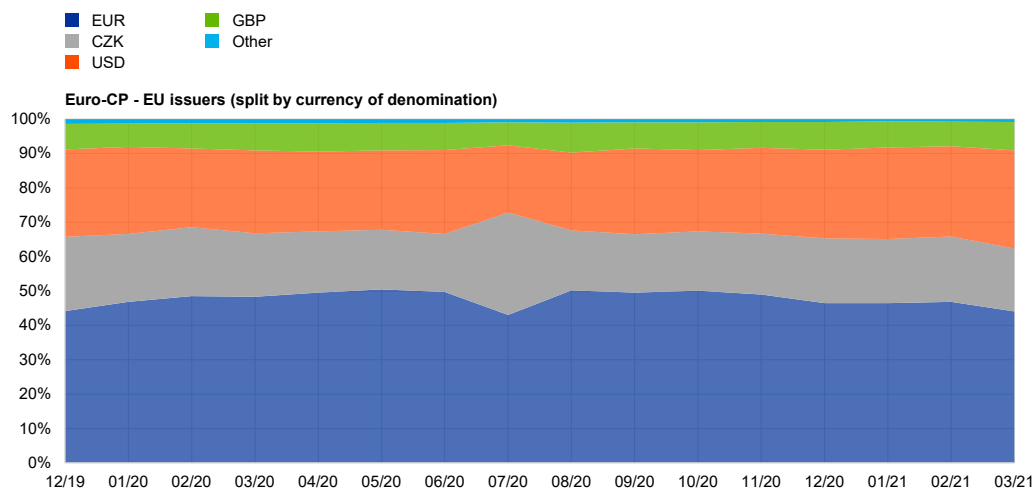
In terms of currencies, we broke down Euro-CP between EU issuers and non-EU issuers. For EU issuers, EUR-denominated Euro-CP represented a little less than 50% of the total (between 46 and 49%, depending on the month).

USD-denominated Euro-CP corresponded to roughly a quarter of the outstanding, while the CZK (linked with the large issuance of Euro-CP by the Czech central bank) was third, with slightly less than 20%. The share of the GBP lay between 6% and 8%.



Chart 10

Currency split for the EU Euro-CP market

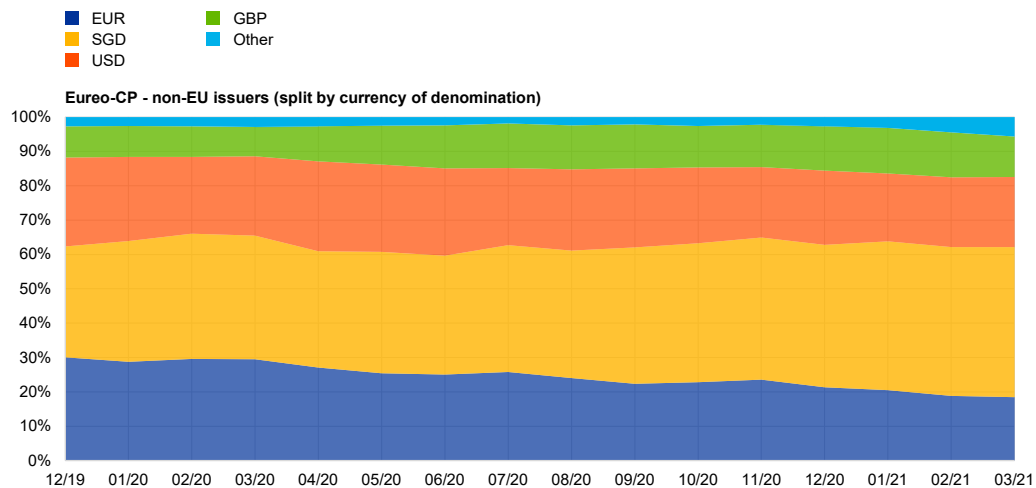


Source: CSDB.

When we turn to the segment of non-EU issuers of Euro-CP, the two most represented currencies were the Singapore dollar and the euro (with an inversion of the ranking over the period). Together, these two currencies represented 65% of the total.⁵⁸ USD and GBP made up most of the rest.

Chart 11

Currency split for the non-EU Euro-CP market



Source: CSDB.

⁵⁸ Euro-CP denominated in SGD are almost exclusively issued by the Central Bank of Singapore.



4.3 Focus on the sovereign debt segment

In this section, we have filtered the data to consider only those securities issued by central governments (EU, as well as the four other western European countries) across all types of instrument.

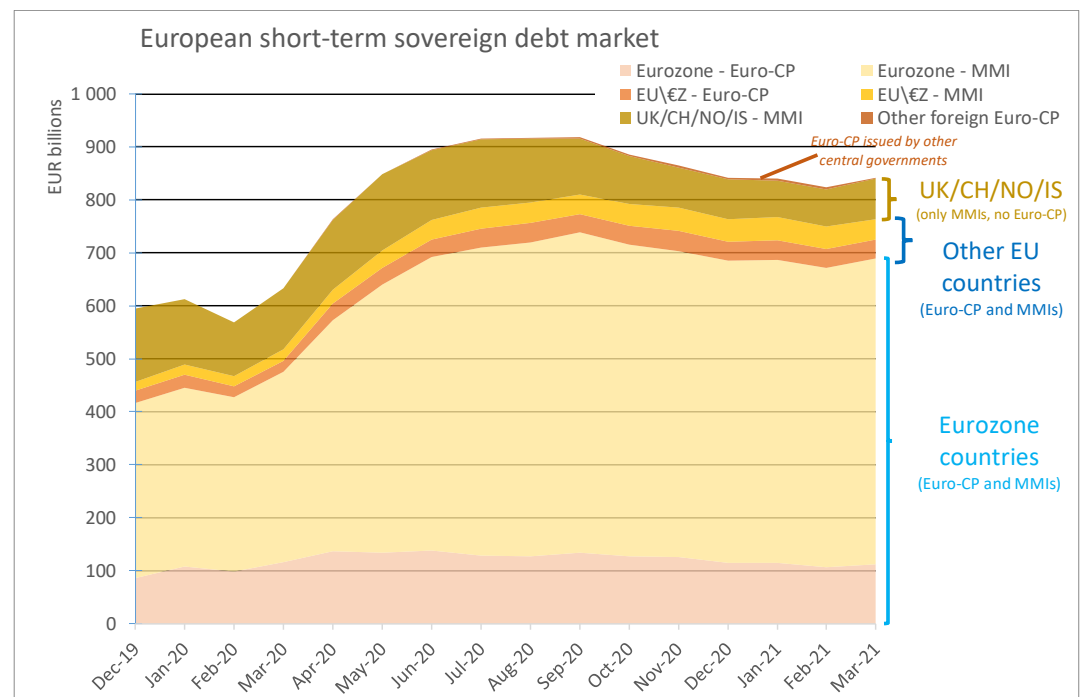
We first segmented the data based on the type of instrument. We found that, in the CSDB data, the securities issued by central governments are either labelled as “Euro-CP” or as “other MMIs”. Put differently, the CSDB reports no sovereign issuances of CDs (which is expected) and no sovereign issuances of other national CP (less expected).

We added a further split based on regional and political characteristics (eurozone countries; other EU countries; other western Europe countries (UK/CH/NO/IS) and other foreign countries issuing on the Euro-CP market).

Chart 12 shows that the vast majority of the European short-term sovereign debt outstanding lay in the “other MMI” category (i.e. probably treasury bills, as central governments do not issue NEU-CP), but we can also see that EU as well as non-European sovereign entities did issue a significant amount of Euro-CP.

Chart 12
European short-term sovereign debt (central governments)

(EUR bn)



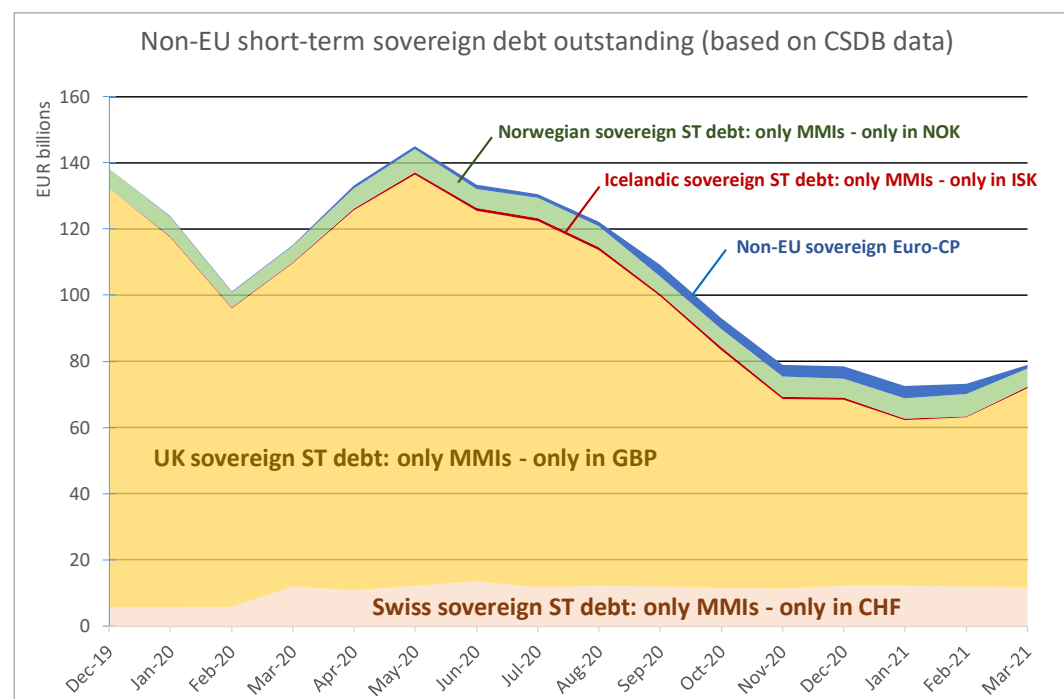
Source: CSDB.



Interestingly, we find that central governments of the group of four “non-EU-European countries” only issued other MMIs (and no Euro-CP). This is particularly surprising for the UK Government, given that, as previously seen, the market for Euro-CP is based in London. Additionally, we note that the MMIs they issued were only denominated in their own national currency (see Chart 13).

Chart 13
Non-EU sovereign issuers

(EUR bn)



Source: CSDB.

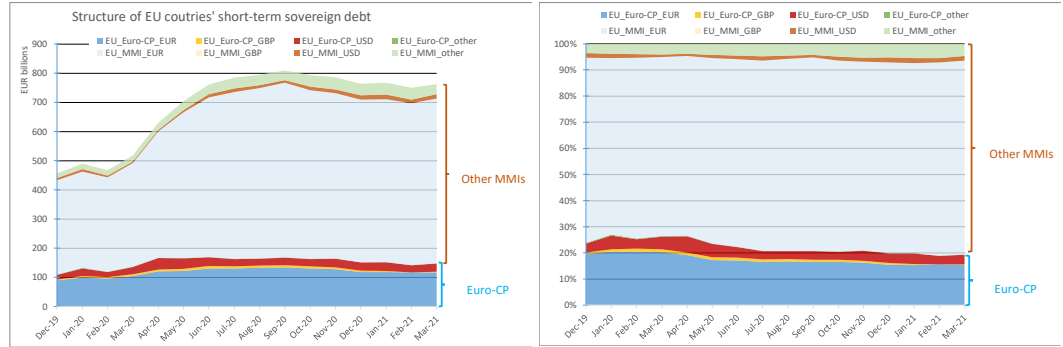
We now turn to the EU sovereign debt segment (thus leaving aside the sovereign short-term debt securities issued by the United Kingdom, Norway, Switzerland and Iceland, as well as the Euro-CP issued by non-EU countries).

Chart 14 highlights the fact that the vast majority (around 90%) of the short-term debt securities issued by EU countries (whether or not they belong to the eurozone) was denominated in EUR. Short-term sovereign debt denominated in USD represented around 5% and mostly took the form of Euro-CP.



Chart 14
EU short-term sovereign debt (split by currency and security type)

(EUR bn)

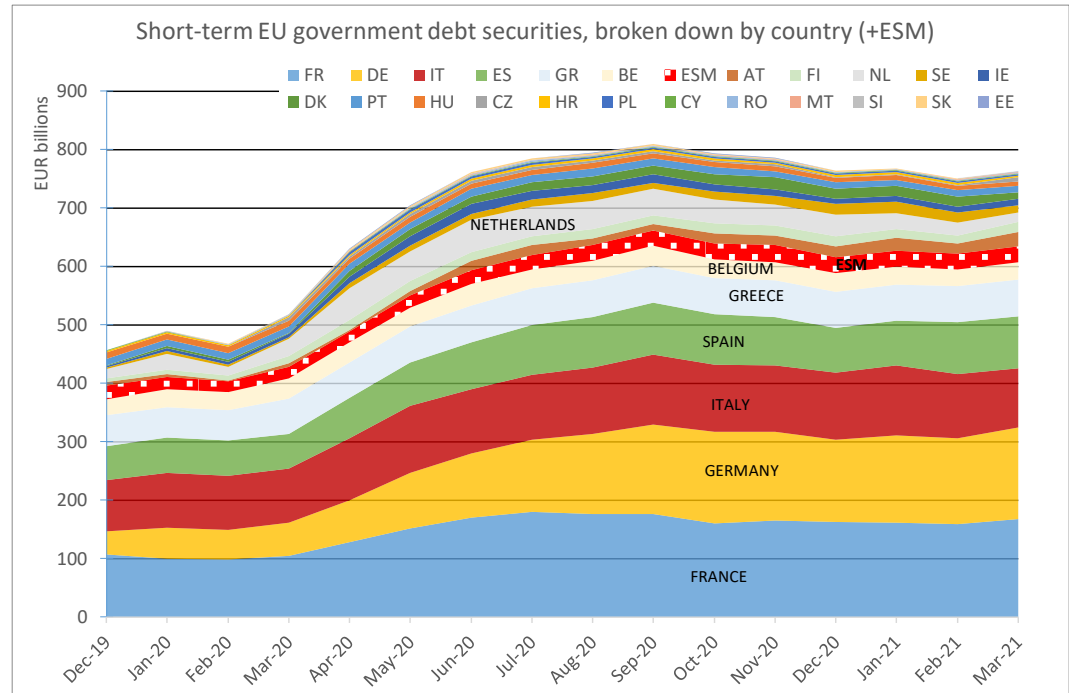


Source: CSDB.

Looking closer at country-level outstanding of short-term sovereign debt securities in the EU, Chart 15, does not distinguish between Euro-CP and other types of MMI, while Chart 16 plots separately the “Other MMIs” (to the left) and the Euro-CP (to the right).

Chart 15
EU short-term sovereign debt outstanding

(EUR bn)



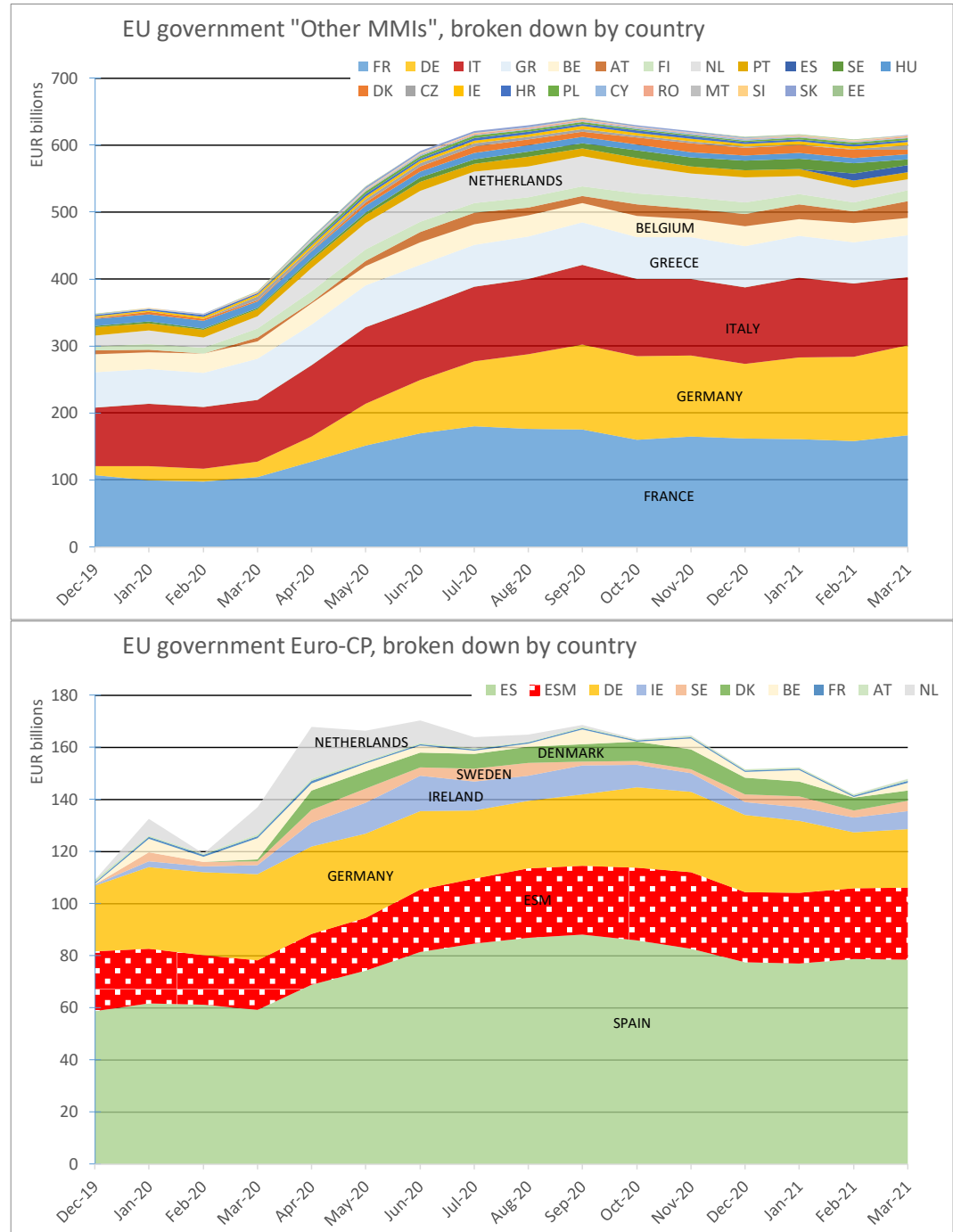
Source: CSDB.



Chart 16

EU short-term sovereign debt outstanding: broken down by security type

(EUR bn)



Source: CSDB.



Although the French Government issued some Euro-CP over the period, the amounts were marginal as compared with other MMIs. On the other hand, German sovereign Euro-CP programmes were fairly sizable, and even larger than other German MMIs at the beginning of the period. Spanish short-term public debt seems to have taken exclusively the form of Euro-CP over the course of 2020 (other MMIs were found in the CSDB data from February 2021 onwards).⁵⁹

Conversely, the Greek, Italian and Portuguese Governments appear to have been totally absent from the Euro-CP market.

As was pointed out in Section 2.4, we can see that the strategy of sovereign states in using CP in parallel to their treasury bills was extremely diverse. Overall, CSDB data confirm the preliminary findings of browsing treasuries' websites. Indeed, through the initial web search, we had found indications that Austria, Belgium, Denmark, Ireland, the Netherlands and Sweden were issuing CP (as can be seen with the CSDB data). On the other hand, we had found no indication of sovereign issuances of CP by France and Germany, although this would seem to have occurred based on the CSDB data. Finally, Spain (as well as the European Stability Mechanism (ESM)) were present solely on the Euro-CP market, and did not issue other types of security in 2020 based on the CSDB data.

Table 2

Summary table of sovereign issuance of Euro-CP in 2020 (based on CSDB data)

Sovereign EU states which did not issue Euro-CP
CY - CZ - EE - FI - GR - HR - HU - IT - MT - PL - PT - RO - SI - SK
Sovereign EU state which only issued Euro-CP
ES + European Stability Mechanism
Sovereign EU states which issued Euro-CP and other MMIs
AT - BE - DE - DK - FR - IE - NL - SE

Source: CSDB.

Furthermore, it should be pointed out that there are other types of public issuers that might be worth considering.

⁵⁹ Note that there might be a misclassification issue in the CSDB: the amounts declared as "Euro-CP" tend to match the outstandings of *Letras del Tesoro* (i.e. the Spanish treasury bills) recorded on the Spanish Treasury's website (see Section 2.4).

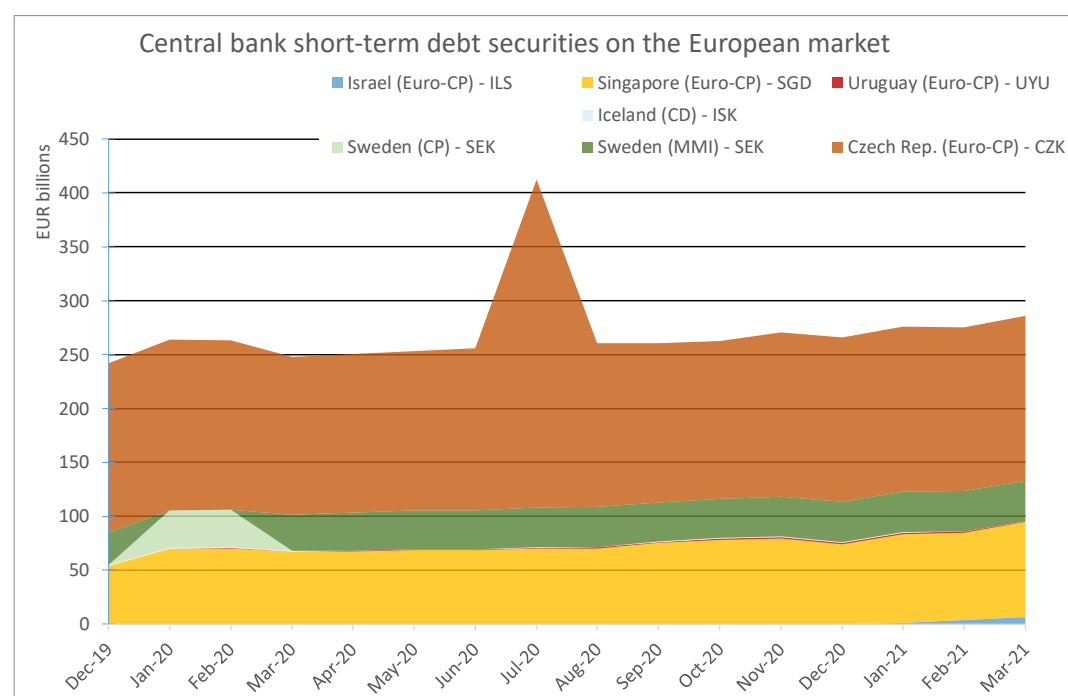


4.3.1 Central banks

Central banks did issue short-term debt securities on the European market (see Chart 17), in their own national currencies only, for an aggregated amount exceeding €250 billion. The largest outstanding corresponded to Euro-CP issued by the Czech central bank (as seen previously, with a spike likely corresponding to an overlapping rollover) for around €150 billion. This was followed by the central bank of Singapore (again on the Euro-CP market) and the central bank of Sweden (alternating CP and other MMIs). We also saw more marginal issuances of CDs by the central bank of Iceland, and of Euro-CP by the central banks of Israel and Uruguay.

Chart 17
Short-term debt issued by central banks

(EUR bn)



Source: CSDB.

4.3.2 Social security entities

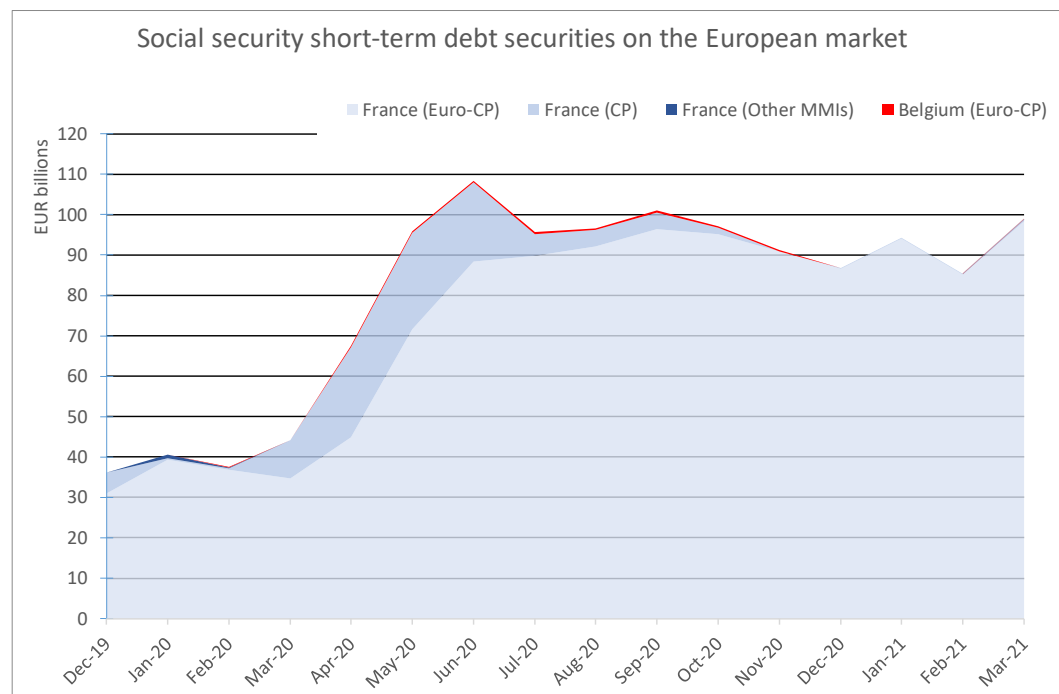
In France, the social security system issues short-term debt securities (predominantly in the form of Euro-CP). At the peak of the coronavirus crisis, outstanding amounts exceeded €100 billion (see Chart 18). The Belgian social security system is the only other example in Europe of such bodies issuing short-term debt securities (although the amounts are clearly not comparable).



Chart 18

Short-term debt issued by social security entities

(EUR bn)



Source: CSDB.

4.3.3 Local and regional governments

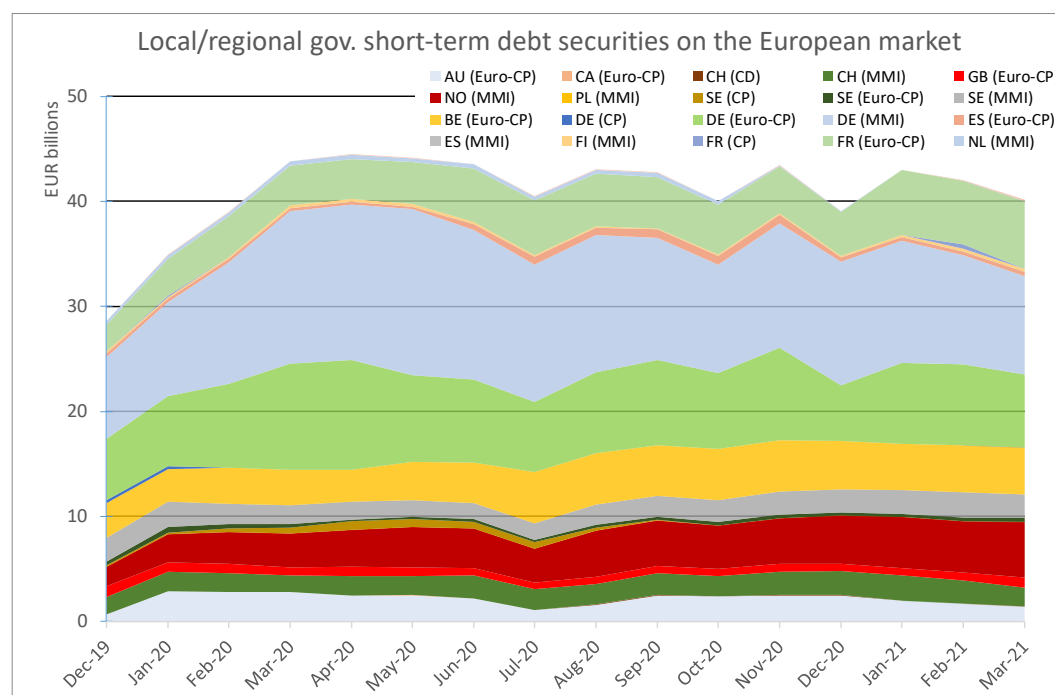
The amount outstanding of local/regional governments' short-term debt securities on the European market ranged between €40 and 45 billion. These securities were of the four main types identified in the CSDB (Euro-CP/other CP/CD/Other MMI). The largest issuers were German local/regional governments, followed by French, Belgian and Norwegian entities.



Chart 19

Short-term debt issued by local and regional governments

(EUR bn)



Source: CSDB.

4.3.4 Supranational entities: another €20 billion taken as a whole

The largest such issuers were the European Investment Bank (EIB) (with €8 billion, mostly in Euro-CP), the European Bank for Reconstruction and Development (EBRD) (with Euro-CP of €5 billion) and the World Bank (International Development Association (IDA), with Euro-CP of €5 billion).

4.4 Attempts at identifying NEU-CP within the CSDB

As was mentioned at the beginning of Section 4, NEU-CP are not clearly identified within the CSDB. It was therefore to be expected that they might be spread over the two residual categories (“other CP” or “Other MMI”). The Banque de France provided us with the list of ISIN corresponding to the NEU-CP that were still outstanding on three computation dates: March 2020, June 2020 and December 2020. It emerged that NEU-CP were present in all four CSDB categories, and in particular in the two main categories of “Euro-CP” and “CDs”. This again points to the lack of harmonised data and clear identification of the short-term securities, even within the CSDB.

For the three dates, merging the list of NEU-CP ISINs with the CSDB data allowed us to qualify to some extent the orders of magnitude presented earlier (see Chart 20). At December 2020, of the

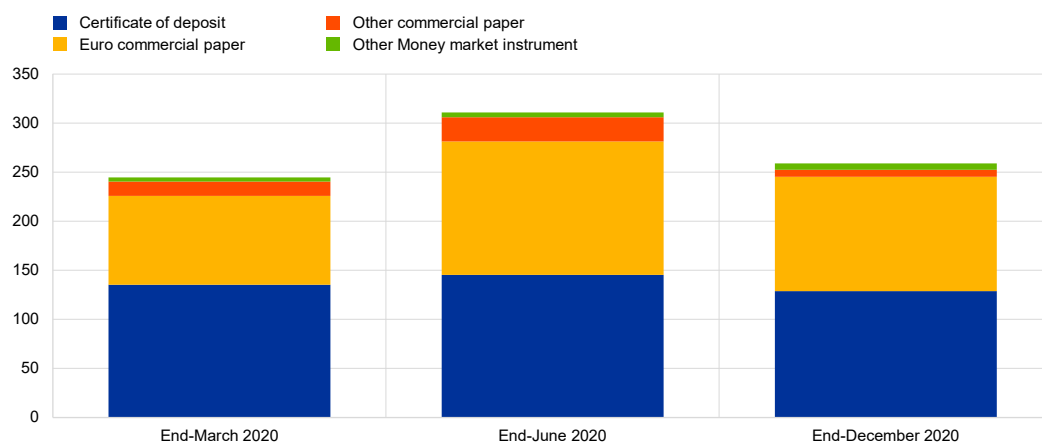


€423 billion in CDs referred to in Section 4.1, €129 billion were actually NEU-CP. Similarly, €117 billion of NEU-CP outstanding in December 2020 were previously classified as Euro-CP. A more accurate estimate of the Euro-CP market would therefore be around €850 billion at 31 December 2020.

Chart 20

How NEU-CP are classified in the CSDB

(EUR bn)



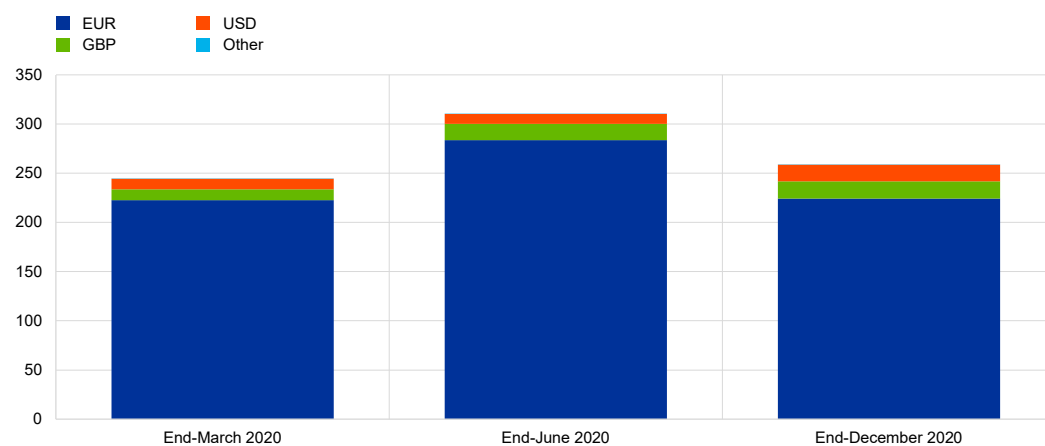
Sources: CSDB, Banque de France.

In terms of currencies, the NEU-CP market is clearly dominated by EUR (which accounted for 91% of the outstanding in March and June, and for 87% in December 2020 – see Chart 21). With an outstanding of €10 billion each in March 2020, and around €17 billion each at year-end 2020, GBP and USD made up the rest (outstandings of NEU-CP in other currencies were never more than €200 million each, and did not exceed a cumulative figure of €350 million).



Chart 21
Currencies of NEU-CP

(EUR bn)

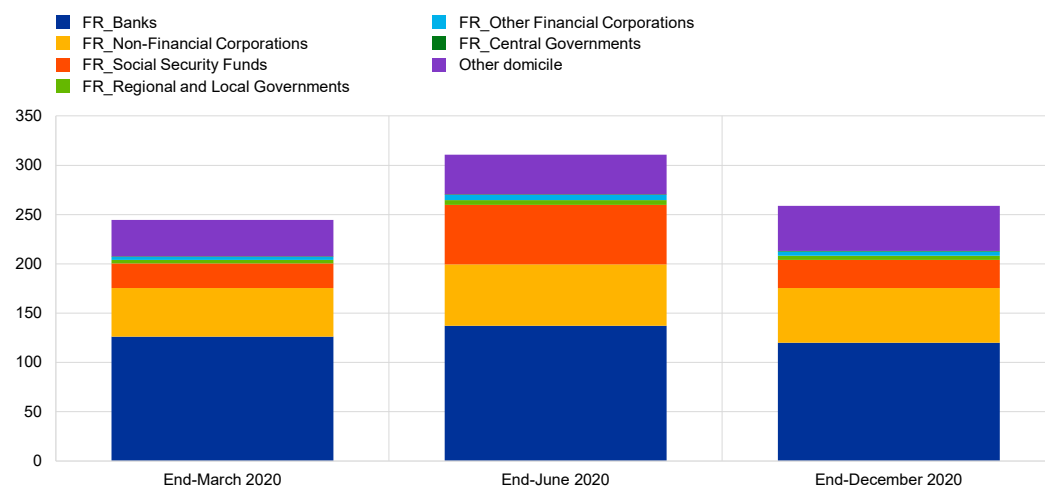


Sources: CSDB, Banque de France.

Issuers on the NEU-CP market were predominantly domiciled in France (around 85% of the total for the various dates considered – see Chart 22).

Chart 22
Issuers of NEU-CP

(EUR bn)



Sources: CSDB, Banque de France.

French banks alone accounted for 51% of the total by end-March 2020, 44% by end-June 2020, and 46% at year-end 2020. The proportion of French NFCs remained stable at around 20% of the total NEU-CP market.

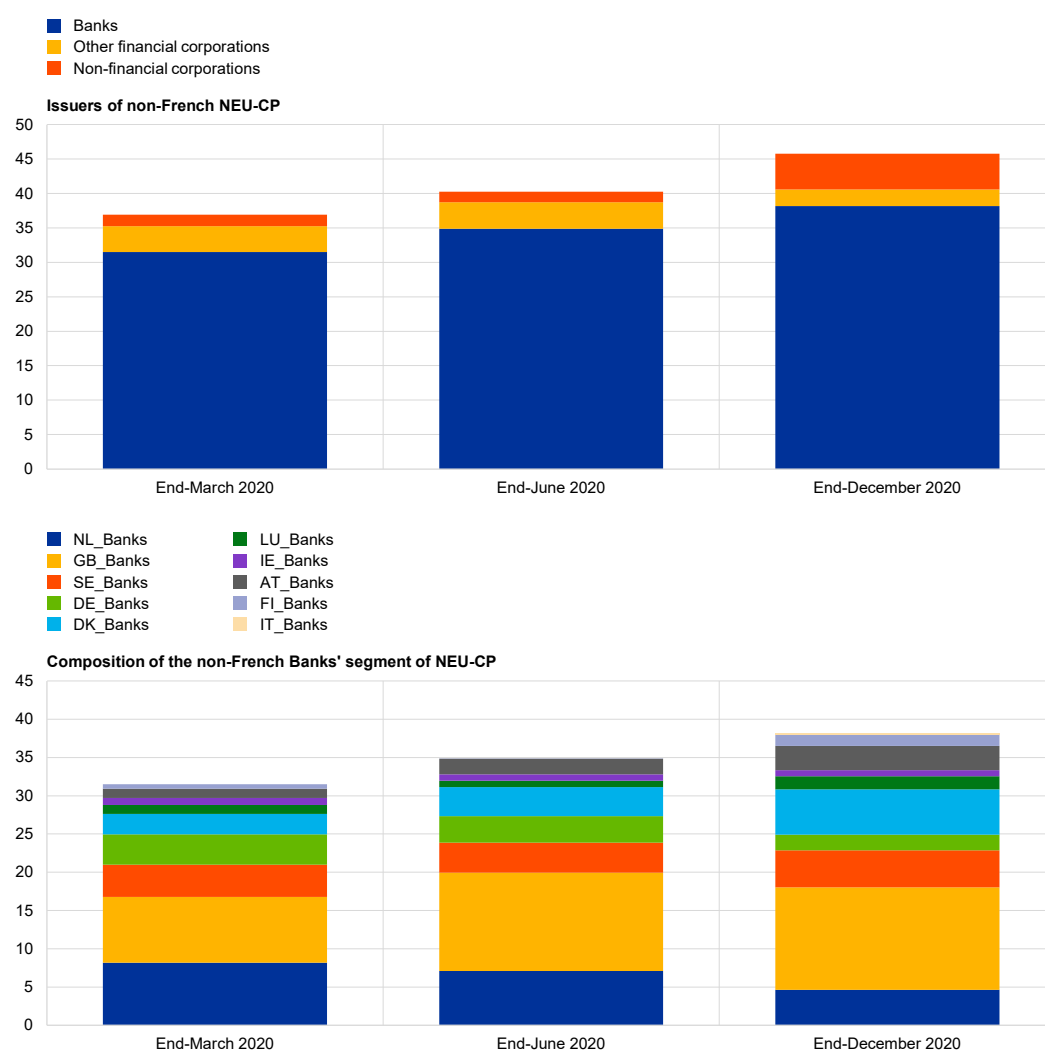


French Social Security NEU-CP more than doubled in absolute value between end-March and end-June, but then halved again by the end of the year.

The graphs in Chart 23 provide more detail of the composition of the “other domicile” NEU-CP aggregate. It can be seen that non-French NEU-CP were predominantly issued by banks (around 85%). Non-French NFCs represented a little less than 5% in the first half of 2020, but reached 11% at year-end. Non-French bank issuers were essentially domiciled in the United Kingdom, the Netherlands, Sweden, Germany and Denmark.

Chart 23
Non-French issuers of NEU-CP

(EUR bn)



Sources: CSDB, Banque de France.



4.5 A few more insights using the Securities Holdings Statistics (SHSS)

Finally, we can provide some insights into holders of European short-term debt securities, by merging data from the CSDB and SHSS, a database collected and maintained by the ESCBs since early 2014 (with data series starting from end-year 2013).

First, we would point to some of the features of this additional dataset as well as the restrictions on its scope:

- SHSS collects holders' information at security level on a quarterly basis.
- Holders are aggregated at institutional sector level.
- SHSS covers "holdings of securities by investors resident in the euro area", as well as "non-resident investors' holdings of euro-area securities that are deposited with a euro-area custodian".
- Most non-euro-area EU countries (namely Bulgaria, the Czech Republic, Denmark, Hungary, Poland and Romania) also collect SHS sector data⁶⁰.
- It should be emphasised here that the United Kingdom is not included in the perimeter.

When combining SHSS data with our previous CSDB extract, we observed that holders of the assets identified as being European short-term debt securities all along section 4 (i.e. short-term debt securities issued by EU countries and supranational entities, as well as securities issued by the United Kingdom, Switzerland, Norway and Iceland, to which we added Euro-CP issued by any other country) were only very partially identified (around 55% of the outstanding of such assets could be associated with a holder in the SHSS database over the period – see Chart 24). This might be due either to the fact that some holders fall outside the scope of SHSS (e.g. foreign-owned securities) or because the securities themselves are not recorded in SHSS.

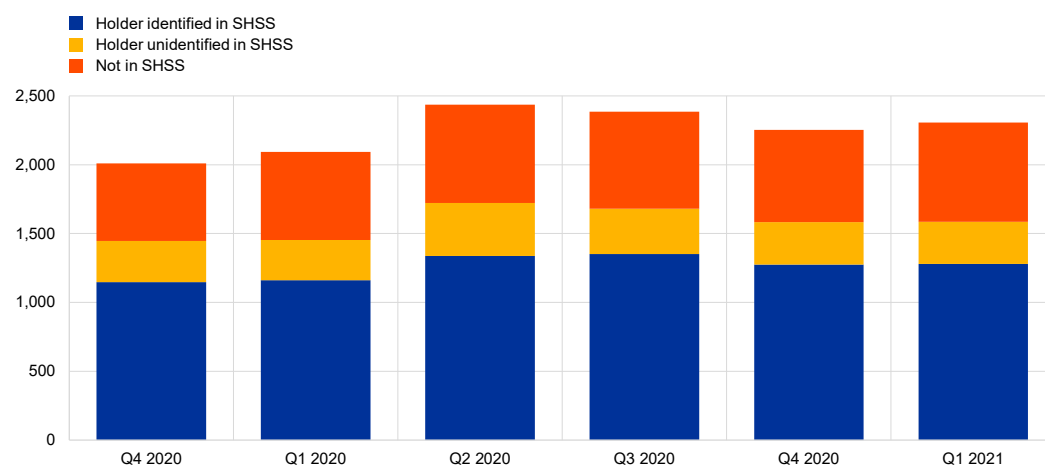
⁶⁰ For more details on SHSS, see ECB (2015), "**Who holds what? New information on securities holdings**", *Economic Bulletin*, Issue 2, Frankfurt am Main.



Chart 24

Identified holders of European short-term debt securities

(EUR bn)



Sources: SHSS, CSDB.

Note: Among the institutional sectors in the SHSS, there is an “unidentified” category, which we have indicated in light grey in the above graph. The dark grey should correspond to securities which are not even present in the SHSS.

In the following graphs, we break down the known holders by institutional sector. For reference, we also indicate the total amount of securities outstanding at each date (blue straight line).

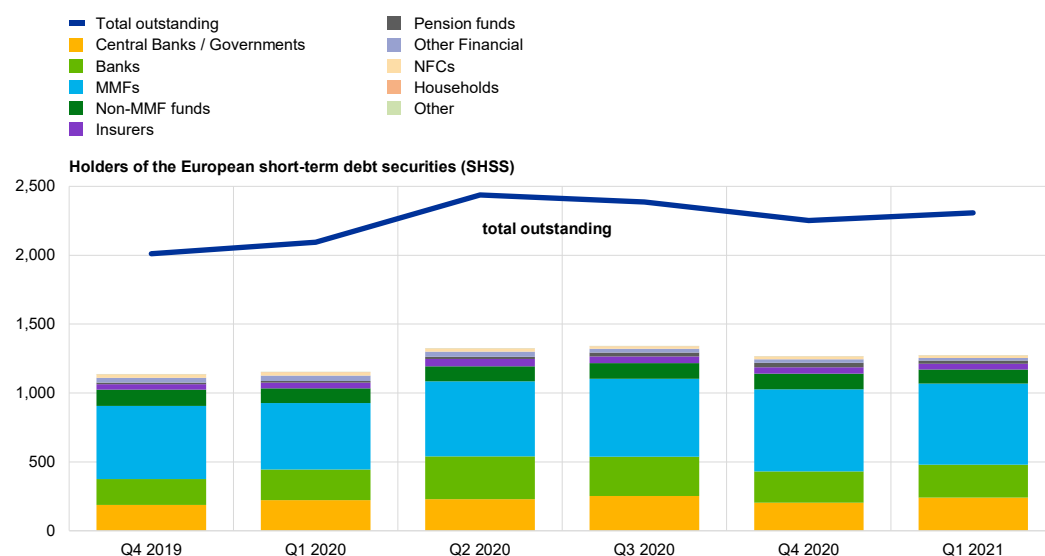
Looking at the entire market for short-term debt securities, the largest known investor sector is clearly MMF. This represented around 45% of the total of known investors (a quarter of the total CSDB outstanding – see Chart 25).



Chart 25

Institutional sector of the holders of European short-term debt securities

(EUR bn)



Sources: SHSS, CSDB.

Interestingly enough, we note that the total holdings of short-term debt securities by MMFs amounted to slightly less than €600 billion as at end 2020, while the European MMF sector amounted to more than €1,350 billion at the same date (see [ESRB, 2021](#)). Holdings of a significant amount of European MMF thus seem not to be recorded in SHSS. A comparison with the quarterly MMF portfolio data collected under MMFR since the first quarter of 2020, may assist with understanding the discrepancy.

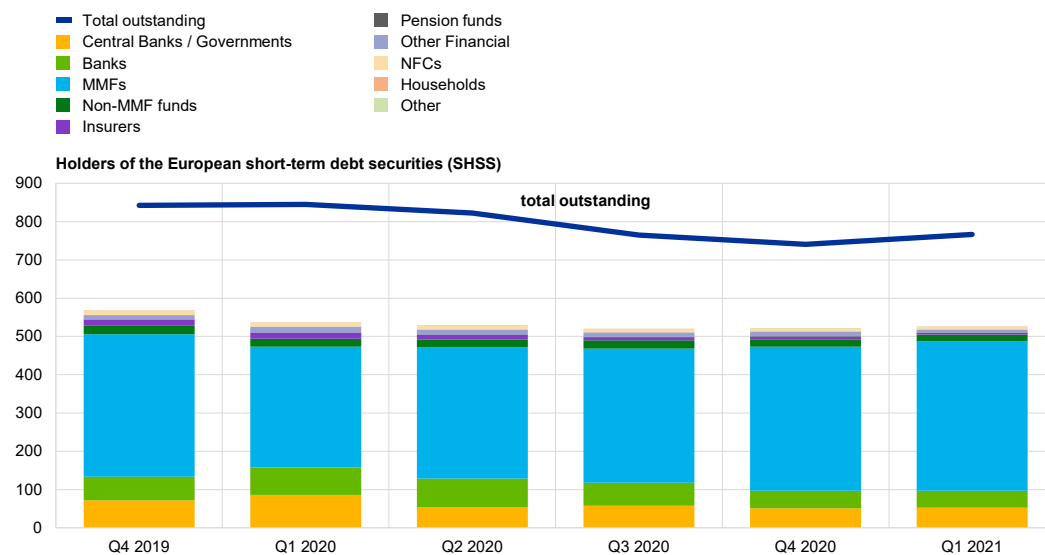
In Chart 26 and Chart 27 we provide a breakdown of the market for European short-term debt securities based on the type of issuer. We have kept the colour coding unchanged for the institutional sectors of investors.



Chart 26

Institutional sector of holders of European short-term debt securities issued by banks

(EUR bn)



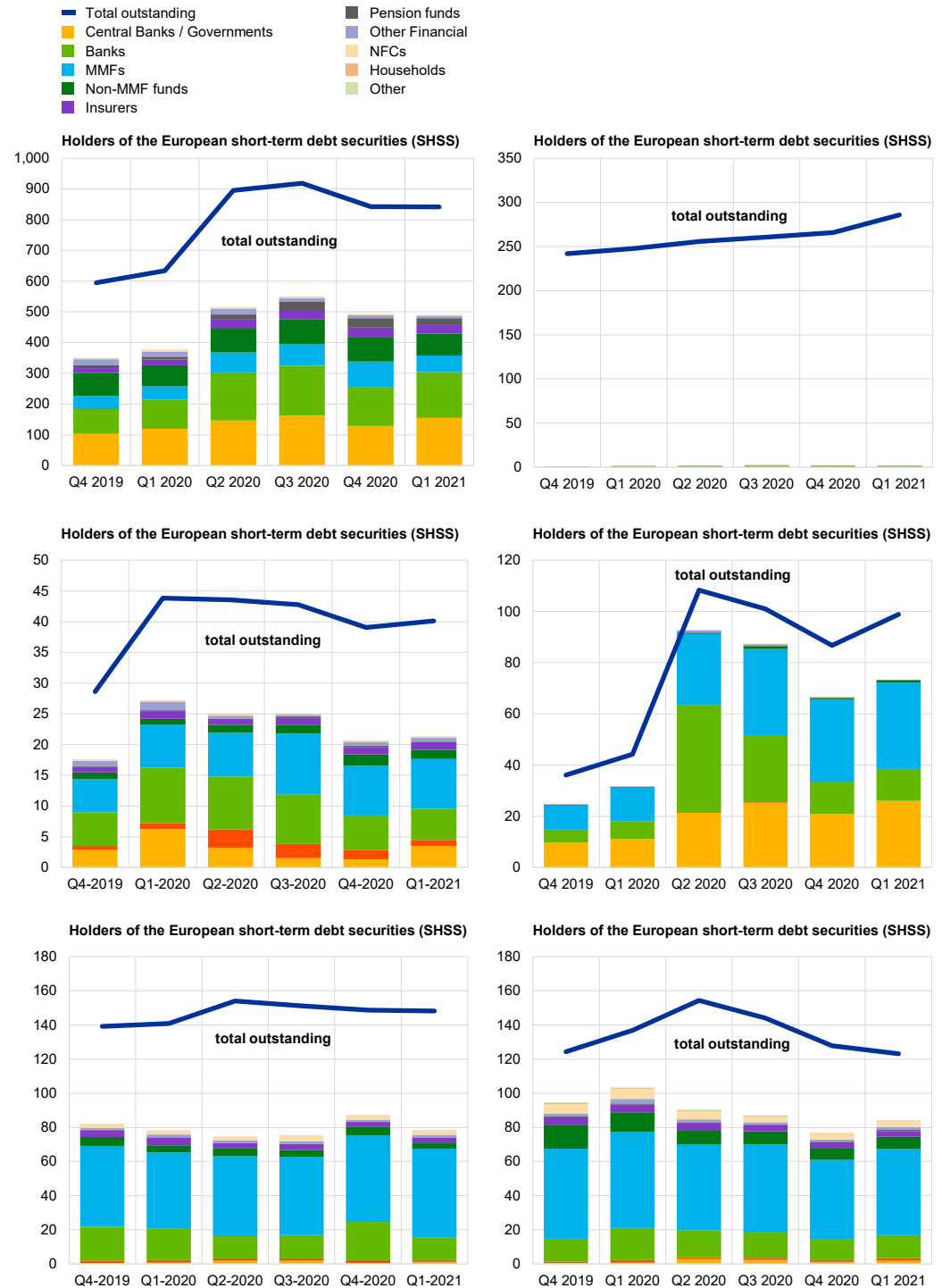
Sources: SHSS, CSDB.



Chart 27

Institutional sector of holders of European short-term debt securities, by issuing sector

(EUR bn)



Sources: SHSS, CSDB.



Several features stand out from the above graphs:

1. MMFs appeared to be significant investors in most segments. They were particularly present on bank-issued short-term securities (around 45% of the total outstanding). Their share increased to 51% at the end of the period under review given that the total outstanding tended to decrease. They maintained a stable amount of funding to NFCs over time (around €50 billion, with a peak at €56 billion at end-March 2020). MMFs also accompanied the increase in outstanding short-term debt issued by central governments, local/regional governments and social security bodies.
2. There is little information about the holders of the short-term securities issued by central banks (from Section 4.3, we know that this debt was essentially issued by the Czech, Singaporean and Swedish central banks).
3. Central banks/governments' holdings of non-financial corporations' short-term securities were almost invisible. They amounted to less than €1.5 billion as of end-year 2019, and peaked at less than €4 billion at end-June 2020. These numbers clearly do not match the public figures on central bank interventions mentioned in Section 3.3 (it should be remembered that at end-June 2020, the ESCB reported holdings of NFCs' CP of around €35 billion). This, as well as the previous point, confirm that holdings of the Eurosystem are indeed not reported in SHSS data.⁶¹

Keeping the colour code unchanged, we can also look at the split by currencies. Unsurprisingly, more is known about the holders of EUR-denominated securities (yet between a fifth and a quarter of investors are unknown).

At the end of the fourth quarter of 2020, SHSS recorded €348 billion in investments in EUR-denominated short-term securities from MMFs (Chart 28), while the EUR-denominated MMFs accounted for around €620 billion.

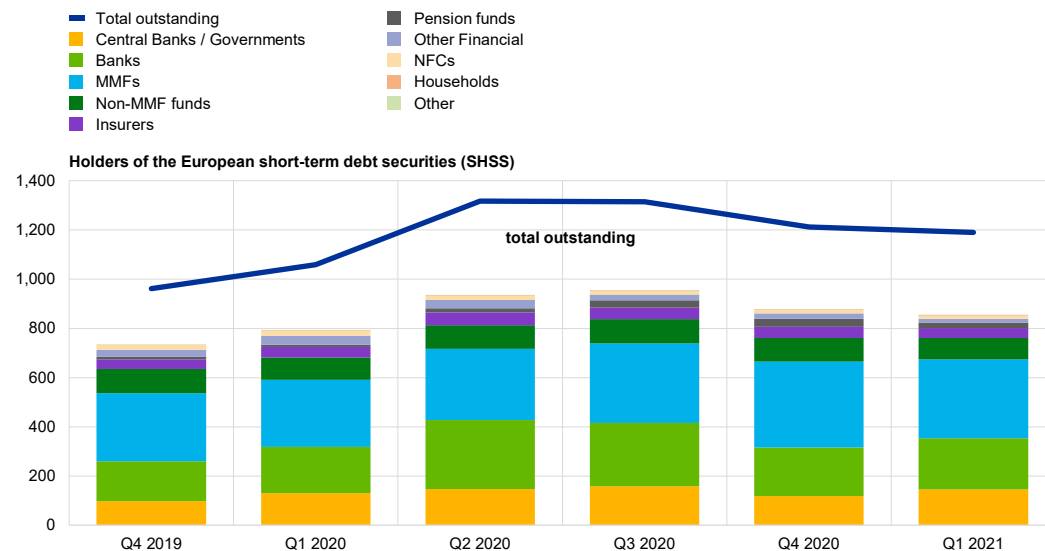
⁶¹ This important coverage limitation is clearly stated on the ECB's website: see ECB (2017), "**Extended publication of Securities Holdings Statistics**", *press release*, Frankfurt am Main, 2 February.



Chart 28

Institutional sector of holders of European short-term debt securities, EUR-denominated securities

(EUR bn)



Sources: SHSS, CSDB.

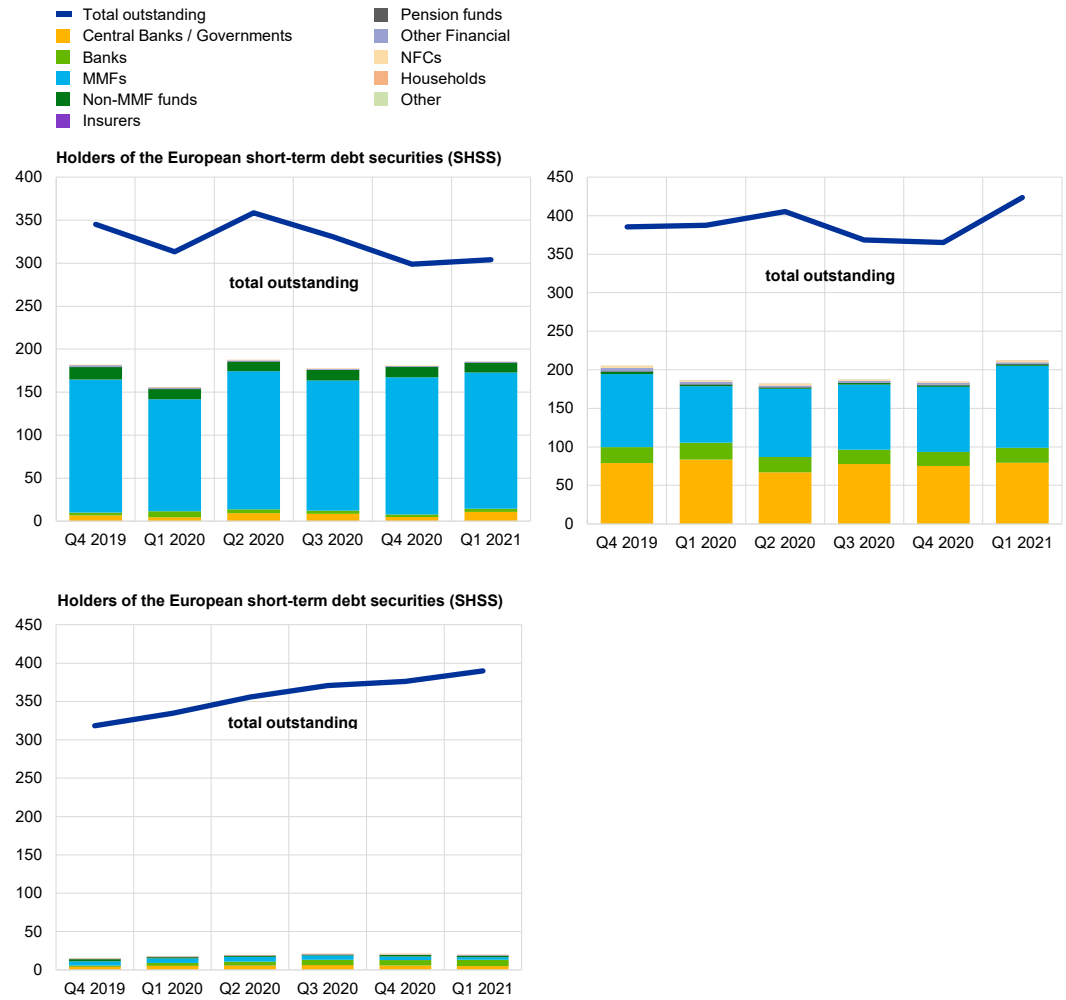
Similarly, Chart 29 (top left panel) shows that, according to SHSS, at year-end 2020, MMFs held €160 billion worth of GBP-denominated short-term securities, while the total net assets of GBP-denominated MMFs was around €300 billion at that time. Last, at the end of 2020, MMFs were reported to hold €84 billion worth of USD-denominated short-term securities (see Chart 29 – top right panel), while USD-denominated MMFs amounted to €430 billion by end-year (see **ESRB, 2021**).



Chart 29

Institutional sector of holders of European short-term debt securities, foreign currencies

(EUR bn)



Sources: SHSS, CSDB.

Consequently, although SHSS does provide some very useful information, the magnitude of the data gaps means that we only have a partial view of securities holdings, which limits any ability to draw definitive conclusions on the structure and behaviour of the short-term debt markets.



5 Conclusion/remaining issues to investigate on the Short-term ecosystem

As indicated in the introduction, MMFs were a focus of attention for the national supervisors and international organisations in the aftermath of the crisis. This note is an initial attempt to complete the diagnosis of the March 2020 episode by looking at the short-term debt securities market through which MMFs invest. As we have shown, much work is still needed to gain a better understanding of the short-term funding ecosystem, a necessary step to improve its regulation, oversight, and functioning.

Currently, the European market for short-term debt securities would seem to be fragmented and opaque. Relevant information is spread over multiple institutions, none of which are currently able to provide a comprehensive picture of the market on their own, as a result of partial reporting, limited remit, confusing terminologies, etc.

For this paper, we conducted a stock-taking exercise to locate data sources and see how we could combine them in order to describe the market as clearly as possible. In particular, we have highlighted the data gaps, as well as the potentially overlapping reporting perimeters we were able to identify. Our analysis was designed to complement the policy work on MMFs undertaken by the ESRB in 2021, by shedding light on the market lying upstream, as called for by the Board of that institution.

Yet this initial work is definitely not sufficient and needs to be supplemented: activity on the secondary market is almost entirely unknown (bids, offers, prices and volumes actually exchanged), average rates at issuance are only disclosed in some segments, while credit ratings and CRAs' shares in the short-term debt segment have not yet been assessed. In the absence of this information, we remain relatively in the dark about the actual functioning of the market for short-term debt. We do know that the market for CP/CDs is essentially OTC, hold-to-maturity and intermediated by brokers, but we do not know the size of the inventories of brokers and their actual balance-sheet capacity, just as we are unable to assess the cost of liquidity, the price adjustments (or lack of adjustment) in times of crisis, or the composition of the direct (unintermediated) investor base. These data would also make it possible to conduct a comparative analysis between the European and US short-term debt markets, and thus gain an understanding of the differences induced by the more "bank-centric" funding structure in Europe.

Once we know more about this market, how it functions and its weaknesses, it will be possible to consider policy proposals to ensure that it operates more effectively, especially in times of crisis. Indeed, aside from its policy recommendations on MMFs, the FSB has called for an improvement of the disclosure and reporting requirements for the short-term funding market (including the market for CP/CDs) as well as for reflection on ways of improving the functioning of the market.⁶²

Improvements could take the form of:

⁶² Financial Stability Board (2021), "[Policy proposals to enhance money market fund resilience – Final Report](#)", Basel, 11 October, pp. 38-39.



- an evolution of the microstructure (e.g. away from the dealer-centric model towards an “all-to-all” type of platform, or through standardisation of short-term debt instruments);
- increased transparency of volumes, prices and quotes, to attract more investors;
- enhanced regulatory monitoring.

These proposals still need to be assessed and weighed against their costs and potential detrimental effects (e.g. standardisation of CP versus contractual flexibility). This should mobilise international organisations in the coming years, and we hope that the stock-taking exercise we have conducted will contribute to this reflection.

Another unaddressed question of paramount importance is whether short-term debt securities are actually used for short-term funding needs: the very high and stable outstanding observed, even before the March 2020 crisis, would seem to indicate a significant degree of rollover. If short-term securities are recurrently used to finance longer-term cash needs, then this means that issuers operate maturity transformation and are particularly vulnerable to a sudden freeze of the market.

Given the size of the market, its importance for funding the economy, and the vulnerabilities revealed during the March 2020 market turmoil, it might be worth considering improving the transparency, standardisation and disclosure of transactions, as well as clarifying which authorities should supervise these instruments.

Aside from background investigations into MMFs’ underlying assets, the ESRB’s issues note⁶³ also called for an improved understanding of the investors’ side. A thorough analysis of investors’ motivations in redeeming their MMF shares is still needed. Indeed, leaving aside the much-discussed issue of cliff effects for CNAV and LVNAV, linked to the artificial “stable price” or “automatic imposition of fees and gates” features of these products (which do not seem to have had an impact on French VNAV⁶⁴), several aspects of the diagnosis are still largely unexplored.

First of all, we still are broadly unable to properly identify the entities that withdrew cash from MMFs and the motivations for these redemptions: on the French market, data seem to point at insurers and NFCs, but nothing more precise could be determined.

Some insurers appear to have redeemed from euro MMFs to pay for margin calls, but, so far, this analysis would appear to be valid solely for Dutch insurance and pension funds.⁶⁵ Some NFCs appear to have been in desperate need of cash to face the costs induced by the pandemic, but data on the French market seem to point to massive cash hoarding on bank accounts (no actual use of the cash). Additionally, market intelligence discussions with the French corporate treasurers association (*Association française des trésoriers d’entreprise* (AFTE)) indicate that, despite the “desperate need for cash”, NFCs were not willing to issue CP above 4-5 basis points (i.e. pay a few cents on every €100), which appears rather contradictory.

⁶³ European Systemic Risk Board (2021), “**Issues note on systemic vulnerabilities of and preliminary policy considerations to reform money market funds (MMFs)**”, Frankfurt am Main, July.

⁶⁴ See Darpeix, Pierre-Emmanuel (2021), “**Econometric analysis of the determinants of redemption flows on French Money market funds during the 2020 Crisis**”, *Risk and Trend Mapping*, AMF, Paris, July, 33 pages.

⁶⁵ ECB (2020), “**Financial Stability Review**”, Frankfurt am Main, November (see Box 8, pp. 100-102).



Price adjustments on the primary market for CP do not seem to have actually occurred (the interaction with anticipated central bank interventions might have deterred issuers from a more rapid adjustment).

Second, more generally, the March crisis points to the very question of the circulation of liquidity through the financial system and advocates for a holistic approach to understanding liquidity in stressed times. If, indeed, MMF redemptions served to pay margin calls, then cash was received by derivative counterparties who do not appear to have invested it in the short-term debt securities market or in MMFs. The use of this cash is still largely unknown. Similarly, if the cash was indeed hoarded by NFCs in bank accounts, then again banks do not appear to have channelled the deposits towards the short-term debt securities market (interaction with the banking prudential requirements).

In short, it is clear that this liquidity did not vanish altogether from the system, but was rather re-allocated, and probably hoarded. The destination of the cash is therefore a crucial issue to resolve if we want to make the short-term funding market more resilient.



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Appendix 1: Detailed screening of CP data on the Bank of England public database

We extracted from the Bank of England database all 497 series returned with the search words “commercial paper”.⁶⁶

Of these, 219 series are totally empty (they report no data point between 2011 and 2021); 33 series refer to amounts “excluding commercial paper” and are therefore irrelevant; 84 series relate to issuance rates, but were discontinued from 30 April 2013.

The remaining series can be classified as follows.

RATES:

- 24 series capture various indicative rates on the short-term market: the average discount rate for three-month T-Bills (USD and GBP), the average three-month euro-dollar deposit interest rate, the average three-month euro-sterling deposit rate, the average of the three-month EURIBOR, the average three-month euro interbank lending rate. All these indicative rates are provided on a quarterly frequency, at best.
- four series provide the average rate for three-month CDs (at best, at a quarterly frequency) and all four were discontinued on 30 June 2018.

CENTRAL BANK INTERVENTIONS:

- 12 weekly series report the magnitude of the interventions of the Bank of England on the CP/CD market (only six relate to the “Bank of England and HM Treasury’s COVID Corporate Financing Facility”; the remaining six were discontinued on 4 August 2016).

VARIATIONS:

- 68 series indicate volumes issued, repayments, variations in outstanding by currency and issuer (type, and sometimes domicile), but corresponding outstanding amounts are not available for these series.

OUTSTANDING AMOUNTS (MONTHLY SERIES):

- From the issuance point of view, we have 26 series:
 - *Issuing agent*: only UK resident MFIs (which are further broken down between: UK-owned MFIs, UK-owned banks, US-owned banks, Japanese-owned banks, European-owned banks (excluding UK-owned), other developed countries-owned banks, other-owned banks).
 - *Currencies*: GBP, all foreign currencies (+EUR singled out).

⁶⁶ See Bank of England database: [Search results](#), **Words searched: commercial, paper**



- + Outstanding issued by Channel Islands and Isle of Man institutions in GBP/all foreign currencies, discontinued in December 2020.
- From the holding point of view, we have 27 series (with a focus on the CP/CDs issued by UK-resident MFIs):
 - *Holding agent*: only UK resident MFIs (which are further broken down between: UK-owned MFIs, US-owned banks, Japanese-owned banks, European-owned banks (excluding UK-owned), other developed countries-owned banks, other-owned banks).
 - *Currencies*: GBP, all foreign currencies (+EUR singled out).
 - + Holdings by Channel Islands and Isle of Man institutions in GBP/all foreign currencies, discontinued in December 2020.



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The views expressed in this paper are those of its author. They do not necessarily reflect the position of the Autorité des marchés financiers (AMF) or of the European Systemic Risk Board (ESRB). The analysis points to some potential data quality issues. We have tried to ascertain the origin of the visible jumps and discontinuities in the aggregate series, and in one case have corrected a data point that we could relate to a unit mistake. However, future data quality checks and subsequent revisions of the underlying individual series might allow a more robust overview of the market for short-term debt securities.

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