

HIGH-YIELD BOND MARKETS DURING  
THE COVID-19 CRISIS: THE ROLE OF  
MONETARY POLICY

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## **Abstract**

This article documents the difference in corporate bond issuance between the euro area (EA) and the United States (US) in 2020, especially in the high-yield (HY) segment, and discusses the role that the monetary policy measures undertaken by the US Federal Reserve (Fed) and the ECB in response to the Covid-19 crisis may have played in explaining such difference. We document that the issuance of HY bonds since February 2020 has been lower by historical standards in the EA than in the US. The Fed's measures aimed at the HY segment, mainly the purchase of HY bond exchange traded funds (ETFs), could have reduced credit spreads and improved market liquidity, which in turn could have stimulated debt issuance. Alternatively, HY issuers in the EA may have faced better bank funding conditions due to the ECB's targeted longer term refinancing operations (TLTRO) and to other measures by national fiscal authorities, leading such issuers to substitute bank credit for bond finance. The article discusses these possibilities and argues that they all may have played a role to a certain extent.

**Keywords:** corporate bond purchase programs, monetary policy, COVID-19.

**JEL classification:** E58, E43, G12.

## Resumen

Este documento muestra la diferencia en la emisión de bonos corporativos entre el área del euro y Estados Unidos en 2020, especialmente en el segmento de alto rendimiento [*high yield* (HY)], y analiza cómo las medidas de política monetaria adoptadas por la Reserva Federal y el Banco Central Europeo (BCE) en respuesta a la crisis del COVID-19 pueden haber contribuido a explicar tal diferencia. Documentamos que la emisión de bonos HY desde febrero de 2020 ha sido relativamente menor en el área del euro que en Estados Unidos. Las medidas de la Reserva Federal dirigidas al segmento HY, principalmente la compra de fondos cotizados en bolsa [*exchange traded funds* (ETF)] compuestos de bonos HY, podrían haber reducido los diferenciales crediticios y mejorado la liquidez del mercado, lo que a su vez podría haber estimulado la emisión de deuda. Alternativamente, en el área del euro los emisores HY pueden haber disfrutado de mejores condiciones de financiamiento bancario debido a las operaciones de refinanciamiento a plazo más largo del BCE y a otras medidas de las autoridades fiscales nacionales, lo que ha llevado a dichos emisores a sustituir la financiación mediante bonos por crédito bancario. El documento analiza estas posibilidades y argumenta que todas ellas pueden haber desempeñado un papel hasta cierto punto.

**Palabras clave:** programas de compras de bonos corporativos, política monetaria, COVID-19.

**Códigos JEL:** E58, E43, G12.

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## 1 Introduction

The outbreak of the Covid-19 virus had a profound effect on corporate finance. Revenue shortfalls and unprecedented uncertainty about economic perspectives drastically increased the demand for liquidity of firms affected by the pandemic. Yet, access to bond finance was impeded by evaporating market liquidity and fire sales, which urged an immediate response by central banks. For instance, the ECB and the US Federal Reserve System (the “Fed”) reacted by announcing, among other measures, new programs of asset purchases, including the purchase of corporate debt.

In this article, we analyze the effects of these programs on corporate debt issuance. In particular, we discuss the possible role that bond purchase programs and other monetary policy measures employed during the pandemic may have played in explaining the observed differences in bond market dynamics between the US and the euro area (EA) throughout 2020. We concentrate on the high yield segment since, on the one hand, it has demonstrated divergent dynamics between the two areas and, on the other, played different roles in the bond purchase programs of the Fed and the ECB. We analyze whether monetary policy affected the pricing of credit risk, market liquidity, or the supply of market finance substitutes. For this last aspect, we also discuss the possible role of bank credit-supporting measures by national authorities in the euro area.

The rest of the article is organized as follows. The second section describes issuance and price dynamics in the corporate debt markets of both economies. In the third section, we analyze several ways central bank programs could affect bond issuances in the US and the EA, with a special focus on the case of Spain.



## 2 High Yield bond market dynamics since the outbreak of Covid-19

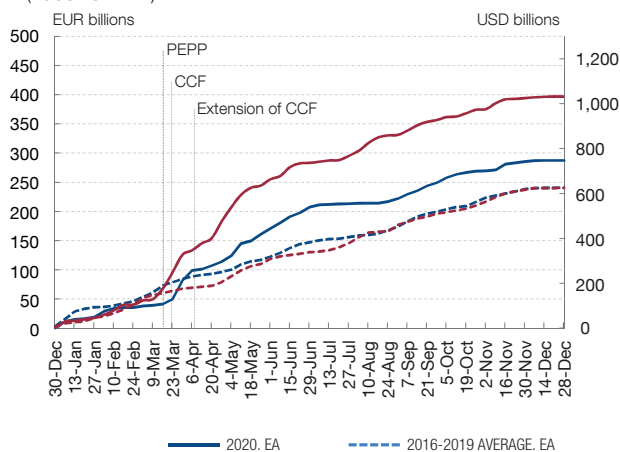
Corporate debt markets were severely hit by the outbreak of the Covid-19 pandemic at the beginning of 2020. The spread of the virus throughout Europe and the US in February-March was accompanied by a rapid deterioration of market conditions and falling prices of risky assets, with bond markets being no exception. Higher demand for market finance by affected firms coupled with uncertainty about the evolution of the health crisis resulted in strong upward pressure on credit risk premiums<sup>1</sup> and initially slower bond issuance (see Charts 1 and 2). These developments prompted an immediate reaction by central banks.

Primary markets for corporate bonds took off in March 2020 immediately after the introduction of monetary policy measures. The accumulated volume of new bond issuances in the US in 2020 increased by 66.8% in comparison with the average volumes in 2016-2019. In the EA, the corresponding increase in issuances amounts to 16.4%. The two economic areas further differ in the volumes of corporate bond issuances across credit risk categories. In the US, the accumulated volume of newly issued Investment Grade (IG) bonds and High Yield (HY) bonds<sup>2</sup> is 65.3% and 72.8% higher than in 2016-2019, respectively. For the EA, the volume of newly issued IG bonds is 19.4% higher than in 2016-2019 while that

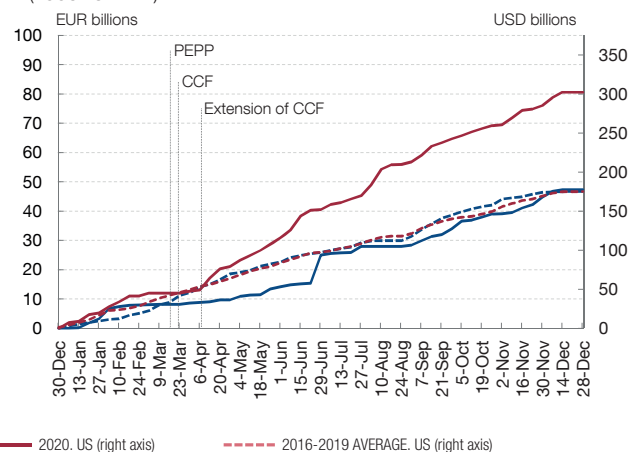
Chart 1

### CORPORATE BOND ISSUANCE IN THE EA AND THE US IN 2020

1 INVESTMENT GRADE BONDS ISSUED BY NON-FINANCIAL CORPORATIONS (ACCUMULATED)



2 HIGH YIELD BONDS ISSUED BY NON-FINANCIAL CORPORATIONS (ACCUMULATED)



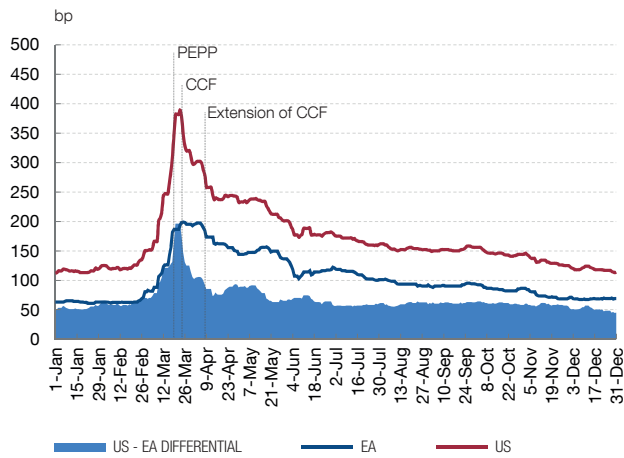
**SOURCE:** Dealogic, own calculations. Weekly series; dates on the horizontal axis indicate beginnings of weeks. Vertical lines indicate corporate bond purchase programs' announcements: the announcement of the Pandemic Emergency Purchase Programme (PEPP) by the ECB on March 18, the announcement of the Corporate Credit Facility (CCF) by the Fed on March 23 and its extension on April 9.

- 1 Credit risk spreads measure the difference between required returns on corporate bonds and the risk-free rate of similar maturity (typically, the yield on government bonds). The spreads quantify the risk premium required by investors to compensate for default risk and form a part of firms' cost of funds.
- 2 An investment grade assigned by a rating agency to an issuer or a bond issue indicates a relatively low risk of default. High yield bonds, on the contrary, are characterized by elevated default risks. To compensate for greater credit risk, investors require higher yields on their holdings of high yield bonds in comparison with the required returns on investment-grade securities.

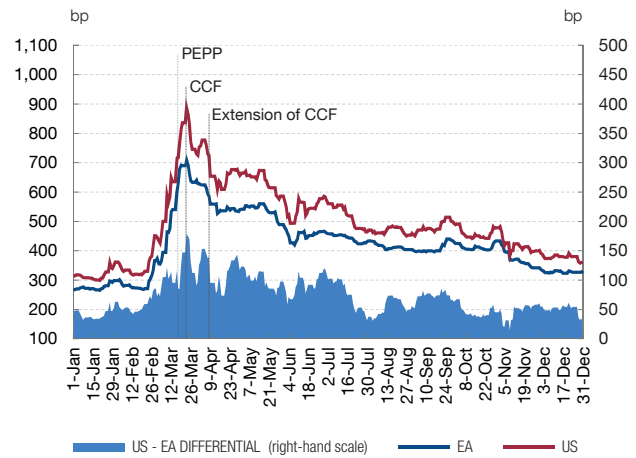
Chart 2

**CREDIT RISK PREMIUM ON IG AND HY BONDS IN THE EA AND THE US IN 2020**

1 CREDIT RISK PREMIUM. INVESTMENT GRADE BONDS



2 CREDIT RISK PREMIUM. HIGH YIELD BONDS



**SOURCE:** Thomson Reuters Datastream. ICE BofA bond spreads: Euro Corporate Index (EA IG), US Corporate Index (US IG), Euro High Yield Index (EA HY), US High Yield Index (US HY). Vertical lines indicate corporate bond purchase programs' announcements: the announcement of the Pandemic Emergency Purchase Programme (PEPP) by the ECB on March 18, the announcement of the Corporate Credit Facility (CCF) by the Fed on March 23 and its extension on April 9.

of HY bonds exceeds its past levels only marginally (by 1.4%). The HY bond issuance in the EA is 14.7% lower than in the recent past if one further excludes the two largest bond issuances that took place at the end of June 2020. Chart 1 illustrates the dynamics of bond issuance in the two areas.

With few minor exceptions, bond issuance in the US is higher than in the past across all industries and credit risk categories. The EA bond issuance, on the contrary, is more heterogeneous, with few industries contributing negatively to the issuance dynamics. Table 1 decomposes deviations of bond issuance from their 2016-19 levels by industry. Relative to the US, the slowest sector-specific performance in the EA is observed in Telecommunications, Agriculture, Food & Beverages, Metal & Steel, Mining, and Professional Services. Because of their market shares, Telecommunications, Metal & Steel, and Agriculture are the largest negative contributors to the sluggish dynamics of the HY segment in the EA. In general, the differences in industrial composition do not contribute to explaining overall differences in HY bond issuance between the two areas.

Credit risk spreads, both in the IG and HY segments, increased substantially in March 2020 in the EA and US (see Chart 2) due to the emergence of the pandemic crisis. In the run up to the announcements of policy measures in March, credit risk spreads in the US increased more than the European ones. After the introduction of monetary policy measures and fiscal support aimed to alleviate the financial consequences of the Covid-19 outbreak, the premiums declined but stayed elevated relative to the ones observed at the beginning of the year until June-July 2020, especially in the HY segment. By the end of the year, the

Table 1

**INDUSTRY-LEVEL DYNAMICS OF BOND ISSUANCES IN 2020**

Sector	Contribution to the total deviation from past levels, pp			
	IG		HY	
	US	EA	US	EA
Aerospace & Defense	5.3	3.2	0.6	0.7
Agriculture & Forestry	0.5	0.3	0.1	-4.0
Auto & Truck	0.7	-2.8	6.3	14.0
Chemicals	1.5	2.5	2.0	0.1
Computers & Electronics	8.9	5.9	5.9	1.3
Construction & Building	3.4	1.2	1.1	-0.5
Consumer Products & Textile	2.1	1.0	1.8	-1.7
Food & Beverage	3.6	-4.9	2.7	-0.4
Healthcare	3.3	3.7	8.5	0.5
Leisure & Dining	4.0	0.4	9.1	1.6
Machinery	2.1	0.0	1.5	7.0
Metal & Steel	0.5	-0.7	1.3	-7.9
Mining	0.1	-0.1	1.5	-1.5
Oil & Gas	5.8	5.9	5.2	-3.2
Professional Services	2.4	0.2	0.7	-1.8
Real Estate	0.4	0.8	-0.3	-0.3
Retail	2.6	4.5	5.0	1.4
Telecommunications	9.6	-2.4	9.9	-4.8
Transport	2.9	0.7	4.3	3.3
Utility & Energy	6.7	3.0	-0.2	-1.7
Finance, Insurance & Holding companies	-1.2	-2.8	5.6	-0.7
Total	65.3	19.4	72.8	1.4

**SOURCE:** Dealogic. Each column reports industry-specific contributions to the total deviation of bond issuances in 2020 from to their past volumes. Past volumes of bond issuances are averaged over the years 2016-2019. Issuances of short-term maturity (less than 1.5 years) are not included.

differentials between the US and the EA spreads had stabilized at their pre-Covid levels. In the next section, we describe potential mechanisms that can reconcile the observed behavior of prices and quantities in the primary market of corporate bonds, and in particular the diverging issuance dynamics (especially in the HY segment) in both economies despite similar price developments.

### 3 The interactions between monetary policy and bond issuance

Monetary policy measures undertaken by the Fed and the ECB can affect corporate debt markets, and in particular the HY segment, in several ways. First, central bank's bond purchases can increase market prices and, as a consequence, reduce the cost of market funding. Second, they can restore liquidity in the secondary markets and, by doing that, provide the necessary liquidity support for the primary ones. Finally, central banks can also affect the demand for bonds indirectly by stimulating bank credit, an effect that may be reinforced in those jurisdictions where bank credit supply is also supported through fiscal measures (such as public loan guarantees). In the rest of this article, we analyze these three channels in more detail.

#### 3.1 Corporate bond purchase programs and credit spreads

Central banks' purchases in the corporate debt market can increase the risk-bearing capacity of price-sensitive market investors by removing the bonds from their balance sheets.<sup>3</sup> This decreases bond yields which, in turn, can stimulate corporate debt issuance.

The ECB's Pandemic Emergency Purchase Program (PEPP), announced on March 18, 2020, includes purchases of securities issued by the nonfinancial corporate sector. Although the ECB eased its eligibility requirements in terms of the type of securities bought under the program, it left unchanged the requirement (already present in its regular asset purchase program, the APP) that eligible bonds must have an investment-grade credit rating. Bond prices stopped falling soon after the program was announced, which paved the way to a gradual normalization of credit risk premiums.

In contrast to the policy measures undertaken by the ECB, the programs adopted by the Fed allow the purchases of HY corporate bonds by the central bank. First, the Fed announced on April 9 that the debt of "*fallen angels*" (i.e., bonds that have been downgraded from IG to HY during the crisis) would remain eligible for purchases under both the Primary Market Corporate Credit Facility (PMCCF) and the Secondary Market Corporate Credit Facility (SMCCF), as long as issuers had IG rating by March 22, 2020.<sup>4</sup> Notice that this measure entails purchases of HY bonds only to the extent that there have been *fallen angels* during the pandemic crisis. Second, and more importantly, purchases of bond exchange-traded funds (ETFs) were also extended on April 9 to allow for broader HY exposure (in addition to bonds issued by *fallen angels*).<sup>5</sup>

<sup>3</sup> See Vayanos and Vila (2009) for a theoretical model of this mechanism. For empirical evidence on the effects of large scale bond purchases by the Fed see, for example, D'Amico and King (2013).

<sup>4</sup> Both facilities restrict purchases of HY bonds to those issued by *fallen angels* that have been downgraded to a rating as low as BB- since the program was first announced on March 23, 2020.

<sup>5</sup> An exchange-traded fund is an investment fund whose shares are traded on an exchange throughout the day. ETFs typically track underlying indices of assets (stocks, bonds, currency, or commodities). The difference between the ETF share prices and the underlying assets' prices is arbitrated away relatively fast in regular times. An increase in demand for ETF shares incentivizes arbitrageurs (large financial institutions) to exchange a basket of securities in proportions held by the fund for the newly created shares (creation units). I.e., higher demand for ETF shares by investors translates into higher demand for underlying assets by arbitrageurs. Bond ETFs may track bond indices of different credit risk or various maturities.

Table 2

**COMPOSITION OF ASSET HOLDINGS OF SMCCF AS OF DECEMBER 29, 2020**

Asset	Holdings, \$bn						
	of which:		IG		HY		
			of which:		of which:		
			above BBB	BBB	BB	below BB	
Bonds	5.54	5.36	2.34	3.02	0.18	0.18	0.00
ETFs	8.78	7.62	3.84	3.78	1.15	0.61	0.54
Total	14.32	12.99	6.19	6.80	1.33	0.78	0.54
Share of ETFs	61.3%	58.7%	62.1%	55.6%	86.8%	77.6%	100.0%
Share in total	100.0%	90.7%	43.2%	47.5%	9.3%	5.5%	3.8%

**SOURCE:** SMCCF Transaction-specific disclosures from January 11, 2021; ETFs portfolio disclosures, own calculations.

The market reaction to the Fed's successive announcements suggests that the corporate debt facilities positively affected bond prices and stimulated issuances. To see this, we note that the sequence of Fed's announcements appears to be reflected in prices and bond issuance dynamics. In the case of IG bonds, over the next 3 days after the initial announcement of the CCF programs on March 23, the spread between the US and the EA IG credit risk premium fell by 64bp, eliminating almost half of the increase in the US-EA credit risk differential that had materialized since mid-February. Similarly, US IG issuances further increased in the weeks following the initial announcement of the CCF programs.

In the case of HY bonds, the US-EA credit risk differential for HY bonds dropped by 44bp on the day of announcement of the CCF extensions on April 9 to include HY bond ETFs (on the same day, the IG differential between the two areas decreased by 7bp, probably reflecting the effect of *grandfathering*, i.e. direct purchases of bonds of potential *fallen angels* by the Fed).<sup>6</sup> Importantly, HY US issuances accelerated relative to EA ones only after the announcement of the CCF extensions. One should be careful, however, when attributing all variation in the HY issuance to this channel, as the Fed's corporate facilities were extended on different dimensions and coincided with the introduction of other programs.

Table 2 provides details on the composition of the Fed's corporate bond portfolio under the SMCCF as of end of December, 2020. Purchases have been concentrated on IG bonds (90.7% of portfolio). The HY bond holdings are almost entirely comprised of ETFs, with direct bond purchases accounting only for 13% of these holdings. The direct HY bond holdings correspond solely to *fallen angels*.<sup>7</sup> The overall corporate bond holdings of the Fed are

<sup>6</sup> Price effects are observed even comparing eligible and non-eligible issues of the same firm. See, for instance, Gilchrist *et al.* (2020).

<sup>7</sup> In its bond purchases, the Fed follows a broad market index of bonds eligible under SMCCF; hence, the small share of *fallen angels* in its holdings corresponds to the issuers that have been actually downgraded from IG to HY whose share is small relative to the whole IG segment.

small (\$14.3bn) relative to the announced program size,<sup>8</sup> but comparable with the ECB's actual purchases of private sector corporate bonds under the PEPP.<sup>9</sup> The Fed has not purchased shares in corporate bond ETFs since July 23, 2020 and, so far, no purchases have been conducted in the primary markets. Low volume of purchases is consistent with the observation that price effects of CCF realized largely upon program announcement rather than during actual bond purchases throughout the year.

The estimated volume of US *fallen angel's* bond debt accumulated in 2020 since the Fed's March announcement amounts to \$137bn or, equivalently, 10% of the HY segment's size at the beginning of the pandemic.<sup>10</sup> Given a relatively small weight of *fallen angels* in the HY segment and the fact that 86% of the Fed's HY portfolio is comprised of ETFs, one can conclude that, unlike the effect of purchases of HY ETFs, the actual impact of *grandfathering* (i.e. direct purchases of *fallen angels*) on the whole HY segment is likely to be moderate.

### 3.2 Corporate bond purchase programs and market liquidity

The higher pace of bond issuance may be related to the improved overall liquidity conditions in the secondary markets. Developments in the secondary markets can affect the primary markets (i) since pricing in the latter is usually benchmarked against the former, or (ii) because of the effect they may have on underwriters' capacity or willingness to intermediate bond issuance. Following this line, O'Hara and Zhou (2020) note that central banks' bond purchase programs could signal a liquidity backstop for corporate bonds (central banks as *buyers-of-last-resort*) and reduce the risk to dealers of facing a one-sided market.

In the US, corporate bond market liquidity was evaporating rapidly before the Fed announced its asset purchase program. Boyarchenko, Kovner, and Shachar (2020), when analyzing the effects of the Fed's CCF, find an "immediate improvement in primary market issuance and pricing after the facility announcement, particularly for [but not limited to] issuers eligible for the facility." They note that "the acceleration in the pace of issuance triggered by the announcement of the CCF is not concentrated in the five year or less maturities that are eligible for purchases by SMCCF." They attribute acceleration in bond issuance to the restored demand for fixed-income assets by long-term investors in an environment in which Fed's announcements helped to reduce uncertainty and repaired liquidity in the secondary markets. Gilchrist *et al.* (2020) provide further evidence that

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<sup>8</sup> The combined size of the SMCCF and the PMCCF was announced to be up to \$750bn.

<sup>9</sup> At the end of January 2021, ECB's private sector corporate bond holdings amounted to €22.3bn, with 40.8% of these bonds acquired in the primary market.

<sup>10</sup> This estimate is based on S&P Global Ratings (2021), which includes all issuers' most recent debt liabilities (including bank debt) but excludes commercial paper when data is available. For a few issuers not included in the above-mentioned S&P report, the total debt volume is taken from Capital IQ or Fitch solutions. The total debt of *fallen angels* in 2020 reached \$318bn (\$258bn since the Fed's March announcement). The estimate reported in the main text is based on the assumption that the share of bond debt in the BBB firms' total debt liabilities in 2020 was similar to the one in 2019 (53% as reported in S&P Global Ratings (2019)). The HY segment's size estimate is based on ICMA (2020), S&P Global Ratings (2019), and Dealogic.

bid-ask spreads in corporate bond markets declined by nine basis points within a 10-day window bracketing the first announcement of CCF, although, no economically significant effect on liquidity was observed after the announcement of CCF extension in April.

Similarly to the US, corporate bond liquidity in the EA deteriorated drastically following the pandemic outburst in February-March 2020. During this period, corporate bond bid-ask spreads increased from 35pb to 65pb.<sup>11</sup> This adverse drift came to a halt after the ECB had introduced the PEPP, although bid-ask spreads on corporate bonds remained elevated during 2020.

Broader measures of bond market liquidity across risk segments provide further evidence on the role of monetary policy. In particular, ICE Liquidity indicators<sup>12</sup> illustrate a sharp decline of market liquidity in the US and the EA both in the IG and HY segment before the central banks announced their asset purchase programs. Following these announcements, liquidity conditions started to recover. According to these indicators, by the end of 2020, the IG market liquidity broadly restored to its pre-pandemic levels both in the US and the EA. However, liquidity recovery in the HY segment turned out to be slower in the EA than in the US. Thus, despite a larger initial decline, the US HY market liquidity index returned to its pre-pandemic levels by the end of 2020, outpacing the EA HY liquidity index that still falls short of its normal levels.<sup>13</sup>

### 3.3 TLTRO, credit supply, and substitution of bank credit for bond finance

As mentioned before, HY bonds are not eligible for purchases under the ECB's corporate bond buying programs. However, other ECB support measures, such as the improvement of conditions of its targeted longer-term refinancing operations (TLTRO) at the onset of the pandemic, are transmitted via bank credit rather than via market finance. An increase in bank credit supply due to favorable funding conditions offered in the TLTRO program (conditions that are more favorable the stronger the lending performance of participating banks) can decrease the costs of bank credit for EA firms. If improvement of financial conditions is more pronounced for the riskier corporate segment, one would observe a shift in the financial structure of HY issuers towards bank-supplied funds. In turn, the reduced volume of new bond issuances by such firms would be reflected in lower yields and spreads, for a given investor capacity to absorb such issuances.

Likewise, public credit guarantee programs set up by national governments in the euro area countries can increase bank credit supply by capping default losses and increasing the effective expected return on lending. An increase in credit supply due to public guarantees can have stronger effects on bank credit to HY bond issuers if expected losses decrease more for such issuers. Interactions with monetary policy

<sup>11</sup> See ESMA (2020).

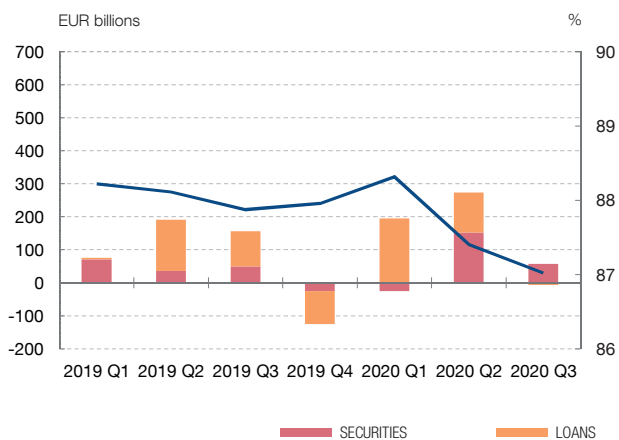
<sup>12</sup> ICE Liquidity indicators trace trade volume capacity, volatility, time to liquidate, and liquidation costs which are then aggregated into an index by asset class, sector, and geography.

<sup>13</sup> See ICMA (2021).

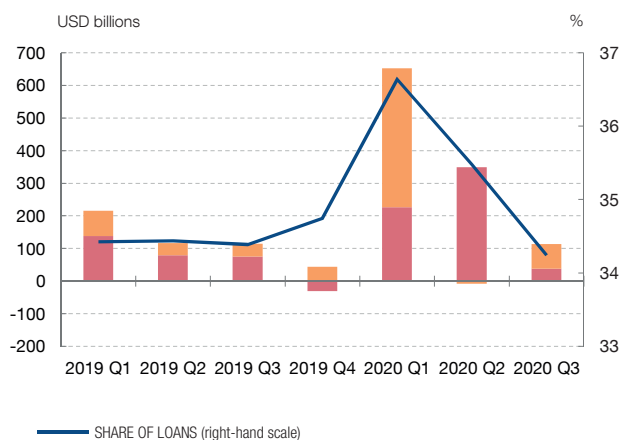
Chart 3

**CHANGES IN BOND FINANCE AND BANK DEBT OF THE NFC SECTOR IN THE EA AND THE US IN 2019-2020**

1 CHANGES IN LIABILITIES OF NON-FINANCIAL CORPORATIONS IN THE EA



2 CHANGES IN LIABILITIES OF NON-FINANCIAL CORPORATIONS IN THE US



SOURCES: Financial accounts, Fed Board and ECB.

measures can further reinforce bank supply of guaranteed loans. This is likely to be the case of the Eurosystem where the ECB has relaxed its collateral framework and decided to accept publicly guaranteed credit claims as collateral in its refinancing operations. Yet, similar measures were implemented in the US as part of the Paycheck Protection Program (PPP) (in the part of credit guarantees) and in the Paycheck Protection Program Liquidity Facility (in the part of liquidity provision against guaranteed credit).<sup>14</sup> Notwithstanding this similarity, public credit guarantees appear to be a prominent candidate for explaining the differences in corporate funding between the EA and the US due to the relatively larger guarantee programs in the former.<sup>15</sup>

Chart 3 illustrates the evolution of the NFC financial debt structure in the EA and the US in 2019-2020. In the EA, the NFC borrowers increased their bank credit by €194.3bn and €121.6bn in 2020Q1 and 2020Q2, respectively. While reliance on marketable finance decreased in 2020Q1 by €25.9bn, the net increase in securities funding in 2020Q2 was larger than the one of bank credit. As a result, in the EA, the share of bank loans in debt finance of NFC has decreased from 88% in 2019Q4 to 87% in 2020Q3 after having increased mildly in 2020Q1. This was accompanied by a relatively contained impact of the Covid-19 crisis on banks' credit standards, both in the first and the second quarters of 2020, as indicated by the ECB's euro area bank lending survey in July, 2020.

<sup>14</sup> Bank loans provided under PPP are 100%-guaranteed by US Small Business Administration (SBA, Department of the Treasury). The program explicitly allows for loan forgiveness in cases when borrowers meet eligibility criteria, in particular, requirements on maintaining personnel employed. In case of loan forgiveness, lenders get fully refunded by SBA. As of August 8, 2020, loans guaranteed by PPP amounted to \$525bn. (2.2% of country's GDP in 2019).

<sup>15</sup> See, for instance, Anderson, Papadia, and Véron (2021).



In the US, on the contrary, bank finance soared in 2020Q1 alongside with security funding. In spite of tightened credit standards,<sup>16</sup> the share of bank loans in debt finance of the US private corporates increased from 34.7% in 2019Q4 to 36.6% in 2020Q1 and decreased steadily afterwards to its pre-crisis level. Chodorow-Reich *et al.* (2020) document that, in the US, “the increase in bank credit in 2020Q1 and 2020Q2 came almost entirely from drawdowns by large firms on pre-committed lines of credit.” They also show that SME recipients of the PPP reduced their non-PPP bank borrowing by amounts comparable with PPP drawdowns. These facts, therefore, do not favor the hypothesis that, on aggregate, substitution of bank credit for bond finance was stronger in the EA, at least, in the aftermath of the Covid-19 outbreak.

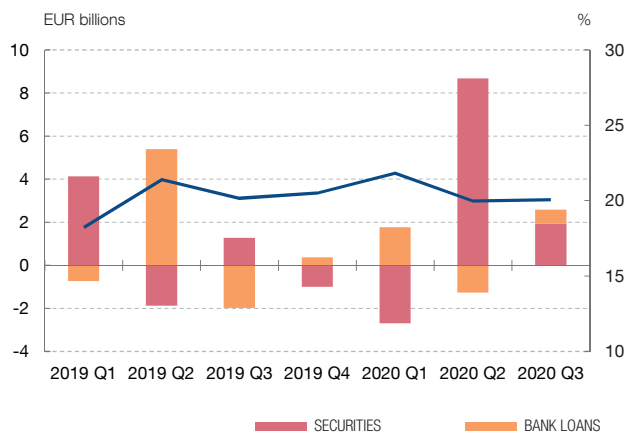
However, the aggregate dynamics discussed above may not be informative about relative shifts in funding structures of *riskier* firms. The country-level data that would allow to distinguish financing patterns of firms with different credit risk is not readily available. To address this issue, we construct series of bank credit and bond financing of Spanish IG and HY firms active in the bond market.

To estimate bank credit of non-financial Spanish bond issuers and their subsidiaries, we use quarterly financial statements (*Central de Balances Trimestral*) and Spanish credit registry (*Central de Información de Riesgos*) data. We match firms to their subsidiaries based on the information provided in their 2019 annual financial accounts. Since bond issuers tend to

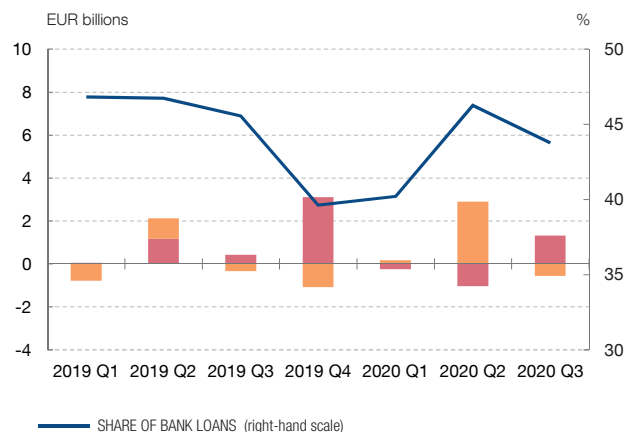
Chart 4

**CHANGES IN BOND FINANCE AND BANK DEBT OF THE NFC SECTOR IN SPAIN IN 2019-2020**

1 CHANGES IN LIABILITIES OF NON-FINANCIAL CORPORATIONS IN SPAIN, IG



2 CHANGES IN LIABILITIES OF NON-FINANCIAL CORPORATIONS IN SPAIN, HY



**SOURCE:** Own calculations. Bank loans are from quarterly financial statements of firms (*Central de Balances Trimestral*, CB) and Spanish credit registry (CIR). Bond debt values are from Dealogic. The sample contains bond issuers and their subsidiaries as listed in the CB. HY category includes non-rated issuers; credit ratings are as of end-October 2020.

<sup>16</sup> See Senior Loan Officer Opinion Survey on Bank Lending Practices by the Board of Governors of the FRS from July 2020.

be large firms able to attract bank finance worldwide, we prioritize financial statements as the primary source of information about bank debt and use the data from the credit registry only for those firms and subsidiaries that do not report to the *Central de Balances* on a quarterly basis. Finally, we estimate outstanding bond debt using issuance-level data from Dealogic.<sup>17</sup> To allocate firms to the two categories of credit risk, we use credit ratings of their parent companies from October 2020.

Chart 4 illustrates changes in the funding structure of Spanish bond issuers in 2019-2020. In 2020Q2, both groups of firms had increased their debt levels. However, while IG issuers did so by issuing new bonds, the riskier HY firms relied exclusively on bank credit. In fact, the face value of outstanding bond debt of HY firms decreased in the first two quarters of 2020, as the first issuance of HY bonds by any of the sampled firms after the start of the pandemic was registered only in September. As a result, relative to the beginning of the year, the share of bank credit in total debt of IG firms has broadly stayed unchanged. For HY issuers, on the contrary, the share of bank debt has increased by more than 6pp during the first two quarters of 2020. This evidence speaks in favor of the hypothesis of substitution of bank debt for bond finance by Spanish HY borrowers. Yet it leaves unexplained to what extent this substitution was due to better bank funding conditions provided by TLTRO and loan guarantees versus worse conditions in bond markets in the absence of HY bond purchases by the ECB.

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<sup>17</sup> The matched sample of bond issuers covers more than 90% of total bond debt in 2020Q2. The sample includes bond issuances by non-financial corporations with original maturity of more than 1.5 years. Bank credit from *Central de Información de Riesgos* excludes leasing, factoring, and undrawn credit lines.

## 4 Conclusion

The above analysis shows that a central bank acting as a buyer-of-last-resort in the market for corporate bonds can support prices and alleviate liquidity tensions. By announcing its willingness to use its balance sheet in times of economic emergency and purchase corporate bonds, the central bank can increase availability of market finance, even for riskier borrowers. This can be particularly relevant for borrowers with limited access to bank credit, or when the transmission of monetary policy via the bank channel is impaired.

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