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The effect and risks of ECB collateral framework changes

Christophe Blot, Jérôme Creel, Paul Hubert

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IN-DEPTH ANALYSIS

Requested by the ECON committee

European Parliament

The effects and risks of ECB collateral framework changes

Monetary Dialogue July 2018

Policy Department for Economic, Scientific and Quality of Life Policies
Authors: Christophe Blot and Paul Hubert
Directorate-General for Internal Policies
PE 619.019 – June 2018

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The effects and risks of ECB collateral framework changes

Monetary Dialogue July 2018

Abstract

During the crisis, the ECB modified its collateral framework to face increased liquidity needs of commercial banks. This has taken two forms: the minimum required rating for different classes of assets has been reduced and the haircut associated to these assets has evolved conditional on the default risks of these assets. The benefits in terms of cushioning a liquidity crisis and enhancing monetary policy transmission have most probably exceeded the costs in terms of riskier central bank balance sheet and potential capital losses.

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LIST OF ABBREVIATIONS

ABS	Asset-backed securities
ACC	Additional Credit Claims
ECB	European Central Bank
ELA	Emergency Liquidity Assistance
EONIA	Euro overnight interest rate average
LTRO	Long Term Refinancing Operations
MRO	Main Refinancing Operations
SME	Small and medium-sized enterprises

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EXECUTIVE SUMMARY

Background

- Any collateral framework induces a trade-off between the central bank role of lender of last resort and the risk held in the central bank balance sheet.
- The collateral framework is also essential to the transmission of monetary policy as it sets the rules for the refinancing operations of commercial banks.
- One specificity of the Eurosystem collateral framework, even in normal times, is to accept a large range of assets as collateral, including non-marketable ones. This is due to heterogeneity of banking systems across the euro area countries and because of the importance of banks in the transmission of monetary policy (compared to the US for instance).

Aim

- During the crisis, the ECB modified its collateral framework to face increased liquidity needs of commercial banks.
- This has taken two forms: the minimum required rating for different classes of assets has been reduced and the haircut associated to these assets has evolved conditional on the default risks of these assets.
- According to recent empirical evidence, this loosening of the collateral constraint has supported bank lending and reduced financing costs for firms for which credit claims were eligible.
- If ECB's counterparties default, accepting a larger set of assets as collateral puts the ECB balance sheet at risk. However, the adjustment of haircuts aims at mitigating this risk.
- In addition, central banks do not face liquidity crisis like commercial banks as they issue the legal tender and may continue their activity even if they have negative equity.
- The benefits in terms of cushioning a liquidity crisis and enhancing monetary policy transmission have most probably exceeded the costs in terms of riskier central bank balance sheet and potential capital losses.

1. INTRODUCTION

KEY FINDINGS

During the crisis, the ECB modified its collateral framework to face increased liquidity needs of commercial banks. This has taken two forms: the minimum required rating for different classes of assets has been reduced and the haircut associated to these assets has evolved conditional on the default risks of these assets.

If ECB's counterparties default, accepting a larger set of assets as collateral put the ECB balance sheet at risk. However, the adjustment of haircuts aims at mitigating this risk. In addition, central banks do not face liquidity crisis like commercial banks as they issue the legal tender and may continue their activity even if they have negative equity.

The benefits in terms of cushioning a liquidity crisis and enhancing monetary policy transmission have most probably exceeded the costs in terms of riskier central bank balance sheet and potential capital losses.

The implementation of monetary policy involves liquidity operations by which the Eurosystem provides refinancing to eligible counterparties against eligible collateral; which are assets pledged to protect its balance sheet against the risk of default of the borrower (counterparty risk). The collateral is accepted at market prices subject to a haircut. Until the crisis, the issue of collateral was mainly technical and did not really matter for the monetary policy stance. The amount of liquidity provided by the Eurosystem was set to bring the EONIA (Euro overnight interest rate average) rate close to the target rate. The policy rate signalled the stance of monetary policy and liquidity operations were geared at restricting fluctuations of the EONIA around the target rate.

The financial crisis has made those issues crucial since the separation principle, according to which monetary and liquidity management policies are distinct, could no longer hold (Bordes and Clerc, 2012). Indeed, the European Central Bank implemented various non-standard policies following the financial crisis ranging from extended liquidity provisions and asset purchases to forward guidance. Liquidity operations have not only contributed to address banks' fragilities – the standard lender of last resort operations – but they have also improved monetary policy channels of transmission by allowing commercial banks to use a larger set of corporate loans and lower-rated assets as guarantees when they borrow from the Eurosystem. While collaterals address issues of asymmetric information and moral hazard, their supply is not deprived of those issues. For this reason, higher haircuts were applied to insure the central bank against liquidity risk and a potentially larger variance of lower-rated asset prices.

The central bank sets a collateral framework defining the set of eligible assets and their associated haircuts. When financial stress and information asymmetry between banks are high, the liquidity of the interbank market is low, so short-term funding may be sharply reduced in the banking system. To mitigate or avoid a liquidity freeze and the subsequent credit crunch, the central bank usually acts as a lender of last resort, lending central bank reserves (the monetary base or high-powered money) to banks against guarantees, referred to as collateral. However, when financial stress is high, the value of eligible assets (the collateral) may decline because of lower valuations and rating downgrades. The adaptation of the ECB's collateral framework was therefore necessary to provide liquidity to

commercial banks. Besides, the amount of eligible collateral had become the only limit for access funding after the ECB decided to conduct its liquidity operations at fixed-rate and full allotment. All demand from commercial banks were satisfied insofar as they were able to present enough collateral to be pledged against refinancing.

During the crisis, the ECB decided to accept a wider set of assets as collateral through the Additional Credit Claims (ACC) programme in December 2011, after the introduction of the "long-term refinancing operations" (LTROs) of three year maturities. The measure aimed to ensure that commercial banks had enough collateral to borrow at this maturity. Besides, Emergency Liquidity Assistance (ELA) has been provided by national central banks with the approval of the ECB against collateral that does not meet the ECB's collateral standard. This raises the question of potential losses. The decision to lend against riskier collateral or to weaker counterparties may have increased the risk borne by the national central bank.

Based on the trade-off induced by the collateral framework, this policy brief deals with two issues. It assesses the extent to which collateral policy actually complemented other decisions to ease the stance of monetary policy and it discusses whether additional risks that have been taken by central banks put a strain on their solvency.

2. THE NEW ECB'S COLLATERAL FRAMEWORK

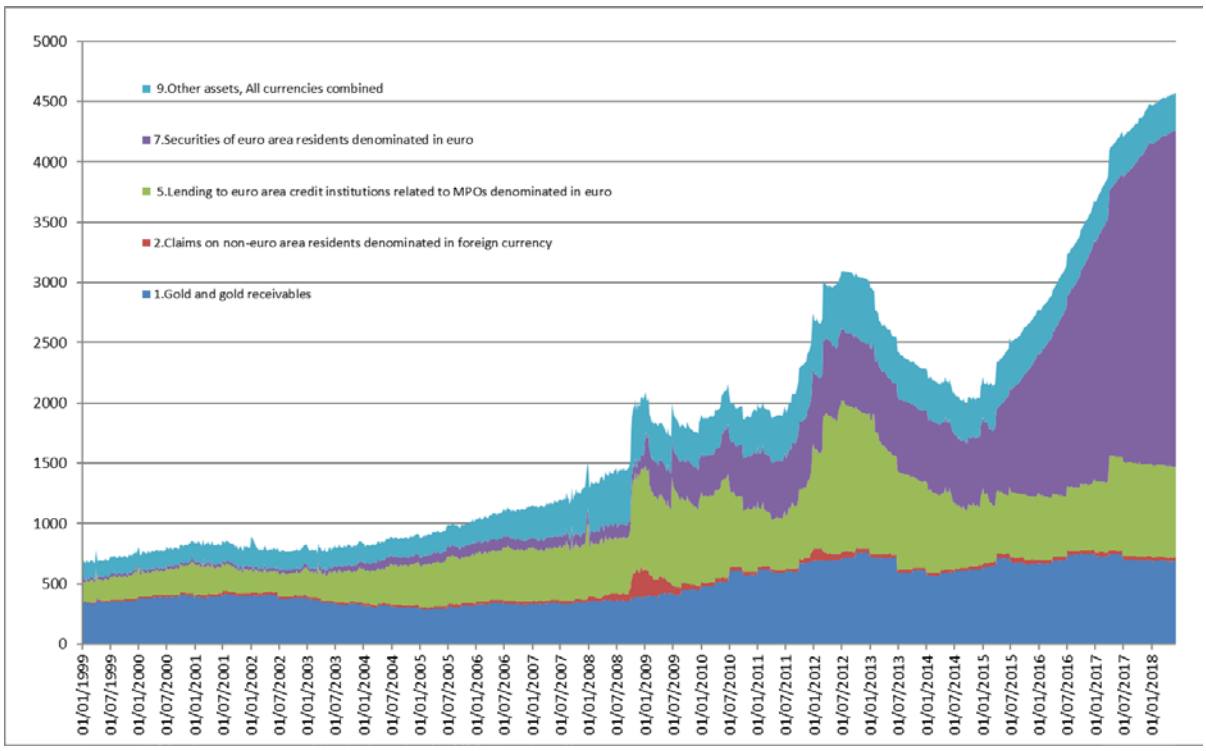
Before the crisis, the ECB monetary policy was mainly running through the lending of central bank money (reserves) to commercial banks at fixed maturities – one week for the Main Refinancing Operations (MRO) and three months for the Long-term Refinancing Operations (LTRO) – and at a variable interest rate against collateral. During the crisis, the ECB extended the maturity of these liquidity provisions and satisfied all liquidity needs at fixed rate in order to deal with the liquidity squeeze in the wholesale market. The main component responsible for the increase in the size of the ECB balance sheet until March 2015 was these liquidity operations – called "Lending to euro area credit institutions related to monetary policy operations denominated in euro" in the Eurosystem's balance sheet – for which collateral is needed (see Figure 1). Open market operations are the key operational framework to implement monetary policy in the euro area. Lending to credit institutions requires adequate collateral (assets pledged as security) to protect the central bank's balance sheet against the risk of default by the borrower (credit risk or counterparty risk). The ECB counterpart is the commercial bank that receives liquidity. The bank is required to reimburse the liquidity after a given period, at which point it will recover its collateral. When the commercial bank is unable to repay the loan, the ECB uses this collateral to prevent a loss.

The definition of eligible collateral matters for commercial banks as it limits the amount of refinancing they can get from the Eurosystem. The ECB introduced a list of eligible collateral in January 2007. Its principal aim is to protect the balance sheet of the ECB, its shareholders – generally national government – and ultimately taxpayers against excessive risks. The aim of the collateral framework is to define which assets can provide an adequate protection against losses to the ECB and national central banks, and in the meantime enough eligible collateral so that commercial banks can access central bank liquidity programme.[1] Adequate access to ECB liquidity plays a central role for commercial banks. Even in normal times, they often need access to central bank liquidity for their daily operations. It becomes even more crucial in crisis period when the interbank market is freezing as commercial banks refuse to lend to each other.[2] The reserves supplied by the central bank are therefore the only source of funding. The amount of available collateral limits the quantity of reserves that can be borrowed.

[1] The framework is defined in the ECB document 'The implementation of monetary policy in the euro area: General documentation on Eurosystem monetary policy instruments and procedures' and subsequent updates (https://www.ecb.europa.eu/ecb/legal/pdf/gendoc201102en.pdf).

[2] Operations on the interbank market are generally not guaranteed by a collateral.

Figure 1: Composition of the Eurosystem balance sheet (Assets)



Source: ECB.

Table 1 presents the different collateral frameworks of selected central banks. The ECB accepts a large range of assets at a lower quality range compared to the other central banks. It comprises market-traded assets, which are listed in the eligible asset database updated by the ECB on a daily basis. This category notably includes euro area government bonds. One specificity shared by the ECB and the Bank of Japan is to accept non-marketable assets, such as bank loans (credit loans) to firms, as collateral. Credit claims represent a large share of the collateral accepted by the Eurosystem. Between 2007 and 2011, the share of non-marketable assets over total collateral went from 3% to 23% (see Bignon et al., 2016). In contrast, the Federal Reserve provides liquidity to the US banking system only against government bonds and bonds of public sector institutions. However, the euro area banking system is bigger than the US one, and it is also more heterogeneous.

The main two criteria for a collateral framework are the definition of the type of assets that are acceptable as collateral, the minimum rating of the asset and the haircut applied to the market value of the asset. Liquidity is provided conditional on the market value of the collateral, but lower rated collaterals are associated to a bigger haircut to compensate for higher default risks and/or higher risks of changes in valuation. For instance, sovereign debt rated AAA with a maturity of 3 years would only be subject to a haircut of 2% whereas sovereign debt rated around BBB would be subject to a haircut of 10%.

Prior to the crisis, the ECB's collateral framework was criticised for reducing liquidity risk premia and thereby contributing to the insufficient differentiation of sovereign risk. Buiter and Sibert (2005) suggested that the similar collateral treatment of Eurosystem's sovereign debt was responsible for the low spreads in the euro area sovereign yields. More specifically, they criticised the fact that all sovereign debts were accepted with the same haircut despite the differences between sovereign yield ratings.

Table 1: Assets eligible as collateral by selected central banks

		Eurosystem	Bank of England (collateral set for wider open market operations)
Type of issuer/debtor	*Central government*	√	√
	Government agency	√	√
	Regional and local government	√	-
	Corporate	√	√
	Bank	√ Excluding own use	√ For uncovered bank bonds, a government guarantee is required
	Supranational	√	√
	Asset-backed securities	√ Only if there is a true sale of assets and a special purpose vehicle (SPV) is bankruptcy remote from originator	√ Only if there is a true sale of assets and a special purpose vehicle (SPV) is bankruptcy remote from originator
Issuer residence	*Domestic*	√	√
	Foreign	√ Issuer[1]: EEA or non-EEA G10 countries. Debtor: EEA; Guarantor[2]: EEA	√ AT, AU, BE, CA, CH, DE, DK, ES, FI, FR, IR, IT, JP, LU, NE, NO, NZ, PT, SE, SI and US
Seniority	*Senior*	√	√
	Subordinated	-	-
Credit standards	*Minimum credit threshold for issuer or asset (ratings often used for reference only)*	Minimum BBB-. ABS under standard framework require AAA/Aaa rating at issuance and single A- rating during the life of the security[3]	Accepted, specified sovereign debt and highest credit quality for accepted ABS types (broadly equivalent to AAA)
Settlement	*Domestic*	√	√
	Foreign	-	√
Currency	*Domestic*	√	√
	Foreign	Not accepted under standard framework[5]	√ EUR, USD, CAD, AUD, SEK CHF, JPY, DKK NZD, and NKK

1) Corporate bonds without credit ratings must be issued in the euro area.
2) See previous footnote.
3) For eligibility criteria under temporary framework, please see Guideline ECB/2013/4.
4) According to the collateral policy which was implemented on 15 April 2013, there will be a limit on the share of collateral with creditworthiness corresponding to a rating of less than AA-. This limit is being phased in, starting on 1 January 2014.
5) For eligibility criteria under the temporary framework, please see Guideline ECB/2013/4.

Swiss National Bank	Sveriges Riksbank	Federal Reserve System (temporary open market operations)	Bank of Japan
√	√	√	√
√	√	√	√
√	√		√
√	√		√
√ Securities issued by domestic banks and their subsidiaries abroad are not eligible	√ For uncovered bank bonds, a central or local government guarantee is required		
√	√		√
-			√ Only if there is a true sale of assets and a special purpose vehicle (SPV) is bankruptcy remote from originator
√	√	√	√
√ For securities denominated in foreign currencies: CH, EU or EEA	√ EEA, JP, CA and US	√ Confined to sovereign issuers.	√ Only central government debt of the UK, US, DE or FR
√	√	√	√
√			
Minimum single A for securities denominated in CHF, AA for securities denominated in foreign currencies	Minimum A-[4)]	Not applicable	Minimum single A, foreign government bonds require AA and ABS, AAA (use as indicator only)
√	√	√	√
	√		√
√	√	√	√
√ EUR, USD, GBP, DKK, SEK, and NOK	√ DKK, EUR, GBP, JPY, NOK, SEK and USD	√	√ USD , EUR and GBP for government debts

Source: European Central Bank (2013) Collateral eligibility requirements: a comparative study across specific frameworks, July.

During the recent financial crisis and after the ECB changed all three criteria of its collateral framework, the role of the collateral system has also been criticized for allowing the financing of capital withdrawals from periphery countries to core countries. However, without this reduction in the minimum required standards, commercial banks in a number of countries would have been without access to the ECB liquidity window. Ultimately, the decision to stop granting liquidity to commercial banks in a country of the monetary union is outside the scope of monetary policy. Therefore, the question today is whether this change in the collateral framework on one side helped commercial banks to access funds and to avoid a credit crunch, and on the other side, induced the ECB to take excessive risks in its balance sheet.

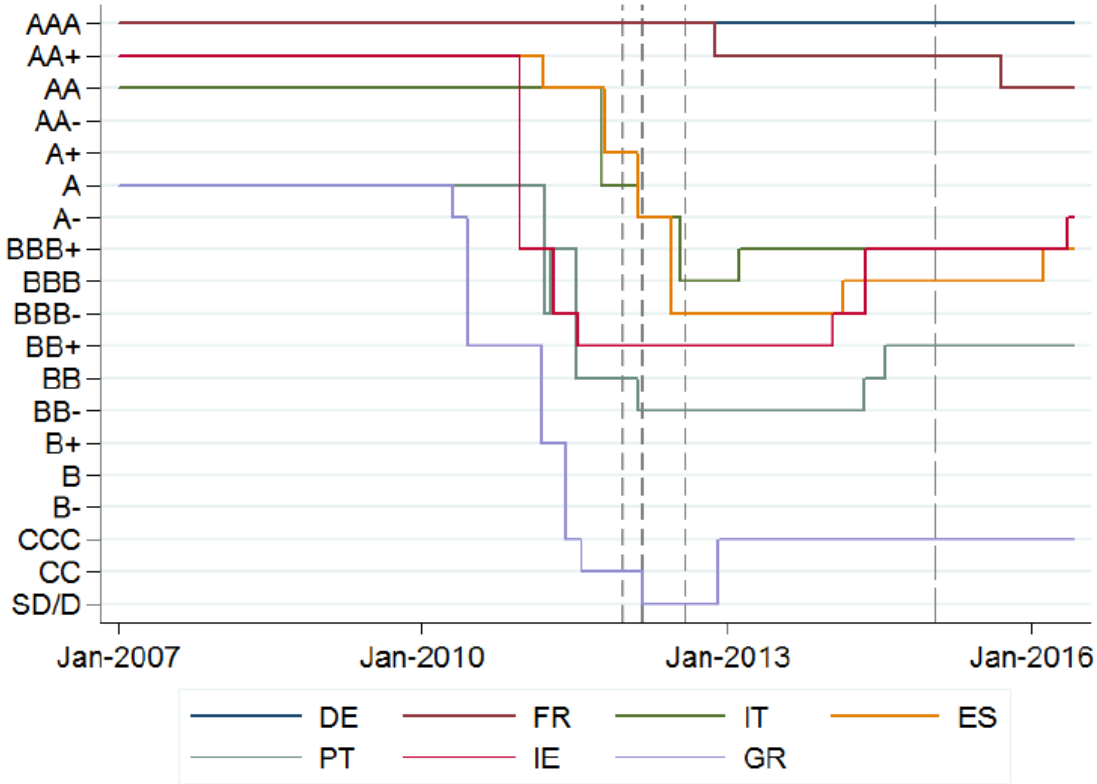
The changes in the ECB collateral policy were necessary to fulfil its treaty-based mandate of providing liquidity to solvent banks and safeguarding financial stability. Because the collateral framework gives access to central bank liquidity, it plays an important role in the setting and in the channels of transmission of monetary policy. The ECB modified its rating standards together with the haircuts applied to the different collateral assets. Because the highest rated assets were scarcer, the ECB reduced the minimum required rating. In order to match the higher risks borne by the ECB, it also increased the

haircut for this newly eligible collateral. Below is a list of more detailed changes in the ECB's collateral framework:

1. Before the crisis: credit rating threshold at A– for all eligible collateral (except ABS for which the credit rating threshold is at AAA).
2. 15 October 2008: credit rating threshold of all eligible collateral (except ABS) lowered to BBB– "temporarily" (ECB/2008/13).
3. 8 April 2008: the previous measure is made permanent (ECB/2011/14).
4. 8 December 2011: credit rating threshold of ABS based on residential mortgages only or loans to SMEs only decreased to A– (ECB/2011/25). Often referred as to the Additional Credit Claims (ACC) framework.
5. 20 June 2012: credit rating threshold of ABS based on auto loans, leasing, commercial mortgages, consumer finance, residential mortgages and loans to SMEs decreased to BBB–
6. 9 July 2014: credit threshold of ABS based on auto loans, leasing, commercial mortgages, consumer finance, residential mortgages, loans to SMEs or credit card receivables reduced to BBB– (ECB/2014/31).

Most assets are now accepted as adequate collateral when their credit rating is above BBB– corresponding to the investment grade. This change was essential for the ECB to keep on accepting sovereign bonds issued by most euro area countries that had suffered from ratings downgrades (figure 2). During that time, the ECB also changed the haircut applied to the different types of collateral. First, the haircuts for high-rated bank bonds and ABS were increased to 12.5 % and 16 % respectively in September 2010 (for a residual maturity of 5-7 years). At the same date, the haircut for low-rated bank bonds (BBB+ to BBB–) reached 37%. Depending on the rating applied to these assets, the haircut applied to bank bonds and ABS also changed during the course of the financial crisis. Second, for government bonds, the haircut was modified only slightly. Before the crisis only high-rated government debt (A- at minimum) were accepted as collateral with a haircut of 3% (for a residual maturity of 5-7 years). Lower-rated government bonds became eligible on October 2008 with a haircut of 8%. In September 2013, these haircuts were changed to 2% and 10% respectively for high-rated and lower-rated government bonds. However, Greek government bonds became eligible even below the BBB- minimum rating subject to a special haircut in December 2012.

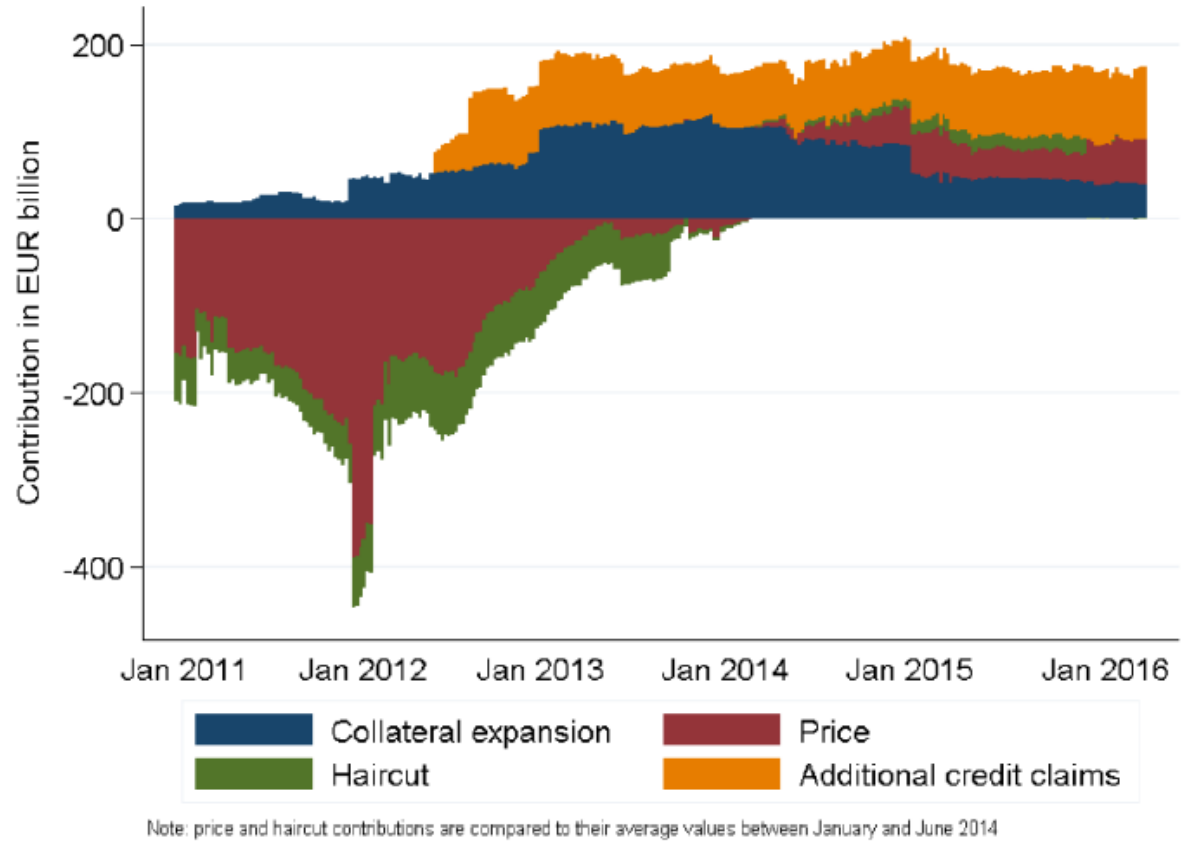
Figure 2: Ratings for sovereign bond yields at 10-year maturity



Source: Barthélemy, Bignon and Nguyen (2018). Note: The vertical lines show (1) the first three-year LTRO of 21 December 2011, (2) the second three-year LTRO of 28 February 2012, (3) the announcement of the OMT programme on 2 August 2012, (4) the decision to launch the PSPP on 22 January 2015.

Not only does the list of eligible assets matter but also the value of the collateral that may be used. This value indeed changes according to the haircut set by the ECB but also with the value of assets. In 2011, the eligible collateral amounted to €14 trillion, the largest part of it being central government bonds. During the sovereign debt crisis in 2011/2012, the price of sovereign bonds – mainly Italian, Spanish, Portuguese, Irish and Greek bonds – have sharply decreased leading to huge losses in the value of collateral (figure 3). The implementation of the ACC programme has then enabled to enlarge the list of assets, which improved the value of disposable collateral. Besides, the allocation of ECB liquidity changed substantially during the crisis to go to the banking systems of weaker countries. The share of the liquidity provided to banks in Italy, Spain, Portugal, Greece and Ireland represents 80% of the total liquidity provided by the ECB. In these countries, because the credit rating of assets held by commercial banks dropped significantly, the ECB was not able to provide as much liquidity to the banking system as needed. The Emergency Liquidity Assistance (ELA) was therefore put in place. National central banks are then able to provide liquidity to banks resident in the country against lower quality collateral after the approval of the ECB governing council.

Figure 3: Variation in the value of euro area collateral



Source: Barthélemy, Bignon and Nguyen (2018).

3. THE EFFECTS OF COLLATERAL CHANGES

Commercial banks that decide to supply credit (or expand their assets) do not need resources ex-ante but have to adjust assets and liabilities ex-post. Consequently, the day-to-day business may generate situation of liquidity shortages or excess liquidity. Usually, these imbalances are settled on the interbank market where banks with excess liquidity lend to banks with liquidity needs for short period without guarantees. During the crisis, the interbank market froze because of a generalized loss of confidence. Banks with excess liquidity became reluctant to lend and preferred to deposit these liquidities at the ECB, hence constraining banks with liquidity shortage to also turn to the Eurosystem to ask for refinancing. However, operations with the Eurosystem needs to be collateralized. The amount of refinancing was henceforth crucially determined by the value of assets that could be pledged as collateral. This was even the only limit when the ECB decided to allocate liquidity at fixed rate with full allotment. The credit supply of banks could therefore become constrained.

Cahn, Duquerroy and Mullins (2017) and Mésonnier, O'Donnell and Toutain (2017) conducted two recent studies in order to investigate the impact of the ACC programme on bank credit supply to French firms. The first study measures the effects of the ACC on lending to independent SMEs and highlights the importance of the bank-firm relationship in the transmission. The second study quantifies the impact of the measure on the interest rate of loans offered to newly eligible firms and shows that the transmission is stronger for banks that pledge higher shares of corporate loans as part of their collateral. Overall, these studies are supportive of an active collateral channel of monetary policy transmission which allows the central bank to affect banks' funding costs independently of its decision to change its policy rate.

Looking first at quantities lent to small and medium-size standalone firms, Cahn, Duquerroy and Mullins (2017) find evidence that collateral policy measures can be an effective tool to support bank lending to SMEs and reduce contagion during times of financial distress (figure 4). The main hypothesis is that the ACC programme, by targeting the loans of specific firms, acts to reduce banks' marginal costs in funding these loans. Banks should then adjust their corporate lending portfolio in favour of these newly eligible firms, thereby improving the financial outcomes of these firms.

The main result is that newly eligible, standalone SMEs experienced an 8% increase in borrowed credit, relative to non-eligible, but otherwise similar SMEs, in the year following the policy. These firms also experienced lower likelihoods of payment defaults to suppliers (-1.5% of the amount of payables) and credit rating downgrades relative to those who did not. Interestingly, this effect is strongly driven by firms with single bank relationships. There is also suggestive evidence that during 2011, single-bank firms were substantially more credit constrained than firms with multi-bank relationships.

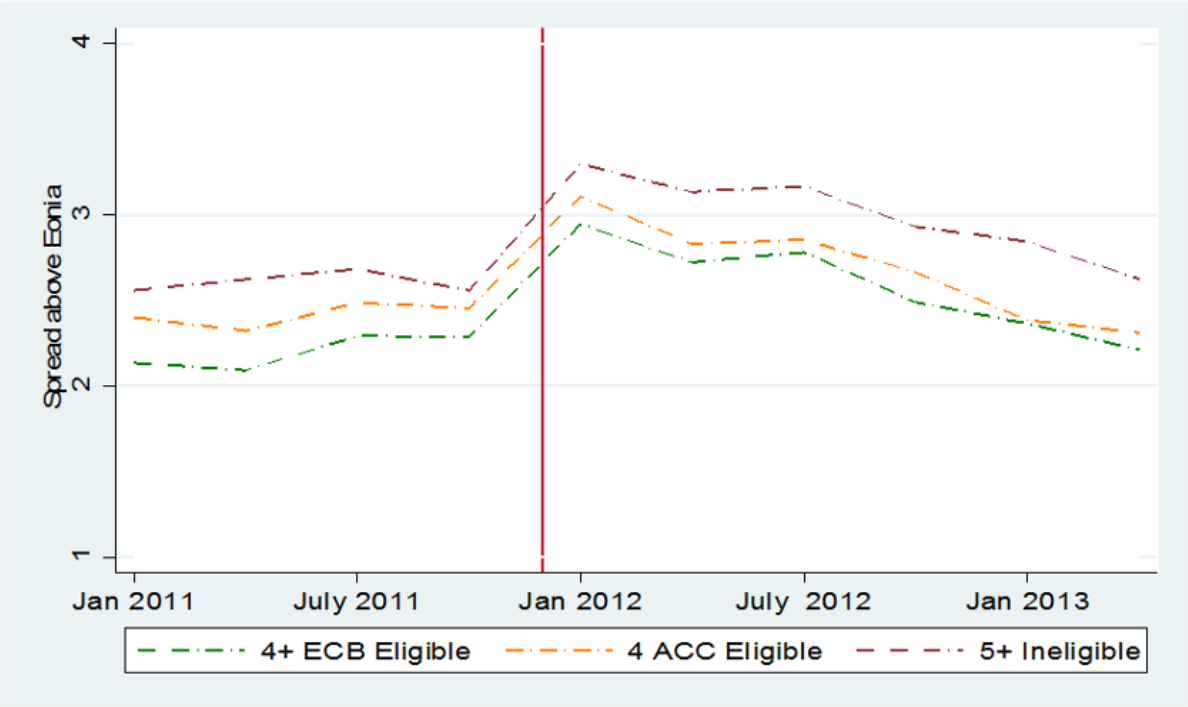
Figure 4: Credit dynamics for newly eligible firms

Source: Cahn, Duquerroy and Mullins (2017). Note: This chart plots the average growth rate in credit for firms that became eligible in February 2012 against ineligible firms rated one notch lower. The sample consists of independent, single-bank French SMEs.

The results also reveal the transmission of the programme based on firm balance sheet characteristics. The effect is driven by single-bank firms with stronger lending relationships, and stronger observable characteristics, such as low leverage and high levels of tangible assets.

Mésonnier, O'Donnell and Toutain (2017) show that collateral eligibility may also impact banks' loan supply due to their demand for pledgeable collateral (see figure 5). As a consequence, the loans of eligible firms may benefit from a relative reduction in their interest rates, an effect dubbed by the authors the "eligibility discount". The authors find robust evidence of an eligibility discount for newly eligible, medium-quality firms. On average the relative loan spread offered to these firms decreased by 7 basis points due to the programme relative to slightly higher quality eligible firms. Although they argue that it may look small in absolute terms, this reduction amounts to one third of the ex-ante average difference in interest rates between newly eligible firms and similar firms just one credit-notch above. Furthermore, the authors find that this eligibility discount is associated with a relative increase in the quantity of credit lent to firms affected by the programme. The combination of both a lower interest rate and an increase in the quantity lent is indicative that the ACC programme succeeded in supporting bank credit supply.

Figure 5: Impact of the ACC programme on interest rates to newly eligible firms



Source: Mésonnier, O'Donnell and Toutain (2017). Note: This chart plots the average spreads for firms which are eligible (4) for the ACC programme compared to firms already eligible (4+) and firms which are never eligible (5+).

Next, the authors examine how the effect of the programme differs across banks. There are several reasons why banks may react differently to the programme. Firstly, banks may have different liquidity or collateral needs, therefore banks which are more constrained ought to benefit more from the programme. Secondly, some banks may find it more advantageous to pledge credit claims as collateral rather than marketable assets. This may reflect differences in business models or informational advantages in issuing loans. The authors find that the average eligibility discount is mainly driven by the response of the banks which, prior to the programme, pledged higher shares of credit claims as part of their collateral with the Eurosystem. By contrast, no effect is found that results from banks' ex-ante capitalisation, or from the collateral-strain potentially induced by their LTRO-uptakes. This suggests that it is the banks that faced the lowest opportunity cost in pledging credit claims which benefited the most from the programme.

Together, these studies show that an extension of eligible collateral to the loans of firms, most of which are SMEs, enhances the monetary policy transmission channel by allowing these firms to borrow more and at cheaper rates. However, collateral policy not only affects the assets which become eligible, but also the counterparties which hold these assets. Therefore, an active collateral policy can be an effective alternative tool for reducing banks funding costs, especially at times when conventional monetary policy hits its zero-lower bound.

This effect of collateral policy on credit supply is all the more important in the euro area where banking credit represents the bulk of firms' funding, notably for SMEs. As highlighted above, the measures taken during the crisis have improved funding liquidity, the liquidity of the liability side of commercial banks' balance sheet, making expansionary policy powerful. Yet, collateral policy may have also improved the liquidity of assets held by commercial banks. By allowing a large set of assets to be used as collateral in

liquidity operations, the ECB has made those assets more liquid since banks had the ability to trade them. This may have supported the asset price enhancing the monetary policy transmission.

Changes in haircuts may also have some impact on collateral values of the assets. Corradin and Rodriguez-Moreno (2016) notably show that increases in haircuts applied by the Eurosystem significantly decrease the price of eligible public bonds, whereas decreases in haircuts have no conclusive impact. The increase in haircuts might thus mitigate the impact of the extension of collaterals on asset prices.

4. THE RISKS ASSOCIATED TO COLLATERAL CHANGES

Central banks are public institutions which may be seen as independent public agencies. They have been assigned objectives and are held accountable for their decisions. As members of decision-making body of central banks are non-elected personalities, they are not allowed to take fiscal decisions. Net earnings are transferred to their own government and losses should be backed by their government. To avoid losses and cost for the taxpayer, central banks generally endeavor to take minimum risks in the conduct of their operations related to the implementation of monetary policy. It explains why they protect themselves against the credit risk – if a counterparty bank is unable to repay the loans – by requiring appropriate collateral. Thus, if the counterparty fails, the central bank will recover the value of its loan by selling the collateral. As the value of this collateral is adjusted by a haircut, the total amount of collateral pledged at the central bank should exactly match the value of the loan. Yet, there may be differences ex-post and the counterparty risk becomes a market risk but it is still supposed to be minimized.

During the crisis, the Eurosystem has allowed riskier assets to be used as collateral. At several occasions, it has reduced the minimum of the credit rating threshold. This may have encouraged struggling banks to borrow against poor quality collateral (Drechsler et al., 2016) and Nyborg (2015)[3]. Consequently, the balance sheet of the Eurosystem may have become riskier. However, Bindseil et al. (2017) shows that these claims are exaggerated. Besides, central banks do not operate like commercial banks and do not face the same risk of bank run. Bank runs occur when agents fear insolvency or if they believe that other agents fear a risk of insolvency. Banks are then prone to self-fulling crisis as explained by Diamond & Dybvig (1983). As their assets are illiquid, they cannot satisfy all deposit withdrawals and can be forced to bankruptcy. Such a run occurred in the wholesale market in 2008 after the Lehman Brother collapse. The interbank market froze indicating that banks were suddenly unable to borrow from other banks. No other bank was willing to refinance the liabilities of commercial banks. The situation of central banks is quite different. Though they may incur losses and become insolvent – have a negative equity –, they will not face the same risk of a run. Central banks supply a public good (banknotes and reserves) over which they have a monopoly power. Commercial banks need to hold a current account in the central bank and all clearing operations in the banking system are realized with those reserves. Central banks also issue banknotes having a legal tender so that a payment realized with banknotes cannot be refused. Even if the central bank incurs losses and if it is recognized that central bank is insolvent, there is no bankruptcy procedure (Reis, 2016) and it can still continue to issue reserves and banknotes. A confidence crisis will not trigger a run. The first consequence of it is that potential losses reduce the revenues distributed to the government. Finally, Corradin, Heider and Hoerova (2017) argue that collateral policies have their own weaknesses: the markets they are securing via the supply of high-quality collateral may be prone to amplification and contagion effects via changes in the price of the collaterals, more importantly when they are scarce or illiquid. The extension of collaterals by the ECB has exactly limited these two risks and made the set of collaterals more abundant and liquid.

Consequently, the risk taken by the Eurosystem related to the collateral policy should not be overestimated. First, it would materialize into losses if a counterparty – a commercial bank – did not repay its loans and if the value of collateral suddenly and sharply collapsed to a value below the amount of the loan. Losses would then be shared among national central banks according to the key for subscription to the ECB's capital. Finally national central banks could be recapitalized by their own

[3] There were also examples of market participants issuing their own assets to be used as collateral in Eurosystem liquidity operations (Corradin et al., 2017). As of March 2015 though, the Eurosystem has phased-out the possibility of obtaining a government guarantee on banks' own-name assets.

governments. Otherwise, they could still issue money. Consequently, the potential risk of collateral policy most probably does not exceed the benefits in terms of monetary policy transmission. Does it mean that central banks can indefinitely operate with negative equity and that the insolvency risk does not matter for monetary policy? Even if there is no formal bankruptcy for central banks, they may become insolvent in an economic sense. Insolvency will not lead to a standard run but agents will try to get rid of domestic currency as soon of possible. The consequences would be a decrease in the real value of the monetary base, hence an increase of inflation (see Buiter, 2008). Under current circumstances and keeping in mind the mandate of the ECB, the inflation risk is limited.

5. CONCLUSION

This policy brief has dealt with the effect of the collateral policy implemented by the ECB. From the early stage of EMU, the ECB decided to accept a large set of assets as collateral in liquidity operations. This decision mainly stems from the characteristics of the European financial system, which is more bank-oriented. Banks have been severely hit by the financial crises in the euro area triggering a liquidity squeeze. Banks were unable to access funding in the interbank market and have then turned to the ECB. While collateral is generally not needed between commercial banks, it is required for refinancing operations with the ECB. Collateral policy has therefore become a crucial issue.

During the crisis, the ECB introduced several changes in its collateral framework. It has notably reduced the minimum required rating for several class of assets. The aim was to make sure that commercial banks suffering liquidity shortages could still access enough central bank liquidity. While the Eurosystem has taken over more risk, these decisions also contributed to enhance the accommodation of monetary policy. Recent studies have highlighted the positive effect of collateral policy on lending. The large set of assets accepted for collateral may have also supported liquidity on the financial market and thus some asset prices. Yet, this may have made the balance sheet of the Eurosystem riskier as loans have been granted to weaker counterparties against weaker collateral. However, those risks should be over-estimated. First, for losses to be effective, not only should the counterparty fail but, the ECB should be unable to recover the funds in the market. The counterparty and the market risk need to materialize at the same time. Moreover, central banks do not run the same business as commercial banks. There is no insolvency procedure for central banks and they are not prone to runs as they issue the legal tender and may continue their activity even if they have negative equity. The main risk in case of losses would be that central banks expand their balance sheet so massively that it would raise inflation in the future. The probability of such a possibility is very low.

The benefits in terms of cushioning a liquidity crisis and enhancing monetary policy transmission has most probably exceeded the costs in terms of riskier central bank balance sheet and potential capital losses.

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Questions:

- Does the Governing Council intend to tighten its collateral framework when it ends its quantitative easing policy in December 2018?
- Since the collateral framework affects demand and prices for eligible assets, does the Governing Council intend to add this policy to the standard toolkit of monetary policymakers?

During the crisis, the ECB modified its collateral framework to face increased liquidity needs of commercial banks. This has taken two forms: the minimum required rating for different classes of assets has been reduced and the haircut associated to these assets has evolved conditional on the default risks of these assets. The benefits in terms of cushioning a liquidity crisis and enhancing monetary policy transmission have most probably exceeded the costs in terms of riskier central bank balance sheet and potential capital losses.

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