EUROPEAN CENTRAL BANK

EUROSYSTEM

COLLATERAL ELIGIBILITY REQUIREMENTS

A COMPARATIVE STUDY ACROSS SPECIFIC FRAMEWORKS

JULY 2013

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EXECUTIVE SUMMARY

The regulatory reforms triggered by the current crisis have, among other things, resulted in an increase in demand for collateral. Against this background, the ECB contact group on euro securities infrastructures (COGESI), initiated an analysis of collateral eligibility requirements across various frameworks in order to better understand the respective requirements. This work complements other streams of work conducted in this field that focus more on the scarcity of collateral (e.g. the Committee on the Global Financial System (CGFS) recently published a report which examined how greater use of collateral and asset encumbrance may impact on the functioning of the financial system).

This report aims at increasing transparency, as well as the understanding of the different collateral requirements faced by the financial industry. In particular, the report presents the status quo for existing collateral eligibility rules under selected "frameworks", i.e. (i) the collateral policy frameworks of central banks, (ii) EU and global regulatory frameworks and (iii) the practices of EU central counterparties (CCPs).

After an overview of the different requirements in the selected frameworks, the report highlights the similarities and differences across the frameworks concerned and considers whether there are any particular implications of the differences identified that merit further consideration by policy-makers and/or market participants.

MAIN RESULT OF THE FACT-FINDING WORK

The analysis shows that central bank collateral frameworks generally have the broadest eligibility criteria, which is attributed to their statutory requirements (e.g. the requirement to accept adequate collateral or certain types of assets), as well as to environmental factors (such as the depth of the local capital market and government bond market, which may influence the type of collateral accepted).

Under the regulatory prudential frameworks – including requirements under the European Market Infrastructure Regulation (EMIR) in the EU and the Dodd-Frank Act (DFA) in the United States, as well as the Committee on Payment and Settlement Systems and International Organization of Securities Commissions (CPSS-IOSCO) principles for financial market infrastructures (PFMIs) and Basel III at global level – more restricted types of assets are deemed eligible, in particular following the additional prudential concerns identified in recent years.

Finally, CCP frameworks are the narrowest of the frameworks considered as regards acceptable margin collateral. Given the role of CCPs in centralising counterparty risk management, this narrower approach for margin collateral is both understandable and desirable. However, CCPs typically take a wider approach for underlying collateral in general collateral trading/funding services (e.g. Eurex GC Pooling and LCH.Clearnet SA €GCPlus), in which the eligibility requirements are aligned to the eligible collateral set of central banks.

More specifically, the main similarities and differences identified across the frameworks are the following:

- Concerning the *type of assets accepted as collateral*, almost all frameworks accept debt securities issued by central governments/central banks and cash, with covered bonds also being accepted in many frameworks. Other marketable assets – such as debt securities issued by credit institutions, as well as corporate bonds and asset-backed securities – are accepted mainly in central bank frameworks, while equities, bank guarantees and gold are generally only eligible within some regulatory frameworks and only to a certain extent, as well as for the margin collateral of some CCPs and for non-centrally cleared over-the-counter (OTC) derivatives.

With regard to non-marketable assets, only some central banks accept these assets within their collateral framework.

- Acceptance of *collateral denominated in foreign currency* varies. These assets are accepted by all central bank frameworks considered (although in certain cases, they are only accepted on a very limited and temporary basis) and for the margin collateral of CCPs. Regulatory frameworks take restrictive approaches to accepting assets denominated in foreign currencies, only allowing the use of such assets for CCPs if the respective CCP is able to manage the risk related to the currency and the collateral is limited to the currency in which the CCP clears contracts. In general, only major or regionally linked currencies are accepted.

- Collateral assets generally need to meet *additional requirements* such as a minimum credit rating and/or guarantees from central government. Moreover, valuation haircuts may be applied. Distinctive similarities and differences can be found in the following requirements. First, minimum credit standards are broadly established by many central banks and CCP frameworks, although reliance on external ratings is diminishing. In general, the range of credit standards accepted differs across frameworks. Second, minimum haircuts apply to most frameworks, but with levels differing according to the type, maturity and creditworthiness of the collateral assets. Third, additional requirements should often be fulfilled that are common among all frameworks, such as the prohibition of "close links" (i.e. where the counterparty is linked to an issuer/guarantor of the assets) or limits as regards the use of certain assets (e.g. concentration limits, which could limit the use of certain issuers, product categories or ratings of the issuance/issuer by category of collateral).

Considering that there is already a certain level of overlap among the different frameworks, and to the extent that the remaining differences reflect different objectives (e.g. the need to limit or avoid close links, concentration, and institutional interdependence), there is no need for further harmonisation. On the contrary, a certain degree of diversification across the collateral frameworks may be seen as a positive element that enhances resilience, provided that some conditions are met in relation to the transparency of the collateral frameworks, clarity of regulatory requirements and availability of collateral.

It is of the utmost importance that **transparency on the different frameworks is provided on an ex-ante basis and that such information is kept as up to date as possible**. Transparency and a good understanding of collateral eligibility requirements are important for several reasons. First, taking stock of the different frameworks allows uncertainty to be reduced and provides an understanding of the complexity that market participants are faced with when interacting under the different frameworks. Increased disclosure, at least for regulatory and/or due diligence purposes, will also support a better understanding. Second, increasing transparency allows for a better appreciation of the possible need for improvements to current market practices. In this regard, it is noted that, since the onset of the financial crisis, the location of collateral and the ease with which such collateral can be transferred cross-border has become increasingly relevant; in particular, the availability and use of collateral for different purposes have become essential for financial markets to work smoothly.

Ensuring that regulatory frameworks are clear and that authorities provide guidance where needed is important for the acceptance of collateral. In particular, authorities should contribute to providing clarity on the features of "safe" or "liquid" assets. Major differences in the interpretation of what is meant by "highly liquid" or "highly reliable" may lead to major discrepancies in the risk

management framework that would not necessarily be justified. In this regard, some initiatives are underway in the EU to review, or provide a ranking for, different assets, especially with a view to determining the assets that could form part of any collateral buffers. Consistency would also be desirable at global level.

The existence of different collateral requirements also increases the need to have effective procedures for **enhancing collateral availability**, such as the development of links and interoperability, as well as for collateral transformation services. While the latter can help in having collateral available where needed, they also have the potential to create new risks and instability.

On the basis of these considerations, the report suggests a number of actions for **follow-up work**:

1. Publish the detailed annexes of this report and update them at regular intervals in order to track changes/trends that may emerge. The report itself shall also be updated, albeit at less frequent intervals.

2. Further work to improve the availability of collateral. In this respect, COGESI has started to analyse the functioning of the repo market, which could lead to various actions being taken to support the increased use of secured funding via repo.

3. Further work on collateral transformation services, haircuts (e.g. valuation haircuts applied across different collateral frameworks) and a quantification of eligible collateral under the different collateral frameworks.

1 INTRODUCTION

Against a background of increasing demand for collateral, COGESI, through its ad hoc group on collateral harmonisation,[1] initiated an analysis of collateral eligibility requirements across various frameworks in order to better understand the differing requirements. In this regard, it was recognised at the outset that there are, or will in future be, differing eligibility requirements for collateral and assets in various contexts, for example collateral for use with central banks to receive credit, collateral/assets to comply with regulatory requirements and collateral for use in repo-related clearing/collateral management services and collateralisation of OTC derivative clearing. These various contexts are hereafter referred to as "frameworks".[2]

The ongoing financial crisis, which began in summer 2007, has been a driver for central banks to adjust their eligibility criteria for collateral, as have market developments which have urged a shift from unsecured to secured funding and thereby greater use of collateral. Meanwhile, financial regulators worldwide have cooperated on the topic of regulatory reform to address flaws in the financial sector, in particular as regards liquidity and risk management. In view of these developments, internationally active financial institutions are faced with complex and often diverging collateral requirements across borders and frameworks.

This report analyses and identifies the similarities and differences in collateral eligibility requirements across three key frameworks, namely (i) central bank frameworks; (ii) regulatory frameworks; and (iii) CCP frameworks (covering underlying collateral for CCP-cleared repos and margin collateral for OTC derivatives and repo clearing). It generally focuses on European frameworks, although the scope has sometimes been extended to include central bank frameworks in the United States and Japan, as well as certain global/non-European regulatory frameworks which could have an impact on European market participants (such as Basel III, the US Dodd Frank Act and the draft Basel Committee on Banking Supervision and International Organization of Securities Commissions (BCBS-IOSCO) principles for non-centrally cleared OTC derivatives).

The report is structured as follows: Section 2 presents an overview of collateral eligibility requirements across central banks, regulatory frameworks and CCP frameworks; Section 3 analyses the similarities and differences across the aforementioned frameworks; and Section 4 concludes on the similarities and differences, as well as potential issues that merit further consideration by policy-makers and market participants.

Detailed annexes are attached to the report as follows: Annex 1: extracts from regulatory frameworks and related collateral and asset requirements; Annex 2: high-level overview of eligibility requirements for collateral; Annex 3a: overview of marketable assets within the collateral frameworks of central banks; Annex 3b: overview of non-marketable assets within the frameworks of central banks, focusing on credit claims (bank loans); Annex 4: overview of collateral requirements within regulatory frameworks; Annex 5: overview of collateral requirements within CCP frameworks; Annex 6: abbreviations used in the report.

1 The ad hoc group of COGESI on collateral harmonisation is composed of members of COGESI and the ECB Money Market Contact Group (MMCG).
2 The term "collateral" is generally used and intended to also cover asset eligibility requirements for specific regulatory frameworks.

2 COLLATERAL ELIGIBILITY REQUIREMENTS

The high-level collateral eligibility requirements across central banks, regulatory and CCP frameworks are presented in this section. In each case, a brief overview of the key requirements for each framework is provided, supported by a more extensive presentation of the requirements in the attached annexes.

2.1 CENTRAL BANK FRAMEWORKS

In the following section, a general overview is provided of the assets which are accepted in (collateralised) monetary policy operations by selected European central banks (Eurosystem, Bank of England, Swiss National Bank and Sveriges Riksbank), as well as the central banks in the United States and Japan (outlined in Table 1). A general description is also provided of the criteria/requirements for marketable assets that have to be fulfilled in order for collateral to be deemed eligible (outlined in Table 2). Finally, an overview is provided of eligibility requirements for one important category of non-marketable assets, namely credit claims, which are accepted by some central banks (outlined in Table 3). The tables present a snapshot of the eligible assets accepted as collateral by selected central banks. It is noted that the list of eligible assets is subject to change, e.g. as a result of temporary measures by central banks or other adaptations to their collateral framework.

2.1.1 GENERAL OVERVIEW OF THE COLLATERAL ACCEPTED BY CENTRAL BANKS

Central banks typically take a specific range of marketable and certain non-marketable assets, although national or regional specifications emerge for the acceptance of certain types of assets (see Table 1 below).

Table 1 General overview of asset types accepted by selected central banks

Collateral	Eurosystem	BoE	Riksbank	SNB	Fed	BoJ
Marketable assets						
Debt instruments issued by:						
Central governments	√	√	√	√	√	√
Central banks	√	√	√	√		
Public sector institutions other than central governments	√	√	√	√	√	√
Supranational institutions	√	√	√	√		√
Credit institutions (covered bonds)	√	√	√	√		
Credit institutions (excluding covered bonds)	√	√		(√)		
Corporations (other than credit institutions)	√	√	√	√		√
Asset-backed securities (ABS)	√	√				√
Equities						
Money market funds						
Gold						
Non-marketable assets						
Credit claims (bank loans)	√					√
Non-marketable retail mortgage-backed debt instruments	√	√				
Cash as collateral						
Cash including fixed-term deposits from eligible counterparties	√					

For *marketable assets*, central banks generally accept government bonds and other debt instruments issued by public sectors (e.g. central banks, governmental agencies) and international/supranational institutions. As regards central banks' acceptance of securities issued by the private sector, the policies may vary and not all central banks accept covered bank bonds, uncovered bank bonds (often referred to as unsecured bank bonds), asset-backed securities or corporate bonds. Hence, for debt instruments issued by private entities, such as bonds issued by banks or credit institutions, additional requirements are often applicable (such as government guarantees in the case of the Bank of England). Following the crisis, some central banks have revised their existing eligibility rules and requirements on certain marketable assets, such as sovereign-linked assets or asset-backed securities. This is explained in more detail in Box 1. In addition, as a general rule, central banks do not accept the following as collateral: equities, convertible bonds, money market funds or gold.

For *non-marketable assets*, collateral acceptance by central banks is typically limited to certain assets, such as credit claims (also referred to as bank loans) and retail mortgage-backed debt instruments (promissory notes or a bills of exchange that are secured by a pool of residential mortgages and that fall short of full securitisation). Some central banks have also revised their eligibility rules for these non-marketable assets during the financial crisis.

Cash deposits, in the form of fixed-term deposits from eligible counterparties, are accepted as collateral by some central banks such as those of the Eurosystem, as well as Sveriges Riksbank. While the Eurosystem accepts cash as collateral denominated in euro, Sveriges Riksbank accepts some regionally linked currencies (euro, Danish krone and Norwegian Krone).

This report focuses mainly on asset eligibility rules for collateralised monetary policy operations executed as open market operations. However, some central banks, such as the Federal Reserve System, also execute their main open market operations as outright operations (in addition to repurchase operations). For the purpose of the current report, the asset eligibility requirements for the outright operations of the Federal Reserve System are presented under the heading of "collateral eligibility requirements". It is further noted that, in general, the report does not cover central bank standing facilities. Hence, the table does *not* refer to the collateral rules of standing liquidity facilities. Nonetheless, it is noted that central banks could have broader collateral frameworks for discount window lending, as well as for intraday credit purposes. Frameworks for the latter are explained in Annex 3 and on the websites of the central banks.

2.1.2 REQUIREMENTS FOR MARKETABLE ASSETS AS ELIGIBLE COLLATERAL ACCEPTED BY CENTRAL BANKS

To be eligible as collateral for central bank operations, assets need to fulfil specific criteria and requirements to ensure sufficient quality and protect the central bank from counterparty credit risk. Table 2 provides an overview of the criteria/requirements for the marketable assets of selected central banks. The main eligibility criteria refer to the type of issuer or debtor, the credit quality/rating of the securities and currency accepted, as well as to geographical features such as the issuer's location, the place of issue or the place of settlement.

- **Type of issuer/debtor/guarantor:** The entities issuing debt instruments are typically classified/grouped, i.e. assets issued by the central banks, public sector (central, regional or local government), private sector (banks and corporates) and international or supranational institutions. The same classification is used for guarantors.

- **Credit standards:** Credit standards are an explicit set of rules to determine the degree of creditworthiness of the asset itself or the issuer/debtor/guarantor. As regards marketable assets, the Eurosystem only accepts assets which meet high credit standards. Moreover, it applies a minimum probability of default[3] approach, which is then compared with/mapped onto the ratings of external credit rating agencies (credit assessment institutions). The Eurosystem also allows the use of other credit assessment systems, such as in-house central bank credit assessment systems, counterparties' internal rating-based systems or third-party providers' rating tools. Other central banks typically require more than one rating from the external credit rating agencies.

- **Issuer residence:** The place of establishment of the issuer/debtor/guarantor is also specified. For example, the Eurosystem requires that, for marketable assets, the *issuer* must be established in the European Economic Area (EEA) or in one of the non-EEA G10 countries.[4] The *guarantor* must be established in the EEA (unless a guarantee is not needed to establish the high credit standards for marketable assets). International or supranational institutions are eligible issuers/guarantors, irrespective of their place of establishment. If a marketable debt instrument is issued by a non-financial corporation that is not rated by an external credit assessment institution, the *issuer/guarantor* must be established in the euro area. In the case of non-marketable assets, the place of establishment of the debtor/guarantor is the euro area.

- The **place of issuance** and the **acceptable markets** (for trading the collateral assets) are basically limited to the operating areas of the respective central banks, although the Eurosystem, Bank of England, Swiss National Bank and Sveriges Riksbank extend the place of issuance and the acceptable markets beyond their respective borders.

- **Seniority:** This refers to the order of repayment in the event of the sale or bankruptcy of the issuer. Seniority can refer to either debt or preferred stock. Senior debt must be repaid before subordinated (or junior) debt is repaid. In general, central banks require eligible assets to be senior in the order of repayments.

- **Settlement:** The settlement criteria refer to the transfer of the collateral from (the securities account of) the collateral giver to (the securities account of) the collateral taker. A domestic settlement takes place with the local Central Securities Depository (CSD); a foreign (cross-border) settlement takes place with a non-local CSD.

- **Currency:** This refers to the currency in which the collateral is denominated. All central banks in the sample accept foreign assets denominated in major currencies or regionally-linked currencies in addition to collateral denominated in domestic currencies, albeit to varying degrees and, in some cases, only in limited/exceptional cases. The Eurosystem is the only central bank among the central banks discussed that has limited its accepted currency to euro within its permanent or standard collateral framework.[5] However, in the context of temporary

3 Probability of default (PD) is a financial term describing the likelihood of a default over a particular time horizon. It provides an estimate of the likelihood that a client of a financial institution will be unable to meet its debt obligations. PD is a key parameter used in the calculation of economic capital or regulatory capital under Basel II for a banking institution.

4 In the case of non-EEA G10 countries, the debt instruments can only be considered eligible if the Eurosystem ascertains that its rights would be protected in an appropriate manner, as determined by the Eurosystem, under the laws of the respective non-EEA G10 country. For this purpose, a legal assessment in a form and with substance acceptable to the Eurosystem will have to be submitted before the assets can be considered eligible. In the case of an asset-backed security, the issuer must be established in the EEA.

5 While the legal provisions for the permanent or standard collateral framework are laid down in the general framework (also referred to as general documentation), the temporary framework is laid down in Guideline ECB/2013/4.

Table 2 Requirements for marketable assets as eligible collateral for the main monetary policy operations of 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.

collateral measures which were introduced between 2008 and 2010, the list of eligible assets was extended to accept certain assets denominated in foreign currency. This temporary measure to expand the list of assets eligible as collateral in Eurosystem credit operations was reintroduced in September 2012 (see Box 1).[6] Other central banks allow assets issued in major currencies, such as euro, US dollar and pound sterling, within their standard frameworks.

Finally, central banks also restrict the use of collateral in certain ways. For example, the Eurosystem does not allow counterparties to submit as collateral assets issued by any entity with which it has

6 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

close links.[7] In addition, the Eurosystem also has a concentration limit in place, which limits the use of unsecured debt instruments issued by a credit institution or by any other entity with which the credit institution has close links.[8]

7 According to Section 6.2.3.2 of the Eurosystem's general documentation, "… close links means any of the following situations where the counterparty is linked to an issuer/debtor/guarantor of eligible assets: (a) the counterparty owns directly, or indirectly, through one or more other undertakings, 20 % or more of the capital of the issuer/debtor/ guarantor; (b) the issuer/debtor/guarantor owns directly, or indirectly through one or more other undertakings, 20 % or more of the capital of the counterparty; (c) a third party owns more than 20 % of the capital of the counterparty and more than 20 % of the capital of the issuer/debtor/guarantor, either directly or indirectly, through one or more undertakings". However, close links do not apply to certain assets, as specified in Section 6.2.3.2 (available at http://www.ecb.europa.eu/ecb/legal/pdf/02011o0014-20130103-en.pdf).

8 See Section 6.4.2 (c) of the Eurosystem's general documentation: "The Eurosystem limits the use of unsecured debt instruments issued by a credit institution or by any other entity with which the credit institution has close links as described in section 6.2.3. Such assets may only be used as collateral by a counterparty to the extent that the value assigned to that collateral by the Eurosystem after the application of haircuts does not exceed 5% of the total value of the collateral submitted by that counterparty after the haircuts. This limit does not apply to assets that are guaranteed by a public sector entity which has the right to levy taxes, or if the value after haircuts of the assets does not exceed €50 million(...)."

Box 1

MEASURES TAKEN BY THE EUROSYSTEM DURING THE CRISIS THAT ARE RELATED TO THE COLLATERAL FRAMEWORK

The financial crisis has led to central banks introducing changes to their respective collateral eligibility criteria. As an illustration, this box presents some of the changes to the collateral requirements of the Eurosystem collateral framework that have been introduced during the financial crisis, i.e. over the past six years, in order to preserve and increase the availability of collateral. In addition, modifications were introduced which were not directly linked to the financial crisis, but echoed improvements in the methodological framework applied in the context of the Eurosystem's regular risk control framework review. Hence, some of the changes mentioned below were initially introduced as temporary measures because financial institutions may find it more difficult to fund themselves in the financial markets in times of stress (as the increased risk aversion of financial institutions may lead to more restricted and/or more costly funding activity). However, some of the measures were subsequently incorporated into the Eurosystem's standard collateral framework (and are therefore no longer temporary).

In particular, the Eurosystem's changes (either in the general or temporary framework)[1] include the following:

- *Expansion of collateral eligibility:*

– Accepting collateral denominated in other currencies (USD, GBP, JPY) which is issued and held in the euro area (additional valuation haircuts are applied which vary depending on the currency).

– Accepting marketable and non-marketable assets (other than ABS) with a minimum credit threshold at investment-grade level (i.e. BBB-/Baa3) and applying a schedule of graduated valuation haircuts to all marketable assets, including lower-rated assets. A separate haircut schedule is applied for non-marketable assets.

– Acceptance of BBB-rated ABS is possible if additional criteria that mitigate risk are fulfilled (see Guideline ECB/2013/4).

– Suspension of the rating threshold for debt instruments of the certain sovereign-linked assets.

– Temporary acceptance of additional credit claims that satisfy specific eligibility criteria. The responsibility entailed in the acceptance of such credit claims will be borne by the national central bank authorising their use.

- *Additional risk control measures:*
  – ABS loan-by-loan information requirements in the Eurosystem collateral framework.

1 For more information, see "General framework" and "Temporary framework", available on the ECB's website at http://www.ecb.europa.eu.

  – Adjustment of risk control measures for ABS (e.g. rating of AAA/Aaa at issuance for all new ABS; threshold of A- remaining during the life of the security) and for uncovered bank bonds (5% concentration limit).[2]

- Acceptance of *fixed-term deposits* from eligible counterparties with the Eurosystem as an eligible asset type.

- *Restriction in (own)use of government-guaranteed bank bonds* above the nominal amounts already mobilised on 3 July 2012 (see Guideline ECB/2013/4), and *complete exclusion of the use of such assets* as of 1 March 2015 (see Decision ECB/2013/6).

2 Some assets could have a lower rating, subject to a number of additional risk mitigation criteria (e.g. there could be a BBB rating for (i) residential mortgages; (ii) loans to small and medium-sized enterprises (SMEs); (iii) commercial mortgages; (iv) auto loans; (v) leasing; (vi) consumer finance). See Guideline ECB/2013/4.

2.1.3 GENERAL OVERVIEW OF NON-MARKETABLE ASSETS AS ACCEPTED BY CENTRAL BANKS

Some central banks, such as those of the Eurosystem and the Bank of Japan, accept non-marketable assets (mainly credit claims) as eligible collateral for their main monetary policy operations (see Table 3, which lists those central banks accepting credit claims). Other central banks, such as the Federal Reserve System and the Bank of England, only accept credit claims as part of their discount window facilities.

Central banks always assess the eligibility of non-marketable assets against a set of requirements. The central banks of the Eurosystem, for example, accept credit claims and retail mortgage-backed debt instruments denominated in euro. These credit claims cover loans to non-financial corporations and public sector entities established in the euro area, as well as to international or supranational institutions. Retail mortgage-backed debt instruments are accepted from credit institutions established in the euro area. The debtor/guarantor must also meet high credit standards. These are assessed by the Eurosystem using its internal rules for credit claims and its rules for retail mortgage-backed debt instruments. The Eurosystem also defines the minimum probability of default in its collateral eligibility criteria, while other central banks often use external credit ratings. Finally, the Eurosystem sets conditions on the minimum size of credit claims and the law governing them.

In response to the financial crisis, central banks implemented several measures to facilitate corporate financing in their jurisdictions. In particular, the Eurosystem implemented the Additional Credit

Table 3 Eligibility criteria for credit claims as central bank collateral for main monetary policy operations

	Eurosystem	Bank of Japan
Place of borrower/debtor/guarantor	Euro area	Japan
Currency denomination	EUR	JPY
Governing laws	Euro area countries. The total number of laws shall not exceed two.[1)]	Japan
Maturity	No cap	Up to 10 years
Minimum size threshold at submission	EUR 500,000 threshold for cross-border use.	JPY 500 million

1) For the detailed law governing requirements on credit claims in the Eurosystem, see Section 6.2.2.1 of the general documentation, European Central Bank (2011b), which states: "The credit claim agreement and the agreement between the counterparty guarantor (if relevant); (v) the credit claim agreement; (vi) the mobilisation agreement may not exceed two".

Claims[9] framework and the Bank of England launched the Funding for Lending scheme,[10] under which wider types of credit claims temporarily become eligible for open market operations (by some central banks of the Eurosystem) or non-discount window-type operations (by the Bank of England).

2.2 REGULATORY FRAMEWORKS

As part of the response to the financial crisis, a number of regulatory reforms have been launched around the world in order to restore financial stability across domestic and cross-border financial systems and improve it in the long run. The financial systems referred to in this respect are composed of financial markets and the institutions participating in them, as well as financial market infrastructures (FMIs), which provide payment, clearing and settlement systems for financial transactions. The regulatory initiatives have led to four key changes, all of which have an impact on collateral requirements:

- Additional risk management requirements for FMIs have been introduced via the CPSS-IOSCO principles for FMIs.[11]

- In response to the G20 agreement of September 2009[12], mandatory clearing of OTC derivative transactions via CCPs has been introduced via EMIR[13] in the EU and the DFA[14] in the United States.

- In response to the G20 agreement of November 2011,[15] standards for margin requirements on non-centrally cleared derivatives are being introduced by the BCBS and IOSCO, which are developing draft principles for non-centrally cleared OTC derivatives.

- A set of requirements on liquidity management for financial institutions is proposed in Basel III.

This section presents an overview of the collateral requirements under the main regulatory frameworks, i.e. the PFMIs, EMIR/DFA and Basel III. Under these regulatory frameworks, a broad range of highly liquid assets with low credit and market risk are eligible as collateral (or assets in the case of Basel III[16]) (see Table 4). In particular, eligible assets include high quality debt instruments such as those issued by governments, central banks, public sector/supranational institutions and covered bonds. ABS, equities, money market funds and gold are also deemed to be eligible under certain conditions.

9 On 9 February 2012 the ECB Governing Council gave the approval for certain national central banks to use their own criteria for so-called additional credit claims. See http://www.ecb.int/press/pr/date/2012/html/pr120209_2.en.html and http://www.ecb.int/mopo/pdf/mb201202en_box2.pdf
10 See http://www.bankofengland.co.uk/markets/Pages/FLS/default.aspx
11 See http://www.bis.org/publ/cpss101.htm
12 The agreement specified that all standardised OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties by end-2012 at the latest. OTC derivative contracts should be reported to trade repositories. Non-centrally cleared contracts should be subject to higher capital requirements. See http://www.financialstabilityboard.org/publications/r_101025.pdf
13 Regulation of the European Parliament and of the Council on OTC derivatives, central counterparties and trade repositories. See http://ec.europa.eu/internal_market/financial-markets/derivatives/index_en.htm
14 See http://www.gpo.gov/fdsys/pkg/PLAW-111publ203/html/PLAW-111publ203.htm
15 See www.g20civil.com/documents/Cannes_Declaration_4_November_2011.pdf
16 For the purpose of this report, the term “collateral” (in addition to the term “assets”) is used when referring to Basel III requirements to facilitate comparison across the different frameworks.

Table 4 Overview of the regulatory frameworks

Regulatory frameworks and related collateral/asset requirements[1]
CPSS-IOSCO principles for financial market infrastructures (PFMIs): *"An FMI that requires collateral to manage its or its participants' credit exposure should accept collateral with low credit, liquidity and market risks. An FMI should also set and enforce appropriately conservative haircuts and concentration limits."*
EMIR and related regulatory technical standards: *"A CCP shall accept highly liquid collateral with minimal credit and market risk to cover its initial and ongoing exposure to its clearing members. For non-financial counterparties, a CCP may accept bank guarantees. A CCP may accept, where appropriate and sufficiently prudent, the underlying of the derivative contract or the financial instrument that originates the CCP exposure as collateral to cover its margin requirements."* ***Cash collateral:*** *highly liquid collateral in the form of cash shall be denominated in one of the following currencies: (a) a currency for which the CCP can demonstrate to the competent authorities that it is able to adequately manage the risk; (b) a currency in which the CCP clears transactions, within the limits of the collateral required to cover the CCP's exposures in that currency.* ***Highly liquid financial instruments:*** *financial instruments can be considered highly liquid financial instruments, bearing minimal credit and market risk if they are debt instruments[2] or transferable securities and money market instruments under certain conditions such as they should be denominated in a currency, (i) the risk of which the CCP can demonstrate that it is able to manage, and (ii) in which the CCP clears contracts, in the limit of the collateral required to cover the CCP's exposures in that currency.* ***Bank guarantees*** *accepted as eligible assets should be either commercial bank guarantees which are subject to limits agreed with the competent authority, or a central bank guarantee. Both types of guarantee shall meet certain conditions to be eligible.* ***Gold:*** *shall be allocated pure gold bullion of recognised good delivery and meet certain conditions.*
DFA and proposed rules by the prudential regulators, the Commodity Futures Trading Commission (CFTC) and the Securities and Exchange Commission (SEC): *"A covered swap entity shall collect initial margin and variation margin required pursuant to this part solely in the form of one or more of the following types of eligible collateral –* *(a) immediately available cash funds that are denominated in (i) U.S. dollars; or (ii) the currency in which payment obligations under the swap are required to be settled;* *(b) any obligation which is a direct obligation of, or fully guaranteed as to principal and interest by, the United States; and* *(c) with respect to initial margin only (i) any senior debt obligation of the Federal National Mortgage Association, the Federal Home Loan Mortgage Corporation, the Federal Home Loan Banks and the Federal Agricultural Mort gage Corporation; and (ii) any obligation that is an "insured obligation", as that term is defined in 12 U.S.C. 2277a(3), of a Farm Credit System Bank."*
Basel III: International framework for liquidity risk measurement, standards and monitoring for banks (criteria for high-quality liquid assets for the liquidity coverage ratio): *Basel III defines two separate but complementary minimum standards for funding risk: the* ***liquidity coverage ratio*** *(LCR) and the* ***net stable funding ratio*** *(NSFR). The LCR should promote the short-term resilience of the liquidity risk profile of banks by ensuring that they have sufficient high-quality liquid assets to survive a significant stress scenario lasting 30 calendar days. According to the Basel III rules, assets are considered to be high-quality liquid assets if they can be immediately and easily converted into cash at little or no less of value. There are two categories of high-quality liquid assets: Level 1 assets can be included in the stock without limit, while Level 2 assets can only comprise up to 40% of the stock.* ***Level 1 assets*** *are limited to a) cash, b) central bank reserves, c) marketable securities representing claims on, or guaranteed by, sovereigns, central banks, public sector entities or supranational institutions and satisfying certain conditions.* ***Level 2 assets*** *comprise Level 2A assets and any Level 2B assets permitted by the supervisor.* ***Level 2A assets*** *are limited to* *a) marketable securities representing claims on, or guaranteed by, sovereigns, central banks, public sector entities or multilateral development banks that satisfy certain conditions; b) corporate debt securities (including commercial paper) and covered bonds that satisfy certain conditions.* ***Level 2B assets*** *are limited to: (a) residential mortgage-backed securities that satisfy certain conditions, which are subject to a 25% haircut; (b) corporate debt securities (including commercial paper) that satisfy certain conditions, which are subject to a 50% haircut; and (c) common equity shares that satisfy certain conditions, which are subject to a 50% haircut.*

1) For details see the annex.
2) If the highly liquid instruments are debt instruments, they have to meet additional conditions i.e. they should be issued or guaranteed by a government, a central bank or a supranational institution.

PFMIs

The PFMI framework is more conceptual in defining the eligibility of collateral than EMIR and Basel III. In particular, it specifies that financial market infrastructures should generally limit the assets they routinely accept as collateral to those with low credit, liquidity and market risks, but it does not directly specify the types of collateral. According to the requirements defined in the PFMIs, an FMI must be confident of the value of the collateral in the event of liquidation, and of its capacity to use that collateral quickly, especially in stressed market conditions. An infrastructure that accepts collateral with credit, liquidity and market risks above minimum levels should demonstrate that it sets and enforces appropriately conservative haircuts and concentration limits. Furthermore, an FMI should appropriately address pro-cyclicality in its collateral arrangements. An FMI is also allowed to accept cross-border collateral. In such cases, the FMI should identify and mitigate any additional risks associated with its use and ensure that it can be used in a timely manner.

EMIR

The EMIR framework (and the related regulatory technical standards) specify the types of collateral that could be considered highly liquid (for central clearing), i.e. *cash, financial instruments, bank guarantees and gold*. Cash accepted as collateral should be denominated in the currencies in which the CCP (i) can manage the risks with a high level of confidence and (ii) clears transactions. Financial instruments can be considered highly liquid financial instruments bearing minimal credit and market risk if they are debt instruments (issued or explicitly guaranteed by a central bank, a government or a supranational institution) or transferable securities and money market instruments under certain conditions. A bank guarantee issued by either a commercial or central bank could be eligible collateral under certain conditions. In addition, a framework was defined for determining haircuts and collateral concentration limits. The haircuts (similar to the PFMIs) should be calculated in a conservative manner to limit pro-cyclical effects as far as possible. Some assets are not included as eligible collateral, in particular units of funds. However the restriction does not apply to money market funds which are listed and traded on exchanges.

DFA AND THE PRUDENTIAL REGULATORS' PROPOSED RULE ON MARGINS FOR UNCLEARED SWAPS

The DFA does not explicitly define the collateral that is eligible, but identifies the general types of collateral (see Table 4).

The prudential regulators and the CFTC are proposing to specifically identify the asset classes that would be eligible collateral for both the initial and variation margin requirements of uncleared swaps.[17] According to the proposed draft rules, eligible collateral is generally limited to immediately available cash funds and certain high quality, highly liquid US government and agency obligations and, in the case of initial margin only, certain government-sponsored enterprise obligations, subject to specified minimum haircuts for the purposes of determining their value for margin purposes. The collateral requirements have not yet been finalised and, according to the public consultation, the types of eligible collateral listed might yet be broadened.

BASEL III

The Basel Committee's LCR[18] is an essential component of the Basel III reforms. It promotes the short-term resilience of a bank's liquidity risk profile by ensuring that a bank has an adequate stock

17 For the detail on the proposed rules, see Margin and Capital Requirements for Covered Swap Entities, 76 FR 27564, published by the prudential regulators; and Margin Requirements for Uncleared Swaps for Swap Dealers and Major Swap Participants, 76 FR 23732, published by the CFTC.

18 In January 2013 the BCBS endorsed the LCR. More information on the LCR is available on the BIS' website at http://www.bis.org/press/p130107.htm

of unencumbered high quality liquid assets that can easily and immediately be converted into cash in private markets to meet its liquidity needs for a 30-calendar day liquidity stress scenario.

There are two categories of assets that can be included in the stock of high quality liquid assets. Assets to be included in each category are those that the bank is holding on the first day of the stress period, irrespective of their residual maturity. "Level 1" assets can be included without limit, while "Level 2" assets can only comprise up to 40% of the stock.

- Level 1 assets consist of the following: (i) coins and banknotes; (ii) qualifying marketable securities from sovereigns, central banks, public sector entities and multilateral development banks; (iii) qualifying central bank reserves; (iv) domestic sovereign or central bank debt for non-0% risk-weighted sovereigns.

- Level 2 assets consist of two sub-levels.[19] Level 2A assets (maximum of 85% of high quality liquid assets) consist of the following: (i) sovereign, central bank, multilateral development bank, and public sector entity assets qualifying for a 20% risk weighting; (ii) qualifying corporate debt securities rated AA- or higher; (iii) qualifying covered bonds rated AA- or higher. These are also subject to a 15% haircut. Level 2B assets (maximum of 15% of high quality liquid assets) consist of the following: (i) qualifying residential mortgage-backed securities rated at least AA, which are subject to a 25% haircut; (ii) qualifying corporate debt securities rated between A+ and BBB-, which are subject to a 50% haircut; and (iii) qualifying common equity shares, which are subject to a 50% haircut.

It is recalled that, in order to implement Basel III under European law, the European Commission has drafted the Capital Requirements Regulation (CRR)/Capital Requirements Directive (CRD IV) package. As the date for implementation is still pending, there are only limited references to the CRR/CRD IV package in the current report. However, the implementation of this package, as well as the subsequent national implementation of CRD IV, will be reflected in a later version of this report.

19 Ibidem: Level 2 assets (comprising Level 2A assets and any Level 2B assets permitted by the supervisor) can be included in the stock of high quality liquid assets, subject to the requirement that they comprise no more than 40% of the overall stock after haircuts have been applied.

Box 2

EUROPEAN BANKING AUTHORITY DISCUSSION PAPER ON DEFINING LIQUID ASSETS UNDER THE DRAFT LIQUIDITY COVERAGE RATIO

Under the draft Capital Requirement Regulation (CRR), the European Banking Authority (EBA) was tasked with providing uniform definitions of high and extremely high liquidity and credit quality in the context of transferable assets and appropriate haircuts (for the purpose of the liquidity coverage ratio (LCR) requirements, as specified by the draft CRR). In a discussion paper,[1] the EBA presented the methodology and scope of its forthcoming analysis. In the next step, and on the basis of the feedback on the discussion paper and the outcome of further analysis, the EBA will report to the European Commission on the appropriate definitions.

1 Further details on the discussion paper, which is for public consultation, are available on the EBA's website at http://eba.europa.eu/News--Communications/Year/2013/EBA-consults-on-the-process-to-define-highlyliqui.aspx.

In its approach, the EBA suggested taking the following steps when performing its analysis.

First, the EBA assesses a range of asset classes against the fundamental definition of liquid assets set out in the draft CRR. In particular, the Article 404(3) of the CRR notes that the assets should fulfil each of the following conditions: (1) assets are not issued by the institution itself or its parent or subsidiary institutions or another subsidiary of its parent institutions or parent financial holding company; (2) assets are eligible collateral in normal times for intraday liquidity needs and overnight liquidity facilities of a central bank in a Member State or if the liquid assets are held to meet liquidity outflows in the currency of a third country, of the central bank of that third country;[2] (3) the price of assets can be determined by a formula that is easy to calculate based on publicly available inputs and does not depend on strong assumptions as is typically the case for structured or exotic products; (4) assets are listed on a recognised exchange; (5) assets are tradable on active outright sale or repurchase agreement markets with numerous, diverse market participants, a high trading volume, and market breadth and depth.

In a second step, a detailed quantitative assessment of the liquidity of individual assets is performed. For example, market data could be gathered through mandatory reporting requirements under the Markets in Financial Instruments Directive (MiFID). In conducting this quantitative assessment, the EBA considers whether a ranking of asset classes based on their aggregate liquidity properties can be established to define asset classes and whether any explanatory characteristics of individual securities can be identified to explain liquidity differences observed within asset classes.

2 This condition shall not apply in the case of liquid assets held to meet liquidity outflows in a currency in which there is an extremely narrow definition of central bank eligibility. For currencies of third countries, this exception shall only apply if the competent authorities of the third country apply the same exception and the third country has comparable reporting requirements in place.

2.3 CCP COLLATERAL FRAMEWORKS

The current section presents the CCPs' collateral requirements for repo clearing arrangements. CCPs control their exposures to the clearing members with a set of risk management tools, including through collateral and margin received from member institutions. This section draws a distinction between the collateral requirements of CCPs related to:

(i) underlying collateral that counterparties may provide for CCP-cleared repos (see Box 3);

(ii) margin collateral for centrally cleared repos and OTC derivatives.

Requirements related to underlying collateral for CCP-cleared repos are different in purpose and definition from the collateral requirements of the CCP for margin purposes. Regarding the underlying collateral for repos, the securities are sold with an agreement for the seller to buy back the securities at a later date. Regarding margin, securities are deposited to cover some or all of the credit risk of the counterparty. The two collateral frameworks are therefore presented separately in the following paragraphs.

2.3.1 UNDERLYING COLLATERAL FOR CCP-CLEARED REPOS

For repo transactions, if the parties agree that a specific range/basket of assets (i.e. asset class/ list of ISIN codes) may be used, rather than a specific asset, the transaction is then referred to as a "*general collateral (GC)*" repo. In the GC repo market the cash provider is willing to accept a range of assets as collateral from a cash taker, as long as the assets meet a certain level of quality. However, the term "general collateral" varies depending on the use/purpose of the financing. GC baskets could also refer to certain assets. For example, the GC Pooling services of Eurex Clearing include the GC Pooling equity basket, which include the top 50 HDAX equities, or the GC Pooling ECB basket, which covers a certain number of eligible Eurosystem securities. The term "general collateral" could therefore refer to a broad or narrow set of collateral, and even include a wider range of assets than eligible Eurosystem collateral.

The market structure for repos in general refers to the processes for (i) trading, (ii) clearing, (iii) collateral management and (iv) settlement.

- Trading: When participants agree the terms of a transaction, different processes could be involved, i.e. (i) directly negotiated trading, (ii) voice-brokered trading and (iii) trading on automatic repo trading systems.

- Clearing refers to a number of processes between trading and settlement.[20] The clearing functions can be provided bilaterally (between direct market counterparties or their agents) or centrally (through one or more service providers). A significant share of repos in Europe are cleared centrally by central clearing counterparties (CCPs).

- Providers of collateral management services handle a variety of collateral-related functions for a client firm, including valuation of collateral, confirmation of valuations with counterparties, optimisation of collateral usage and transfer of collateral. In Europe, several tri-party collateral management service providers have emerged, which act as an agent (third party) for the repo counterparties to select the repo collateral, to initiate the securities and cash transfers, and to process administrative and risk management procedures. Financing/pooling arrangements are also offered.

- Settlement: When the obligations related to the transaction are discharged through the exchange of assets and/or monies.

This report focuses on developments of collateral acceptance in the market structure for GC repos which are centrally cleared by CCPs and typically involve tri-party collateral management service providers. In particular, the collateral which is eligible for underlying CCP-cleared GC financing/ pooling arrangements is typically listed in different GC "baskets" (commonly referred to as CCP GC pooling baskets/arrangements).

20 The clearing process includes trade capture, economic affirmation (trade verification), trade matching or affirmation, legal confirmation, reporting to a trade repository, position and payment netting, portfolio compression, novation (a central clearing mechanism) and risk management (margining and other default backing).

Box 3

EXAMPLES OF CCP-CLEARED GENERAL COLLATERAL (GC) POOLING ARRANGEMENTS

The CCP-cleared general collateral (GC) pooling arrangements typically involve highly automated processes which interlink the electronic trading platforms with the clearing/settlement and collateral management arrangements. After the trade, the CCP verifies and accepts the transaction, and collateral is automatically allocated by the tri-party collateral management service providers. The table below presents examples of trade and post-trade arrangements in Europe:

Trading	Electronic trading platforms, e.g. Eurex Repo.
Clearing	CCPs, e.g. Eurex Clearing AG, CC&G and LCH.Clearnet SA, LCH. Clearnet Ltd, etc.
Securities settlement	(I)CSDs, e.g. Euroclear Bank, Clearstream Banking AG (Frankfurt), Clearstream Banking SA (Luxembourg), etc.
Collateral management	The tri-party collateral management service provider, e.g. Clearstream Banking AG (Xemac) Clearstream Banking SA (CmaX), Euroclear (AutoSelect), etc.
Cash settlement	TARGET2 and cash accounts with the ICSDs.

Part of the CCP-cleared GC pooling segment has grown strongly over recent years.[1] For example, the outstanding amounts of the GC Pooling segment of Eurex reached more than €160 billion at the end of 2012 (from €99 billion in 2009), representing annual growth of 25% on average from 2009 to 2012.

The involvement of a CCP and the automated cross-border collateral management systems of tri-party agents allows counterparties to mitigate counterparty risk and benefit from efficient and anonymous trading/post-trading. Some services also allow the re-use of general collateral with the central bank and against initial margin requirements resulting from other markets cleared, such as OTC derivatives, thereby addressing liquidity concerns. Finally, the services are typically also based on central bank eligibility and valuation rules.

1 In Europe, outstanding values in the CCP-cleared GC repo segment have typically increased during the financial crisis. When they have fallen, the decrease has been less pronounced than in other repo segments. Source: “Strengthening repo clearing and settlement arrangements”, CPSS Publications No 91, September 2010, available at http://www.bis.org/publ/cpss91.pdf

CCP GENERAL COLLATERAL (GC) POOLING BASKETS

This section presents the different baskets for CCP general collateral (GC) pooling transactions, together with some GC baskets for reference purposes. CCPs and/or electronic market places typically define the collateral eligibility requirements for CCP GC baskets. CCP GC repo baskets are not limited to domestic collateral, because (I)CSD links allow for the use of cross-border collateral. In addition, both domestic and cross-border participants are active in various GC markets.

The following are some of the baskets covered in this report:

- **Eurex Repo market[21] (Euro GC Pooling segment)**

  Description: As soon as a transaction is concluded on the Eurex Repo electronic trading system, Eurex Clearing steps in as the CCP and Clearstream Banking provides settlement services (via Clearstream Banking Frankfurt and Clearstream Banking Luxembourg) and collateral management services (via Xemac and Cmax).

  Collateral basket: The Euro GC Pooling market has different baskets available,[22] i.e. (i) the ECB Basket, (ii) the wider ECB EXTended Basket and (iii) the Equity Basket.

- **LCH.Clearnet Ltd[23] RepoClear (€GC and £GC segments)**

  Description: Trades (from voice broker transactions or screen/automated trading) are cleared by LCH.Clearnet Ltd and settled by CSDs (i.e. Euroclear Bank, Euroclear UK & Ireland and Clearstream Banking Frankfurt).

  Collateral basket: A wide range of collateral baskets have been set up for the purposes of Eurosystem operations (for €GC) and Bank of England operations (for £GC). €GC baskets contain euro-denominated government debt of euro area countries. The "combined" credit rating of a country (which is based on the ratings of all three major rating agencies – Moody's, S&P and Fitch) determines which basket can be used – the €GC AAA Basket, the €GC AA Basket or the €GC A Basket. £GC baskets contain UK government bonds.

- **LCH.Clearnet SA €GCPlus**

  Description: LCH.Clearnet SA launched a project to offer CCP-cleared repos against GC baskets. Trades from electronic trading platforms, such as BrokerTec Europe (ICAP), MTS and Tullet-Prebon will be cleared by LCH.Clearnet SA, which is connected to the settlement and collateral management systems of Euroclear Bank and ESES.[24]

  Collateral basket: It is expected that the following baskets of collateral eligible for use in Eurosystem operations will be created: €GCPlus Basket No 1, which will include securities that meet the LCR criteria, and €GCPlus Basket No 2, which will include securities eligible for use in Eurosystem operations.

CC&G will also launch a service for cleared repos conducted against GC baskets by the first quarter of 2014. The new service will be supported by the collateral management and settlement services provided by Monte Titoli (X-COM project). It is expected that the baskets will be composed of

21 Eurex Repo (trading), Eurex Clearing (clearing and collateral management) and Clearstream (settlement and operational collateral management) are all entities of the Deutsche Börse Group, and jointly operate the Eurex Euro Repo Market, including the Euro GC Pooling segment.

22 Collateral in the Euro GC Pooling baskets can be (re)used in central bank credit operations of the Deutsche Bundesbank (i.e. collateral in the ECB basket) and against initial margin requirements resulting from other markets cleared, such as the OTC derivatives market.

23 LCH.Clearnet Group is the holding company for LCH.Clearnet SA (the CCP incorporated in France) and LCH.Clearnet Ltd (the CCP incorporated in the United Kingdom).

24 Euroclear Settlement for Euronext-zone Securities (ESES) is the integrated settlement platform of Euroclear for stock exchange transactions on NYSE Euronext Brussels, Paris and Amsterdam and for off-exchange transactions in securities traded on the stock exchange (OTC operations).

government bonds (sovereign debt securities), supranational bonds, corporate securities, local authority bonds and securitisation debt securities.

In addition to the above-mentioned CCP-cleared repo services, there is also a market initiative[25] to establish CCP/(I)CSD triparty settlement interoperability based on common collateral basket requirements, but that is outside the scope of this report.

The tables below provide a general overview of the eligible collateral for the different arrangements. The baskets generally include a broad range of securities as eligible assets. In many cases, the ranges are based on the local central bank's list of eligibility criteria. Collateral in the baskets is subject to haircuts, which are established and adjusted frequently by CCPs following economic and financial developments. The applicable haircuts are not included in the tables below, but are posted on the websites of the CCPs.

The ECB Basket includes assets that also meet the requirements of the LCR within the current scope of CRD IV (Basel III).

Table 5 Eurex Repo market – Euro GC Pooling segment

GC Pooling ECB Basket	GC Pooling EXTended Basket	GC Pooling Equity Basket
Includes approximately 7,500 securities eligible for use in Eurosystem operations	Includes more than 23,000 securities eligible for use in Eurosystem operations	Includes the top 50 selection of the HDAX (i.e. the highest traded volume in Xetra)
Around 2,500 instruments of: • Central banks • Central governments • Regional/local governments • Supranationals Around 5,000 traditional and Jumbo "Pfandbriefe"-style instruments of: • Credit institutions • Agency credit institutions	Around 3,000 instruments of: • Central banks • Central governments • Regional/local governments • Supranationals Around 5,000 traditional and Jumbo "Pfandbriefe"-style instruments of: • Credit institutions • Agency credit institutions • Corporations and other issuers Around 14,000 instruments of: • Credit institutions • Agency credit institutions • Agency – non-credit institutions • Corporations and other issuers	Changes to the composition of the basket are announced around the eighth calendar day of each month and take effect on the fifteenth day
Assets must have a minimum rating of A-/A3 (i.e. assets rated below "A-/A3" are not eligible)	Assets are rated according to the Eurosystem eligibility criteria	
Location of the bond issuance: AT, BE, DE, NL, FR, SI and international Eurobonds (XS ISINs)	Location of the bond issuance: AT, BE, CY, FI, FR, DE, IE, IT, MT, SI, ES, NL and international Eurobonds (XS ISINs)	Country of issuance: DE
The following are excluded (by definition): Eurosystem eligible uncovered bank bonds, corporate bonds and ABS	The following are excluded (by definition): ABS and certain groups of issuers in combination with the place of issuance being IT, IE or ES	
The bond issuer must be established in the EEA or in one of the non-EEA G10 countries (i.e. the United States, Canada, Japan or Switzerland)[1)]	The bond issuer must be established in the EEA or in one of the non-EEA G10 countries (i.e. the United States, Canada, Japan or Switzerland)	

1) The locations of issue of all bonds of ESM/EFSF programme countries are excluded. See http://www.eurexrepo.com/blob/repo-en/145266-158156/158154/4/data/basket_definition.pdf

25 For example, see the presentation entitled "European repo market requests for interoperability in CCPs" provided by the European Repo Committee which is available on the ECB's website: http://www.ecb.int/paym/groups/pdf/ERC_EBF_request_re_interoperability.pdf

The CCP GC collateral baskets of Eurex Repo Euro GC Pooling, LCH.Clearnet Ltd's RepoClear €GC and LCH.Clearnet SA's planned €GCPlus have some features in common (see Table 7). All the initiatives have one basket which contains the most liquid collateral and meets specific customer requirements (referred to as the "narrow" basket) and another basket containing a broader range of collateral (the "broader" basket).

Table 6 LCH.Clearnet Ltd RepoClear (€GC and £GC segments) and LCH.Clearnet SA (€GCPlus)

RepoClear €GC	RepoClear £GC	Collateral Basket with Pledge
Includes approximately 880 securities eligible for use in Eurosystem operations	Includes approximately 70 securities eligible for use in Bank of England operations	Will include approximately 15,000 securities eligible for use in Eurosystem operations
Set of instruments: • Pan-European government baskets	Set of instruments: • UK government bonds	2,500 to 3,000 instruments of: Basket No 1 (collateral that also complies with the LCR requirements) • C1: Central governmentand debt issued by national central banks • C2: Local and regional government debt, jumbo covered bonds, agency and supranational debt. • C3: Covered bonds, multicédulas and debt instruments issued by corporations Basket No 2 (collateral eligible for use in Eurosystem operations) • The same instruments as included in Basket No 1 • C4: Credit institutions' debt instruments • (uncovered), including bank certificates of deposit
Assets have a minimum rating requirement of • Basket 1: AAA- and above • Basket 2: AA- and above • Euro-denominated debt of the following governments: Germany France The Netherlands Spain Italy Belgium	Assets have a minimum rating requirement of the sovereign rating of the UK government	Assets have a minimum rating requirement of Basket No 1: • C1: A- • C2: AA- • C3: AAA- Basket No 2: BBBLocation
Location of the bond issuance: AT, BE, FI, FR, DE, IT, LU, NL, SK, ES	Location of the bond issuance: UK	Location of the bond issuance: this depends on the eligibility requirements of the baskets, so accepted locations could be fewer but not more than the locations of bond issuance of the list of collateral eligible for use in Eurosystem operations (there is no pre-determined list of accepted locations of bond issuance)
Assets are excluded according to the minimum rating requirements	Stripped bonds are excluded	The following are excluded: assets in the L1E liquidity class from the Eurosystem, as well as callable, puttable and sinkable securities
The bond issuer must be established in the euro area	The bond issuer must be established in the United Kingdom	The bond issuer must be established in an accepted location. Such locations will depend on the eligibility requirements of the baskets, so there could be fewer but not more than the bond issuer locations included on the ECB's list of eligible collateral (there is no predetermined list of eligible bond)

Table 7 Frameworks for the underlying collateral for CCP-cleared repos

Collateral	LCH.Clearnet SA		Eurex Clearing			LCH.Clearnet Ltd		CC&G		MEFF
	€GC Plus Basket No1	€GC Plus Basket No2	ECB Basket	ECB EXT Basket	Equity Basket	Repo Clear €GC	Repo Clear £GC	No1	No 2	
Marketable assets										
Debt instruments issued by:										
Central governments	√	√	√	√		√	√	√	√	√
Central banks	√	√	√	√					√	
Public sector institutions other than central governments	√	√	√	√					√	
Supranational institutions	√	√	√	√					√	
Credit institutions (covered bonds)	√	√	√	√					√	
Credit institutions (excluding covered bonds)		√		√					√	
Corporations (other than credit institutions)		√		√					√	
Asset-backed securities										
Equities					√					
Money market funds										
Gold										
Non-marketable assets										
Cash including fixed term deposits from eligible counterparties										
Credit claims (bank loans)										
Non-marketable retail mortgage backed debt instruments										

The more liquid, "narrow" baskets (i.e. the ECB basket, €GCPlus Basket No 1 and €GC) have the following characteristics and requirements. First, they all include the collateral of the central government, central bank and supranational institutions, as well as covered bonds. Second, the assets in these baskets have a minimum combined credit rating of A-.[26] Third, they all include collateral for which the location of the bond issuance is AT, BE, DE, NL, FR or SI, as well as XS ISINs. Finally, collateral in the baskets is subject to concentration limits (which are typically related to the category of instruments, the product/type of instrument and the issuer). Collateral in the "narrow" baskets can be used for credit operations with the central bank, the trading of GC repos and CCP margin collateralisation.

The collateral baskets which comprise a broader range of collateral (e.g. the ECB EXT Basket and €GCPlus Basket No 2) include a wider list of securities. In addition to the narrow set of collateral, they also include uncovered debt instruments of credit institutions and debt instruments issued by corporations[27]. The minimum rating of the assets is also lower (currently BBB-) and more countries are included in the list of accepted locations of the bond issuance. Finally, concentration limits are

26 In €GC there are three baskets for assets with different credit ratings: a basket for assets with a rating of A-, a basket for assets with a rating of AA- and above, and a basket for assets with a rating of AAA- and above.

27 Debt instruments issued by corporations are also included in €GCPlus Basket No 1.

also applied to the broader baskets (over the wider list of securities and issuers). CCPs exclude certain assets from the broader baskets (such as ABS).[28]

There are some CCP-cleared GC repo baskets, for instance the GC collateral baskets of CC&G and MEFF, which serve specific GC repo markets for their domestic government bonds (i.e. Italian and Spanish government bonds). Other CCP GC baskets, such as the GC Pooling Equity Basket, have been set up to meet specific customer needs. Equities are excluded from the other baskets listed above.

REQUIREMENTS OF CCP GC POOLING BASKETS

Assets in the baskets are subject to additional restrictions because of risk management considerations. In particular, CCPs (and/or trading platforms) typically impose additional requirements on repo transactions related to the geographic origin of the counterparty, the collateral or both.

- **Type of issuer/debtor:** Central government debt is broadly accepted in all the baskets but many limit the acceptance of other securities.

- **Haircut:** In accordance with EMIR, CCPs are required to establish prudent valuation practices and develop haircuts that are regularly tested and that take into account stressed market conditions. For each collateral asset, the haircut should be determined taking into consideration the relevant criteria, including (a) the type of asset and level of credit risk associated with the financial instrument based on an internal assessment by the CCP. In performing such assessments the CCP shall employ a defined and objective methodology that does not rely solely on external opinions and that takes into consideration the risk arising from the issuer's country of residence; (b) the maturity of the asset; (c) the historical and hypothetical future price volatility of the asset in stressed market conditions; (d) the liquidity of the underlying market, including bid/ask spreads; (e) the foreign exchange risk, if any; and (f) wrong-way risk.

  In the GC collateral baskets of Eurex Repo Euro GC Pooling and LCH.Clearnet SA's €GCPlus, haircuts apply to individual securities and vary from 0.5% to around 50%.

- **Credit standards:** CCPs are required to limit the assets they routinely accept as collateral to those with low credit, liquidity and market risks. The regulations do not define how the credit, liquidity and market risks posed by the collateral assets should be evaluated, but some CCPs impose minimum credit standards for the acceptance of collateral assets.

  For the ECB Basket of Eurex Repo Euro GC Pooling, a minimum rating of A-/A3 is required, whereas the minimum rating for its ECB EXT Basket is linked to the ECB eligibility criteria.

The collateral in the CCP GC baskets is also subject to **concentration limits**. However, concentration limits differ across the various arrangements. In some cases there are concentration limits related to the ratings of the issuance/issuer by category of collateral (or group of collateral) to limit the exposure. For example, covered bonds with a AA rating can only comprise up to 20% of the total collateral in the €GCPlus baskets. Concentration limits can also apply to the product category. For example, all covered bonds and jumbo bonds must not exceed 40% of the total collateral in the

28 For example, the ECB EXT Basket excludes (Treasury) bills, commercial paper and certificates of deposit issued by corporate issuers and non-agency credit institutions, as well as all assets defined as ABS/mortgage-backed securities and other securitised bonds.

€GCPlus baskets. Finally, concentration limits can apply to the issuer. For example, the collateral of regional governments can make up to 20% of the total collateral in the €GCPlus baskets.

CCPs also apply **close links controls**, i.e. participants are not allowed to post their own debt or equity securities, or the debt or equity of companies closely linked to them, as collateral. In accordance with EMIR, a close link is defined as two or more natural or legal persons being permanently linked by (a) participation, by way of direct ownership or control, of 20% or more of the voting rights or capital of an undertaking; or (b) control or a similar relationship between any natural or legal person and an undertaking or a subsidiary. Except for covered bonds, any securities of any participants of GC pooling baskets which fall within the group of own issue offering or close link assets are excluded from such baskets.

2.3.2 MARGIN COLLATERAL FRAMEWORKS (FOR CENTRALLY CLEARED REPOS AND OTC DERIVATIVES)

For centrally cleared repos and OTC derivatives, CCPs accept collateral in connection with margin requirements and default fund contributions. This section presents an overview of the collateral accepted by selected CCPs (i.e. LCH.Clearnet Ltd, LCH.Clearnet SA, CME Clearing Europe, Eurex Clearing, ICE Clear Europe, CC&G, MEFF and NASDAQ OMX Nordic).

For some CCPs, the collateral framework for margin collateral applies across all markets and asset classes (repos and OTC derivatives). For example, Eurex Clearing's collateral framework is applicable to EurexOTC Clear and other cleared markets, such as Eurex Listed Derivatives, Eurex Bonds, Eurex Repo, ISE, Xetra/Frankfurt Stock Exchange and EEX.

COLLATERAL FOR INITIAL MARGIN REQUIREMENTS

Initial margin is designed to cover any potential losses or costs of liquidation that CCPs may have to bear in the event of the default of a clearing member.

This section presents the asset classes accepted as initial margin by selected CCPs.[29] In all cases, CCPs accept central government debt and cash as the main assets for initial margin (but different haircuts apply). In addition, they typically accept central government debt from selected sovereigns (e.g. government bonds denominated in USD, GBP, DKK, NOK, SEK, AUD, CAD and JPY). Moreover, cash payments can in many cases be made in both domestic and foreign currencies. For example, Eurex Clearing accepts cash collateral in four currencies: EUR, CHF, GBP and USD.

Acceptance of other securities and types of assets varies. In particular, securities issued by governmental agencies are accepted by only a few CCPs, e.g. LCH.Clearnet Ltd and Eurex Clearing. Securities issued by local governments and corporate bonds are accepted by Eurex Clearing, while government-guaranteed bonds are accepted by LCH.Clearnet Ltd. Corporate bonds are accepted by only a limited number of CCPs. Equities are excluded in many cases (e.g. by LCH.Clearnet Ltd), while some CCPs (e.g. Eurex Clearing, LCH.Clearnet SA and CC&G) accept equities subject to limitations (i.e. haircuts, concentration limits and other requirements, such as being part of a leading market index). Some CCPs accept gold as collateral for margin purposes

29 In the case of CC&G, the collateral requirements for initial margin are based on the requirements applicable to the "New MIC" market operated by the e-MID trading platform, i.e. the financial instruments eligible to be deposited comprise government bonds, corporate bonds and asset-backed securities held at Monte Titoli and eligible for Eurosystem operations, denominated in euro, whose issuer is a euro area country and with a minimum rating of BBB- (Fitch) and/or BBB- (S&P) and/or Baa3 (Moody's). To be eligible, the ABS must be class A, except those where the underlying assets are other ABS or credit-linked notes or similar credit instruments resulting from the transfer of credit risk through credit derivatives.

Table 8 Initial margin

	Eurex Clearing	LCH. Clearnet Ltd (SwapClear, ForexClear RepoClear)	LCH. Clearnet SA (CDSClear Bonds, Repos)	CME Clearing Europe	ICE Clear Europe	CC&G	MEFF	NASD AQ OMX Nordic
Securities issued by:								
– Central governments	√	√	√	√	√	√	√	√
– Government-guaranteed bonds	√	√						
– Local and regional government	√							
– Public agencies	√	√						√
– Supranational institutions	√							
– Credit institutions (covered bonds)	√							√
– Credit institutions (excluding covered bonds)	√							
– Corporations (other than credit institutions)	√							
Asset-backed securities								
Equities	√						√	√
Exchange-traded funds								√
Money market funds								
Gold	√				√			
Cash	√	√	√	√	√	√	√	√

(e.g. gold certificates are accepted by Eurex Clearing, while (physical) gold bullion is accepted by LCH.Clearnet Ltd, ICE Clear Europe and CME Clearing Europe). Bank guarantees are accepted for initial margin by MEFF and LCH.Clearnet SA under specific conditions.

CCPs apply a number of restrictions to the collateral accepted as initial margin. These requirements are set out below.

COLLATERAL FOR VARIATION MARGIN REQUIREMENTS

Variation margin is collected by a CCP to reflect its current exposures resulting from actual changes in market prices. CCPs typically calculate and collect variation margin at least daily to limit the build-up of current exposures. The table below shows that cash is the only asset accepted by all of the selected CCPs.

The currencies of cash collateral vary and are related to the products cleared by the respective CCP.

COLLATERAL FOR DEFAULT FUND CONTRIBUTIONS

Default funds serve as a mutual guarantee in case of the default of a member institution and are used to cover losses in extreme circumstances. The table below presents a comparison of the asset classes that are accepted for contributions to the default fund established by selected CCPs.

CME Clearing Europe and Eurex Clearing use collateral criteria similar to those used for their initial margin collateral. LCH.Clearnet SA only accepts cash and guarantees issued by certain central banks as collateral. ICE Clear Europe excludes gold bullion from the collateral assets accepted for initial margin.

Table 9 Variation margin

LCH. Clearnet Ltd	CME Clearing Europe	Eurex Clearing	LCH. Clearnet SA	ICE Clear Europe	CC&G	MEFF	NASDAQ OMX Nordic
Cash Portfolio currency	**Cash** USD, GBP and EUR Substitution with eligible securities is allowed subsequently.	**Cash** In the currency of the contract, which can be USD, GBP, EUR or CHF	**Cash** EUR	**Cash** In the currency of the contract	**Cash** EUR	**Cash** EUR	**Cash** SEK, EUR, DKK, NOK, GBP and USD

Cash is accepted by all of the selected CCPs. The acceptable currencies typically correspond to those of the derivative products the CCPs clear. Securities are accepted by some CCPs, i.e. CME Clearing Europe, Eurex Clearing and ICE Clear Europe. Equities and commodities (gold) are accepted by Eurex Clearing.

REQUIREMENTS FOR INITIAL MARGIN COLLATERAL ACCEPTED BY CCPs

All of the selected CCPs have defined a set of requirements that have to be fulfilled for collateral to be accepted (see Table 11), which are related to geography, currency and type of securities, and to gold.

Table 10 Default fund contributions

LCH. Clearnet Ltd	CME Clearing Europe	Eurex Clearing	LCH. Clearnet SA	ICE Clear Europe	CC&G	NASDAQ OMXNordic
Cash – GBP	Cash – USD, GBP and EUR	Cash – USD, GBP, EUR and CHF	Cash – USD, GBP and EUR	Cash – EUR	Cash – EUR	Cash – SEK, EUR, DKK, NOK, GBP and USD
	Securities • Sovereign Debt securities issued in the domestic currency (FR, DE, UK and US)	Securities • Bonds of the Federal and state governments in EUR and CHF • Local government bonds and agency debt in EUR and CHF • Corporate and other bonds in EUR and CHF • Foreign government bonds. Denominated in USD, GBP, DKK NOK, SEK, AUD, CAD and JPY		Securities • European government securities (AT, BE, FI, FR, DE, IT, NL, ES, SE, CH and UK)		Securities • Government debt instruments (DK, FI, DE, NO, SE and UK)
		Equities in EUR and CHF (limited to selected indices: DAX, EuroStoxx50 and Top 50 HDAX)				
			Guarantees issued by DNB and NBB		Guarantees (up to a maximum of 40% of the contribution fee)	
		Xetra-Gold bearer bond				

Table 11 Requirements for initial margin collateral accepted by CCPs

	LCH. Clearnet Ltd	CME Clearing Europe	Eurex Clearing	LCH. Clearnet SA
Geography – country of issue for accepting government bonds	US, AU, AT, BE, CA, DK, FI, FR, DE, IT, JP, LU, NL, NO, ES, SE and UK	FR, DE, UK and US	Euro area, CH, US, UK, DM, NO, SE, AU, CA and JP	FR, DE, BE, NL, IT, PT, ES, US and UK
Currency for cash collateral	USD, GBP, EUR, CAD, CHF, JPY, SEK, DKK and NOK	USD, GBP and EUR	USD, GBP, EUR and CHF	USD, GBP and EUR
Type of securities	√	• Zero coupon bonds and stripped bonds are excluded • Government securities should be issued in the home country of the issuer and be denominated in the domestic currency as well as governmental agency securities and government guaranteed securities	√ • Securities must be traded on the exchange with a market price to be accepted	√ • Minimum nominal value for US debts: USD 250,000; for UK debts: GBP 100,000; for others: €100,000
Relationship with the issuer of the securities			√ Excludes own issues and close link securities	√ Excludes own issues and close link securities
Requirements for gold			√ Limited to euro-denominated zero coupon bonds issued by Deutsche Börse Commodities GmbH	√ Limited to USD-denominated London Good Delivery Bars

	ICE Clear Europe	CC&G	MEFF	NASDAQ OMX Nordic
Geography – country of issue for accepting government bonds	AT, BE, FI, CA, FR, DE, IT, NL, ES, SE, CH, UK and US	IT, FR and DE	ES, DE, FR, UK, NE, BE, AU and US	AT, DE, DK, FI, FR, NL, NO, SE and UK
Currency for cash collateral	USD, GBP and EUR	EUR	EUR and USD	SEK, EUR, DKK, NOK, GBP and USD
Type of securities				√ • Index-linked bonds are not accepted • Minimum outstanding amounts of DKK 80 million, €10 million, GBP 10 million, NOK 80 million, SEK 100 million and USD 14 million per security • Minimum rating for government bonds: AA+/Aa1; for covered bonds: AAA/Aaa
Relationship with the issuer of the securities				√ Excludes own issues and close link securities
Requirements for gold				

- **Type of securities:** CCPs have established some specific requirements for accepting securities. For example, LCH.Clearnet Ltd does not accept zero coupon bonds or stripped bonds. It also stipulates that government securities, governmental agency securities and government-guaranteed securities should be issued in the home country of the issuer and be denominated in the domestic currency of that country. Eurex Clearing will only accept eligible securities traded on the exchange with a market price. LCH.Clearnet SA requires a minimum nominal value for accepting government debt securities.

- **Requirements for gold:** Eurex Clearing and ICE Clear Europe accept certain forms of gold as collateral for initial margin. In particular, Eurex Clearing accepts the Xetra-Gold bearer bond, which is a euro-denominated zero coupon bond issued by Deutsche Börse Commodities GmbH. ICE Clear Europe accepts gold bullion in the form of London Good Delivery Bars denominated in US dollars.

- **Geography:** All of the selected CCPs accept foreign assets denominated in major currencies and domestic assets issued in the country in which the respective CCP is established, albeit to varying degrees. In the case of central government debt, the CCPs accept securities issued in the EU and the United States. Government debt issued by other major countries, such as Canada, Australia and Japan, is accepted by some CCPs (i.e. LCH.Clearnet Ltd, Eurex Clearing and ICE Clear Europe). Conversely, acceptable agency debt is limited to that of issuers in the United States and some European countries (e.g. Germany and Switzerland).

- **Currency criteria:** All of the selected CCPs except CC&G (which only accepts EUR) accept foreign currencies as cash collateral and foreign assets denominated in major currencies, albeit to varying degrees. EUR, USD and GBP are accepted by all the CCPs except MEFF (which only accepts EUR and USD). Eurex Clearing also accepts CHF and LCH.Clearnet Ltd accepts a broader range of currencies.

In addition to the above requirements, CCPs have also established risk management requirements in terms of haircuts, concentration limits and the issuers of securities.

2.3.3 MARGIN COLLATERAL FRAMEWORKS (FOR BILATERAL/NON-CENTRALLY CLEARED OTC DERIVATIVES)

The BCBS and IOSCO have issued a near-final proposal on margin requirements for non-centrally cleared derivatives.[30] The main elements are set forth in the form of key principles. One feature that is relevant for this report is the requirement for all financial firms and systemically important non-financial entities that engage in non-centrally cleared derivatives to exchange initial and variation margin, as appropriate, to cover the counterparty risks posed by such transactions. In addition, it is specified that assets collected as collateral for initial and variation margin purposes should be capable of being liquidated in a reasonable amount of time in order to generate proceeds that would provide sufficient protection for collecting entities covered by the requirements against losses on non-centrally cleared derivatives in the event of a counterparty default. These assets should therefore be highly liquid and should, after accounting for an appropriate haircut, hold their value in times of financial stress.

30 See http://www.bis.org/publ/bcbs242.htm (15 February 2013).

In the EU, EMIR stipulates that financial and non-financial counterparties who enter into an OTC derivative contract which is not cleared by a CCP shall measure, monitor and mitigate operational risk and counterparty credit risk (e.g. through the timely confirmation, where available via electronic means, of the terms of the OTC derivative contract). Counterparties must mark-to-market on a daily basis the value of outstanding contracts and must have risk management procedures that require the timely, accurate and appropriately segregated exchange of collateral. EMIR also specifies additional requirements for intragroup transactions. In addition, the regulatory technical standards drawn up by ESMA provide further details on non-CCP-cleared OTC derivative transactions. For example, counterparties shall agree on portfolio reconciliation arrangements prior to the conclusion of the OTC derivative contract (i.e. the portfolio reconciliation must cover key trade terms that identify each particular OTC derivative contract and shall include at least the valuation attributed to each contract). The technical standards also provide detailed requirements for portfolio compression, dispute resolution, marking-to-market models and intragroup transactions.

There are also requirements which could have an indirect impact on non-centrally cleared OTC derivatives. In particular, the Basel III capital requirements (June 2011) impose higher capital requirements for non-CCP-cleared OTC derivative transactions than for centrally cleared derivatives. Moreover, exposures of financial institutions to CCPs (under certain conditions) will be subject to a low risk weight (a risk weight of 2% is proposed). In addition, default exposures to CCPs will be subject to risk-sensitive capital requirements.

3 COMPARISON OF DIFFERENT COLLATERAL FRAMEWORKS

This section provides a horizontal analysis of the similarities and differences between the aforementioned frameworks. It also investigates some of the underlying reasons for the differences and concludes with a brief analysis of the re-use of collateral under the different frameworks.

3.1 COMPARISON OF CENTRAL BANK FRAMEWORKS

When the frameworks of the central banks are compared, a number of similarities and differences can be observed. There is a strong similarity between the central bank frameworks in terms of the acceptance of collateral, with the exception of non-marketable assets. They differ more in terms of the type of issuer of marketable assets, credit standards, the place of establishment of issuers and currency.

The differences between central bank frameworks regarding the eligibility of collateral can be attributed to the external environments of each central bank and the results of their policy choice given these external environments. The following aspects of the external environment may have a bearing:

- **Institutional arrangements and statutory requirements of central banks:** The acceptance of collateral depends, among other matters, on the arrangements and institutional set-up of the central bank. In particular, legal acts, such as the Federal Reserve Act in the United States, require open market operations to be covered by certain assets (such as US Treasury securities, agency securities and agency mortgage-backed securities). The statutes of, for example, the Eurosystem, the Bank of England and the Bank of Japan are not so prescriptive as regards requirements related to eligible collateral. In the case of the Eurosystem, Article 18.1 of the Statute of the ESCB stipulates that all Eurosystem credit operations must be based on "adequate" collateral.

- **Depth of capital markets and domestic government bond markets:** Central banks in jurisdictions with relatively small capital markets rely less on outright purchase operations in order to avoid any distortions in the capital market. The size of temporary market operations could also depend on the size of the domestic government bond market. Finally, the structural liquidity needs of the banking system may also affect the size and frequency of money market operations of central banks.

- **Structure of the banking sector:** Central banks with a wider range of eligible counterparties typically accept a more diversified range of collateral in order to ensure equal treatment of their counterparties. The Eurosystem, for example, allows a broad range of counterparties access to its standing facilities and open market operations against a wide range of collateral, taking into account the differences in countries' banking structures. On the other hand, the US Federal Reserve System has traditionally established relationships with a small group of qualified primary dealers and financial institutions.

Given these external environments, central banks make choices concerning their own operational frameworks, leading to differences between their respective collateral frameworks, especially related to (i) the type of assets accepted, (ii) foreign currency assets accepted and (iii) other collateral eligibility criteria (related to the rating and place of establishment of the issuer/guarantor).

Regarding the **type of assets**, some central banks accept a wider range of assets than others. For example, central banks in the EU (i.e. the Eurosystem, the Bank of England and Sveriges Riksbank),

Switzerland (the Swiss National Bank) and Japan (the Bank of Japan) accept a wide range of asset classes, compared with the US Federal Reserve System, which accepts a narrower range for its open market operations (however, it accepts a wider range of assets for collateralised discount window loans and the provision of intraday credit). There are further differences for marketable and non-marketable assets:

- Regarding **marketable assets**, central banks either apply a uniform collateral eligibility approach for all their monetary policy operations (e.g. the Eurosystem, Sveriges Riksbank, the Swiss National Bank and the Bank of Japan), or take a more differentiated approach for different types of operation (e.g. the US Federal Reserve System and the Bank of England).[31] Regarding the type of issuer, almost all central banks accept central governments, central banks, public sector institutions and supranational institutions. Debt instruments issued by credit institutions are not accepted in all cases, or are only accepted by some central banks if guaranteed by the central (or in some cases local) government (e.g. the Bank of England, the Bank of Japan and Sveriges Riksbank). The US Federal Reserve System, Sveriges Riksbank and the Swiss National Bank do not accept ABS (for their respective main monetary policy operations). These differences could be related to the different underlying market structures, i.e. the greater importance of bank-based financing (and debt) in certain countries; the former separation of commercial and investment banking (in the United States; the separation still applies to Japan); the universal banking tradition in Europe (which could alter in the future); and/or the concentration of the banking industry (e.g. in Switzerland, the United Kingdom and Sweden).

- In relation to **non-marketable assets**, some central banks do not accept credit claims as eligible collateral for monetary policy operations, but will only accept them in the discount window (e.g. the US Federal Reserve System and the Bank of England). Other central banks widely accept such assets (e.g. the Eurosystem and the Bank of Japan). The different approaches of the individual central banks are in part related to the different underlying market structures (as in the case of marketable assets above) but are also related to central bank policy objectives. For example, the Eurosystem considers that its wide acceptance of credit claims fosters bank lending, especially to small and medium-sized enterprises and private households. More specifically, the broader acceptance of such assets by the Eurosystem is based on the principle of granting access to monetary policy and intraday credit operations to a broad range of counterparties and the desire to foster the smooth functioning of the euro area financial system by increasing the liquidity of an entire asset class, such as bank loans, on the balance sheets of banks. This may also indirectly foster analogous developments in private transactions.

In the case of **foreign currency-denominated assets accepted**, most central banks accept collateral denominated in a wide range of currencies. By contrast, in general, the Eurosystem only accepts collateral denominated in euro, but it has implemented temporary extensions to the list of eligible collateral to include certain assets denominated in USD, GBP and JPY, which is issued and held in the euro area.

Concerning **other collateral eligibility criteria**, central banks have different requirements in terms of (i) credit standards and (ii) the place of establishment of issuers/guarantors.

- Regarding credit standards, all central banks generally require that these be high. Most central banks also set minimum credit rating thresholds (minimum rating requirements) for issuers, but

31 See the BIS, "Central bank collateral frameworks and practices", March 2013.

many are implementing measures to reduce their reliance on credit assessments provided by external credit rating agencies. Some central banks do not set a minimum credit rating threshold (e.g. the US Federal Reserve System), although this is because the acceptance of collateral is limited to own government debts and government agencies debts.[32]

- In relation to the place of establishment of issuers/guarantors, almost all central bank frameworks require issuers to be domestic or established in G10 countries (e.g. the United States, Switzerland, Japan or Canada). For bank loans, in all cases debtors must be domestic. Some central banks (e.g. the Bank of England, the Swiss National Bank and Sveriges Riksbank) have broader acceptance criteria and do accept issuers established outside the local operating area.

Finally, regarding the **minimum haircuts** (or initial margins), all central banks periodically review the level and approach of haircuts applied to collateral.

3.2 COMPARISON OF REGULATORY FRAMEWORKS

A number of similarities and differences can be observed when comparing regulatory frameworks. There is a strong similarity between the regulatory frameworks regarding the acceptance of marketable debt assets, with the exception of debt securities issued by credit institutions and corporations (other than credit institutions) and ABS. Cash is also accepted under all the regulatory frameworks considered. The frameworks differ more where credit standards and the currency of the assets are concerned. The level of detail also differs. While the PFMIs are more conceptual in defining the eligibility of collateral, the other regulatory frameworks provide more detail. In particular, EMIR identifies the eligible assets by the type of assets and issuers. The Basel III LCR specifies eligible assets in two subsets of collateral (Level 1 and 2 assets).

The main similarities and differences identified when comparing regulatory frameworks are related to the scope of application of individual regulations (internationally active banks in the case of the Basel III LCR, CCPs in the case of EMIR and FMIs in the case of the PFMIs), the type of risks to be addressed (the liquidity risk of internationally active banks and the credit and liquidity risks of member institutions of CCPs and FMIs) and the geographical scope of the regulations (enforceable worldwide or regionally).

The following more detailed similarities and differences between the requirements of regulatory frameworks are identified: (i) the type of assets accepted, (ii) foreign currency assets accepted and (iii) other collateral eligibility criteria.

Regarding the **type of assets**, cash is eligible for use as collateral under all of the regulatory frameworks considered, whereas non-marketable assets are not eligible as collateral or as high quality liquid assets. Differences are identified between marketable assets and other assets, such as gold, equities and money market funds.

- Marketable debt assets issued by a central government or a central bank are eligible as collateral under all of the regulatory frameworks considered. Marketable debt securities issued by supranational institutions are also accepted, while debt securities issued by other public sector

32 In addition, the Federal Reserve System does not have ratings requirements for primary dealers, but there are other requirements (such as net capital requirements, first priority interest in the securities, and assets should be free of adverse claims of third parties) and counterparties are monitored carefully.

entities are accepted under EMIR. The acceptance of other marketable assets differs, however. For example, covered bonds and corporate bonds are accepted under the PFMIs and the Basel III LCR (as Level 2 assets), and these assets are also accepted as collateral under EMIR if they are guaranteed by a government, a central bank or a supranational institution. However, non-covered bank bonds are not eligible under the Basel III LCR. To give another example, ABS are accepted under the PFMIs, whereas retail mortgage-backed securities are eligible under the Basel III LCR as Level 2B assets.

- As regards to other assets, equities are accepted under the PFMIs and the Basel III LCR (as Level 2B assets). Under the PFMIs and EMIR gold is accepted as collateral, whereas the Basel III LCR exclude gold from the respective definitions of high quality liquid assets. Money market funds are eligible only under EMIR.

Regarding the **foreign currency assets accepted**, some conditions are stipulated under the regulatory frameworks. The PFMIs state that FMIs accepting foreign currency collateral should take account of the foreign exchange risk where the collateral is denominated in a currency other than that in which the exposure arises. EMIR also specifies some conditions related to foreign currency collateral. In particular, EMIR stipulates that (i) CCPs should demonstrate to the competent authorities with a high level of confidence that they are able to manage the risk related to the currency and (ii) the collateral required to cover a CCP's exposures should be denominated in the currency in which the CCP clears contracts. The Basel III LCR includes a narrow definition of eligible high quality liquid assets denominated in foreign currencies. More specifically, the LCR specifies that domestic or central bank debt securities issued in foreign currencies are eligible as collateral up to the amount of the collateral taker's stressed net cash outflows in that specific foreign currency stemming from the collateral taker's operations in the jurisdiction where the collateral taker's liquidity risk arises.

Concerning the **credit standards accepted**, only the Basel III LCR sets minimum credit standards for certain assets. In particular, Level 2 assets, which consist of two subsets of assets, should have the following credit standards: for Level 2A assets, the minimum credit ratings for eligible corporate debt securities and covered bonds are AA-; for Level 2B assets, an eligible retail mortgage-backed security must have a credit rating of AA. Corporate debt securities are eligible if they are rated between A+ and BBB-.

3.3 COMPARISON OF CCP FRAMEWORKS

This section presents the similarities and differences between the two types of CCP collateral framework: (i) the frameworks for underlying collateral for centrally cleared repos and (ii) the margin collateral frameworks for centrally cleared repos and OTC derivatives.

3.3.1 COLLATERAL FOR CENTRALLY CLEARED REPOS

When the frameworks for collateral underlying cleared repos are compared, a number of similarities and differences can be observed.

A CCP, by definition, concentrates exposures in the markets it clears. In order to manage the credit and liquidity risks of the member institutions that it assumes, a CCP establishes eligibility criteria, prudent valuation practices and haircuts (for both domestic and foreign assets). The pursuit of

operational efficiency and the applicable regulatory requirements may also have an impact on the design of a CCP's collateral framework.

The following is a more detailed description of the similarities and differences between the requirements of CCP frameworks:

In relation to the **type of assets accepted**, all of the baskets covered in this report accept only marketable debt assets.[33] In particular, all the "narrow" baskets accept public sector debt instruments and covered bonds, while the "broader" baskets also accept other debt instruments issued by credit institutions and corporations. Collateral for CCP-cleared GC repos that do not fall within CCP-cleared GC pooling arrangements is typically more restricted, comprising only central government debt.

The accepted **currency for collateral** is the currency of the underlying basket (and typically no foreign currency assets are accepted).

Regarding the **other collateral eligibility criteria**, all GC repo baskets in CCP-cleared GC pooling arrangements have set minimum credit standards for the issuers of debt instruments. The minimum credit standards for the narrow and broader baskets differ. Regarding the issuance of the collateral, all the selected baskets typically accept foreign and domestic assets which are issued in the country in which the CCP is established. The CCPs in the euro area accept collateral issued in the euro area. Typically, the issuer must be established in the EEA or in a non-EEA G10 country to be eligible for acceptance in the baskets. Finally, concentration limits are set for all the baskets.

3.3.2 MARGIN COLLATERAL FRAMEWORKS FOR CENTRALLY CLEARED REPOS AND OTC DERIVATIVES

A comparison of the margin collateral frameworks for centrally cleared repos and OTC derivatives confirms that cash is accepted in all the collateral subsets of the CCPs considered, i.e. cash is accepted as initial margin collateral, variation margin collateral and collateral default fund contributions.

On the issue of **initial margin collateral**, all of the CCPs considered accept cash in major currencies (including EUR, USD and GBP) and debt securities issued by the central governments of a limited number of countries (i.e. Germany, the United Kingdom and the United States). Some CCPs also accept other currencies and securities issued by other entities (including local governments, supranational institutions, corporations and credit institutions). Regarding **foreign currency assets accepted**, all of the CCPs considered accept assets denominated in major currencies. Regarding the **other collateral eligibility criteria**, CCPs typically manage their risks by using several tools, including valuation of collateral, haircuts, concentration limits, close link checks and counterparty requirements.

Regarding **variation margin collateral**, all of the CCPs considered accept only cash. EUR is accepted by all of the CCPs considered, whereas the range of currencies of other cash collateral varies according to the derivative products cleared by each CCP.

As regards collateral for **default fund contributions**, eligibility requirements are broadly the same as for initial margin collateral. However, certain assets are not eligible as collateral for default

33 Listed equities are accepted in the case of the equity basket.

fund contributions, including equities, commodities and debt securities issued by certain foreign governments. Cash collateral is typically also limited to the range of currencies cleared by the CCP.

A CCP may also use the collateral it holds for liquidity facilities with a central bank. CCPs therefore accept collateral from their members which is also eligible for use with the relevant central bank.

3.4 RE-USE OF COLLATERAL ACROSS THE DIFFERENT FRAMEWORKS

Collateral agreements may permit the receiving party to re-use collateral in the financial markets.

From a legal perspective, a distinction can be made between re-use (i.e. use of collateral that is owned by the collateral taker, having been received through the transfer of title, such as in a repo) and rehypothecation (i.e. use of collateral that is not owned by the collateral taker, having been received through a pledge). Box 4 provides further details.

Box 4

"RE-USE" VERSUS "REHYPOTHECATION"[1]

In a repo, the buyer becomes the owner of the collateral at the start of the transaction and can dispose of the collateral as and when he wishes. His right of "re-use" is not a right granted by the seller. It is an automatic right arising from property ownership.

Rehypothecation is an alternative name for "re-pledging". A party who receives a pledge of collateral is allowed to pledge the same collateral to a third-party. In a pledge, title to the collateral remains with the collateral giver. If the collateral giver grants a right of rehypothecation to the collateral taker, the collateral giver remains the owner but only until the collateral taker exercises his right. Rehypothecation is widely used by prime brokers involved in the collateralisation of derivatives transactions with hedge funds. Rehypothecation is regarded by prime brokers as essential to the economics of their business. In return for these rights of rehypothecation, they offer clients cheaper funding.

Source: ICMA website.

1 See http://www.icmagroup.org/Regulatory-Policy-and-Market-Practice/short-term-markets/Repo-Markets/frequently-asked-questions-on-repo/10-what-is-rehypothecation-of-collateral/

The ability to re-use assets is restricted by collateral eligibility frameworks and legal requirements.

Regarding central bank frameworks, there are typically no specific restrictions on re-use insofar as collateral is eligible according to the general collateral eligibility requirements and valuation rules of the central banks. Recent market developments (in particular the CCP-cleared GC pooling arrangements referred to earlier in this report) have facilitated the re-use of GC collateral with central banks. In these arrangements, the triparty collateral management service provider could handle the transfer of the collateral to the central bank.

Several requirements have been introduced under regulatory frameworks as a consequence of the financial crisis. In the United States, requirements related to rehypothecation have been drawn up (i.e. regulators allow prime brokers to rehypothecate customer collateral up to the value of 140% of a customer's borrowing). In the EU, the re-use and location of collateral is provided for in EMIR and the related ESMA technical standards. Regarding the re-use of collateral, EMIR specifies that CCPs shall invest their financial resources only in cash or in highly liquid financial instruments with minimal market and credit risk. This rule applies to both a CCP's own resources (e.g. capital including the retained earnings and reserves of the CCP) and other financial resources (e.g. the margins and default fund contributions of clearing members). The type of highly liquid assets in which a CCP can invest (such as government bonds, high quality corporate bonds and covered bonds) corresponds to the type of collateral deemed to be highly liquid, as determined in the ESMA regulatory technical standards. In addition, a CCP cannot invest its financial resources in its own securities or those of its parent undertaking or subsidiaries.

The re-use of collateral is also restricted by its location. In particular, EMIR specifies that collateral of clearing members should be deposited with operators of securities settlement systems or with a third party. The third party could be a central bank, an authorised credit institution or a financial institution of a third country. Where a CCP deposits assets with a third party, it shall ensure that the assets belonging to the clearing members are identifiable separately from the assets belonging to the CCP and from assets belonging to that third party. Furthermore, a CCP shall establish policies and procedures to ensure that the financial instruments in which its financial resources are invested remain sufficiently diversified (a CCP must determine concentration limits for its financial resources at the level of individual financial instruments, types of financial instruments, individual issuers, types of issuers and individual counterparties).

4 CONCLUSIONS

Based on the analysis provided in the previous sections, this chapter presents some conclusions as regards the similarities and differences that have been identified within and between the three types of frameworks and identifies potential issues that merit further consideration by policy-makers and/or market participants.

- First, the analysis has confirmed that central bank frameworks generally have the broadest eligibility criteria for collateral, even taking into account certain restrictions imposed by individual central banks as regards specific asset categories, issuers, credit standards and/or currencies.

- Second, regulatory frameworks differ somewhat as regards acceptance of marketable debt assets. Debt securities issued by a central government are the only collateral accepted by all of the regulatory frameworks considered, while acceptance differs in the case of uncovered bank bonds, corporate bonds, ABS and equities. Differences across regulatory frameworks also emerge as regards acceptable credit standards and currencies. While regulatory frameworks have very similar requirements for high-quality (liquid) assets, it is noted that the high-quality/highly liquid status of an asset is subject to change, particularly during periods of market stress or disruption.

- Third, CCP frameworks are typically the most restrictive of the frameworks considered, with respect to the margin requirements for centrally cleared repo and OTC derivatives, but, regarding the underlying collateral for CCP-cleared repos, the frameworks typically have common elements and are less restrictive. First, the underlying collateral only comprises marketable assets. Second, collateral baskets are composed of "narrow" baskets limited to public sector debt instruments and covered bonds, and a "broader" basket, which also includes uncovered bank debt and debt instruments issued by corporations. Margin collateral frameworks for centrally cleared repo and OTC derivatives, however, vary to some extent. In the case of the initial margin collateral frameworks of CCPs, some CCPs limit acceptance to assets issued by the central government, while others accept a broader range of assets (applying different haircuts and requirements). Variation margin collected by CCPs is in all cases in the form of cash. Default fund contributions are also mainly composed of cash, but some CCPs accept a wider range of securities (with varying haircuts and requirements).

- Fourth, the collateral requirements of CCPs are typically less restrictive for GC trading and funding services (e.g. Eurex GC Pooling and LCH.Clearnet SA €GCPlus). In particular, the eligibility requirements of the underlying collateral for CCP-cleared repos are consistent with the lists of eligible collateral of central banks to enable the collateral to be used with the central banks. This could enhance the liquidity and resilience of the repo market and increase the possibility of conducting longer-term repos.

- Fifth, these differences across frameworks could result in disruptions when the location of the collateral differs from the location where market participants need to raise liquidity (i.e. there is a need to be able to move collateral to the right place at the right time). Implementation of linkages or interoperability arrangements between clearing and settlement infrastructures could provide market participants with major opportunities to resolve these mismatches in a timely manner.

This report aims to provide **transparency** concerning the collateral eligibility requirements across various frameworks in order to reduce uncertainty and raise awareness of the complexity which market participants have to deal with in managing their funding and collateral arrangements. The detailed annexes to the report will be updated regularly. Finally, it is noted that this report presents the status quo of existing collateral frameworks and does not identify a need to harmonise risk management and collateral requirements. Diversification of collateral frameworks can rather be seen as a positive factor which enhances the resilience of market infrastructures.

FURTHER WORK

There is a need for further work on a number of specific aspects which will be launched as a follow-up to this report. The specific aspects to be addressed include an examination of collateral transformation services, an analysis of haircuts (e.g. valuation haircuts) applied across different collateral frameworks and a quantification of eligible collateral under the different collateral frameworks.

- Collateral transformation services are mainly being developed to transform ineligible collateral into eligible collateral (e.g. enabling participants to borrow government debt securities against corporate bonds or other collateral, which could then be accepted as collateral by a CCP). Different types of underlying transaction could be involved in these collateral transformation services, e.g. securities lending, repos, swaps, etc. Additionally, simultaneous transactions could be conducted, or two independent transactions could take place (e.g. involving a repo and a swap). Further work on these services by COGESI could focus on increasing transparency concerning the types of existing arrangements in the EU.

- Haircut practices, such as valuation haircuts, differ across collateral frameworks and also tend to change (e.g. in times of market stress).[34] Haircuts differ because of the need to balance a number of elements, such as the soundness of the collateral taker or collateral giver, the availability of adequate collateral and the need for flexibility to adapt to changing market conditions. In addition, regulatory requirements have been introduced regarding haircuts. Further work on haircuts will focus on the different practices in different markets and will consider the possibility of providing a general overview of the range of haircuts (although not the specific amounts, which are subject to change).

- The quantification of eligible collateral under the different frameworks could be given further consideration. So far, several studies have analysed the possible impact of regulatory requirements with respect to mandatory clearing by CCPs and the prospective need for highly liquid assets to meet the clearing requirements. Further information could be collected on eligible assets by framework (i.e. central bank frameworks, regulatory frameworks and CCP frameworks) and these sub-sets of assets could be compared with the overall availability of assets.

34 See "The role of margin requirements and haircuts in pro-cyclicality" (2010), Committee on the Global Financial System, Paper No 36.

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ANNEXES

1 EXTRACTS FROM REGULATORY FRAMEWORKS AND RELATED COLLATERAL AND ASSET REQUIREMENTS

1.1 CPSS-IOSCO PFMIs

"An FMI that requires collateral to manage its or its participants' credit exposure should accept collateral with low credit, liquidity, and market risks. An FMI should also set and enforce appropriately conservative haircuts and concentration limits." (Principle 5)

For the purpose of meeting its minimum liquid resource requirement, an FMI's qualifying liquid resources in each currency include cash at the central bank of issue and at creditworthy commercial banks, committed lines of credit, committed foreign exchange swaps, and committed repos, as well as highly marketable collateral held in custody and investments that are readily available and convertible into cash with prearranged and highly reliable funding arrangements, even in extreme but plausible market conditions. An FMI may supplement its qualifying liquid sources with other forms of liquid resources. These liquid resources should be in the form of assets that are likely to be saleable as collateral for lines of credit, swaps, or repos on an ad hoc basis following a default, even if this cannot be reliably prearranged or guaranteed in extreme market conditions.

1.2 EMIR AND RELATED REGULATORY TECHNICAL STANDARDS

"A CCP shall accept highly liquid collateral with minimal credit and market risk to cover its initial and ongoing exposure to its clearing members. For non-financial counterparties, a CCP may accept bank guarantees. […] A CCP may accept, where appropriate and sufficiently prudent, the underlying of the derivative contract or the financial instrument that originates the CCP exposure as collateral to cover its margin requirements." (Article 46)

Cash collateral: highly liquid collateral in the form of cash shall be denominated in one of the following currencies:

(a) a currency the risk of which the CCP can demonstrate with a high level of confidence to the competent authorities that it is able to manage;

(b) a currency in which the CCP clears transactions, in the limit of the collateral required to cover the CCP's exposures in that currency.

Highly liquid financial instruments: financial instruments can be considered highly liquid financial instruments, bearing minimal credit and market risk, if they are debt instruments (that meet the additional conditions described below) or transferable securities and money market instruments which meet each of the following conditions:

(a) the CCP can demonstrate that the financial instruments have been issued by an issuer that has a low credit risk, based upon an adequate internal assessment by the CCP;

(b) the CCP can demonstrate that the financial instruments have a low market risk, based upon an adequate internal assessment by the CCP;

(c) they are denominated in one of the following currencies:

   (i) a currency the risk of which the CCP can demonstrate that it is able to manage; (ii) a currency in which the CCP clears contracts, in the limit of the collateral required to cover the CCP's exposures in that currency;

(d) they are freely transferable and without any regulatory or legal constraint or third party claims that impair liquidation;

(e) they have an active outright sale or repurchase agreement market, with a diverse group of buyers and sellers, to which the CCP can demonstrate reliable access, including in stressed conditions;

(f) they have reliable price data published on a regular basis;

(g) they are not issued by:

   (i) the clearing member providing the collateral, or an entity that is part of the same group as the clearing member, except in the case of a covered bond and only where the assets backing that bond are appropriately segregated within a robust legal framework; (ii) a CCP or an entity that is part of the same group as the CCP; (iii) any entity whose business involves providing services critical to the functioning of the CCP, unless that entity is an EEA central bank or a central bank of issue of a currency in which the CCP has exposures;

(h) they are not otherwise subject to significant wrong-way risk.

If the highly liquid instruments are debt instruments (as mentioned above), they must meet each of the following conditions:

(a) they are issued or explicitly guaranteed by:

   (i) a government; (ii) a central bank; (iii) a multilateral development bank as listed under Section 4.2 of Part 1 of Annex VI to Directive 2006/48/EC; (iv) the European Financial Stability Facility or the European Stability Mechanism, where applicable;

(b) the CCP can demonstrate that they have a low credit and market risk, based upon an internal assessment by the CCP;

(c) the average time-to-maturity of the CCP's portfolio does not exceed two years;

(d) they are denominated in one of the following currencies:

   (i) a currency the risks of which the CCP can demonstrate with a high level of confidence that it is able to manage; or ii) a currency in which the CCP clears transactions, in the limit of the collateral received in that currency;

(e) they are freely transferable and without any regulatory or third party claims that would impair their liquidation;

(f) they have an active outright sale or repurchase agreement market, with a diverse group of buyers and sellers, including in stressed conditions, and to which the CCP has reliable access;

(g) reliable price data on these instruments are published on a regular basis.

Derivative contracts can also be considered highly liquid financial investments, bearing minimal credit and market risk, if they are entered into for the purpose of:

(a) hedging the portfolio of a clearing member in default as part of the CCP's default management procedure; or

(b) hedging currency risk arising from the CCP's liquidity management framework established in accordance with Chapter VIII of the regulatory technical standards on requirements for central counterparties.

BANK GUARANTEES

A commercial bank guarantee, subject to the limits agreed with the competent authority, shall meet the following conditions:

(a) it is issued to guarantee a non-financial clearing member;

(b) it has been issued by an issuer that the CCP can demonstrate has a low credit risk, based upon an adequate internal assessment by the CCP;

(c) it is denominated in one of the following currencies:
    (i) a currency the risk of which the CCP can demonstrate that it is able to adequately manage; (b) a currency in which the CCP clears contracts, in the limit of the collateral required to cover the CCP's exposures in that currency;

(d) it is irrevocable and unconditional and the issuer cannot rely on any legal or contractual exemption or defence to oppose the payment of the guarantee;

(e) it can be honoured, on demand, within the period of liquidation of the portfolio of the defaulting clearing member who provides it, without any regulatory, legal or operational constraint;

(f) it is not issued by:
    (i) an entity that is part of the same group as the non-financial clearing member covered by the guarantee; (ii) an entity whose business involves providing services critical to functioning of the CCP, unless that entity is an EEA central bank or a central bank of issue of a currency in which the CCP has exposures;

(g) it is not otherwise subject to significant wrong-way risk;

(h) it is fully backed by collateral that meets the following conditions:
    (i) it is not subject to wrong-way risk, based on a correlation with the credit standing of the guarantor or the non-financial clearing member, unless the wrong-way risk has been adequately mitigated by a haircut applied to the collateral; (ii) the CCP has prompt access to it and it is bankruptcy remote in case of the simultaneous default of the clearing member and the guarantor;

(i) the suitability of the guarantor has been ratified by the board of the CCP after a full assessment of the issuer and of the legal, contractual and operational framework of the guarantee in order to have a high level of comfort on the effectiveness of the guarantee.

A bank guarantee issued by a central bank shall meet the following conditions:

(a) it is issued by an EEA central bank or a central bank of issue of a currency in which the CCP has exposures;

(b) it is denominated in one of the following currencies:
 (i) a currency the risk of which the CCP can demonstrate that it is able to adequately manage; (ii) a currency in which the CCP clears transactions, in the limit of the collateral required to cover the CCP's exposures in that currency;

(c) it is irrevocable and unconditional and the issuing central bank cannot rely on any legal or contractual exemption or defence to oppose the payment of guarantee;

(d) it can be honoured within the period of liquidation of the portfolio of the defaulting clearing member who provides it, without any regulatory, legal or operational constraint or any third party claim on it.

GOLD

Gold shall be allocated pure gold bullion of recognised good delivery and shall meet the following conditions:

(a) it is directly held by the CCP;

(b) it is deposited with an EEA central bank or a central bank of issue of a currency in which the CCP has exposures;

(c) it is deposited with an authorised credit institution as defined under Directive 25006/48/EC;

It is deposited with a third country credit institution that is subject to and complies with prudential rules considered by the competent authorities to be at least as stringent as those laid down in Directive 2006/48/EC and which has robust accounting practices, safekeeping procedures and internal controls.

1.3 DODD-FRANK WALL STREET REFORM AND CONSUMER PROTECTION ACT FOR CCPs OPERATING IN THE UNITED STATES AND RULES PROPOSED BY THE PRUDENTIAL REGULATORS, THE CFTC AND THE SEC

"A covered swap entity shall collect initial margin and variation margin required pursuant to this part solely in the form of one or more of the following types of eligible collateral –

(a) immediately available cash funds that are denominated in:
 (i) U.S. dollars; or (ii) the currency in which payment obligations under the swap are required to be settled;

(b) any obligation which is a direct obligation of, or fully guaranteed as to principal and interest by, the United States; and

(c) with respect to initial margin only:

(i) any senior debt obligation of the Federal National Mortgage Association, the Federal Home Loan Mortgage Corporation, the Federal Home Loan Banks and the Federal Agricultural Mortgage Corporation; and (ii) any obligation that is an "insured obligation", as that term is defined in 12 U.S.C. 2277a(3), of a Farm Credit System Bank."

According to the proposed rule of the SEC, collateral ideally is an asset of stable and predictable value, an asset that is not linked to the value of the transaction in any way, and an asset that can be sold quickly and easily if the need arises. The proposed additional requirements include the following:

(a) the collateral must be subject to the physical possession or control of the non-bank security-based swap dealers;

(b) the collateral must be liquid and transferable;

(c) the collateral must be capable of being liquidated promptly by the non-bank security-based swap dealer without intervention by any other party;

(d) the collateral agreement between the non-bank security-based swap dealer and the counterparty must be legally enforceable by the non-bank security-based swap dealer against the counterparty and any other parties to the agreement;

(e) the collateral must not consist of securities issued by the counterparty or a party related to the non-bank security-based swap dealer, or to the counterparty; and

(f) if the Securities and Exchange Commission has approved the non-bank security-based swap dealer's use of a VaR model to compute net capital, the approval allows the non-bank security-based swap dealer to calculate deductions for market risk for the type of collateral.

1.4 BASEL III: INTERNATIONAL FRAMEWORK FOR LIQUIDITY RISK MEASUREMENT, STANDARDS AND MONITORING FOR BANKS (CRITERIA FOR HIGH QUALITY LIQUID ASSETS FOR THE LIQUIDITY COVERAGE RATIO)

Basel III defines two separate but complementary minimum standards for funding risk, the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR). These standards aim at ensuring higher liquidity buffers and reducing reliance on short-term funding. The LCR should promote the short-term resilience of the liquidity risk profile of banks by ensuring that they have sufficient high-quality liquid assets to survive a significant stress scenario lasting 30 calendar days. According to the Basel III rules, assets are considered to be high-quality liquid assets if they can be immediately and easily converted into cash with little or no loss of value. There are two categories of high-quality liquid assets. Level 1 assets can be included in the stock without limit, while Level 2 assets can only comprise up to 40% of the stock.

Level 1 assets (unlimited share of the pool and not subject to a haircut under the LCR) are limited to the following:

a) cash;

b) central bank reserves;

c) marketable securities representing claims on or guaranteed by sovereigns, central banks, public sector entities, the Bank for International Settlements, the International Monetary Fund, the European Central Bank and European Community, or multilateral development banks, and satisfying certain conditions:
   (i) assigned a 0% risk weight under the Basel II Standardised Approach for credit risk; (ii) traded in large, deep and active repo or cash markets characterised by a low level of concentration; (iii) have a proven record as a reliable source of liquidity in the markets even during stressed market conditions; and (iv) are not an obligation of a financial institution or any of its affiliated entities;

d) where the sovereign has a non-0% risk weight, sovereign or central bank debt securities issued in domestic currencies by the sovereign or central bank in the country in which the liquidity risk is being taken or in the bank's home country;

e) where the sovereign has a non-0% risk weight, domestic sovereign or central bank debt securities issued in foreign currencies are eligible up to the amount of the bank's stressed net cash outflows in that specific foreign currency stemming from the bank's operations in the jurisdiction where the bank's liquidity risk is being taken.

Level 2 assets comprise Level 2A assets and any Level 2B assets permitted by the supervisor.

Level 2A assets (which are subject to a 40% cap and 15% haircut) are limited to the following:

a) marketable securities representing claims on or guaranteed by sovereigns, central banks, public sector entities or multilateral development banks that satisfy all of the following conditions:
   (i) assigned a 20% risk weight under the Basel II Standardised Approach for credit risk; (ii) traded in large, deep and active repo or cash markets characterised by a low level of concentration; (iii) have a proven record as a reliable source of liquidity in the markets even during stressed market conditions (i.e. maximum decline of price not exceeding 10% or increase in haircut not exceeding 10 percentage points over a 30-day period of significant liquidity stress); and (iv) they are not an obligation of a financial institution or any of its affiliated entities;

b) corporate debt securities (including commercial paper) and covered bonds that satisfy all of the following conditions):
   (i) in the case of corporate debt securities: they are not issued by a financial institution or any of its affiliated entities; (ii) in the case of covered bonds: they are not issued by the bank itself or any of its affiliated entities; (iii) they either (1) have a long-term credit rating from a recognised external credit assessment institution of at least AA- or, in the absence of a long-term rating, a short-term rating equivalent in quality to the long-term rating; or (2) do not have a credit assessment by a recognised external credit assessment institution but are internally rated as having a probability of default corresponding to a credit rating of at least AA-; (iv) they are traded in large, deep and active repo or cash markets characterised by a low level of concentration; and (v) they have a proven record as a reliable source of liquidity in the markets even during stressed market conditions (i.e. maximum decline of price or increase in haircut over a 30-day period during a relevant period of significant liquidity stress not exceeding 10%).

Level 2B assets are limited to the following:

(i) residential mortgage-backed securities that satisfy certain conditions and are subject to a 25% haircut; (ii) corporate debt securities (including commercial paper) that satisfy certain conditions and are subject to a 50% haircut; (iii) common equity shares that satisfy certain conditions and are subject to a 50% haircut.

According to the Basel III rules, high quality liquid assets (except Level 2B assets as listed above) should ideally be eligible with central banks for intraday liquidity needs and overnight liquidity facilities.

Annex 2 High-level overview of eligibility requirements for collateral

Collateral	Central bank frameworks						Regulatory frameworks			
	Eurosystem	BoE	Riksbank	SNB	Fed	BoJ	CPSS-IOSCO PFMIs	EMIR and ESMA RTS	Dodd-Frank Act and proposed rules	Basel III LCR
Marketable assets										
- Debt instruments of:										
Central government	√	√	√	√	√	√	√	√	√	√
Central banks	√	√	√	√			√	√	√	√
Public sector institutions other than central government	√	√	√	√	√	√	√	√[1]	√	√
Supranational institutions	√	√	√	√		√	√	√		√
Credit institutions (covered bonds)	√	√	√	√			√	√[1]		√
Credit institutions (excl. covered bonds)	√	√		√			√	√[1]		
Corporations (other than credit institutions)	√	√	√	√		√	√	√[1]		√
- ABS	√	√				√	√			
- Equities							√			√
- Money market funds								√		
- Gold							√	√		
Non-marketable assets										
- Credit claims (bank loans)	√					√				
- Non-marketable retail mortgage-backed debt instruments (RMBDs)	√	√								
Cash as collateral										
- Cash, including fixedterm deposits from eligible counterparties	√						√	√	√	√

Note: The risk management conditions on collateral are not shown in this matrix.
1) These instruments can be considered eligible assets if they are guaranteed by (i) a government; (ii) a central bank; (iii) a multilateral development bank as listed under Section 4.2 Part 1 of Annex VI to Directive 2006/48/EC; and (iv) the European Financial Stability Facility or the European Stability Mechanism.

CCP frameworks																		
Underlying collateral for cleared repos											Initial margin							
Eurex Clearing GC Pooling				LCH.Clearnet				CC&G		MEFF	Eurex Clearing	LCH.Clearnet		ICE Clearing Europe	CME- Europe	CC&G	MEFF	NASDAQ OMX Nordic
ECB Basket	ECB EXT Basket	Equity Basket		€GCPlus Basket No 1	€GCPlus Basket No 2	RepoClear €GC	RepoClear £GC	No 1	No 2	MEFF Repo		SwapClear & Forexclear	CDSClear					
√	√			√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
√	√			√	√				√		√							
√	√			√	√				√		√	√						√
√	√			√	√				√		√							
√	√			√	√				√		√							√
	√				√				√		√							
	√				√						√							
		√								√	√						√	√
											√			√				
								√		√	√	√	√	√	√	√	√	√

Annex 3a Overview of marketable assets within the collateral frameworks of central banks

	Eurosystem *(standard collateral framework)*	Bank of England *(narrow open market operations collateral set)*	Bank of England *(wider open market operations collateral set)*	Bank of England *(discount windows)*
Eligibility criteria				
Asset type	ECB debt certificates Other marketable debt instruments: Central government debt instruments Debt instruments issued by central banks Local and regional government debt instruments Supranational debt instruments Covered bank bonds Credit institutions' debt instruments Debt instruments issued by corporate and other issuers Asset-backed securities (ABS).	Sovereign and central bank debt	Sovereign and central bank debt Bonds of major international institutions Government-guaranteed agency bonds Government-guaranteed bank debt FNMC and FHLB securities Residential mortgage-backed securities (RMBS) Covered bonds Asset-backed securities (ABS) Portfolios of senior corporate bonds	Sovereign and central bank debt Bonds of major international institutions Government- guaranteed agency bonds Government- guaranteed bank debt FNMC and FHLB securities Residential mortgage-backed securities (RMBS) Covered bonds Asset-backed securities (ABS) Commercial mortgage-backed securities (CMBS) Some securitised portfolios Asset-backed commercial paper (ABCP)
Accepted credit assessment systems	External credit assessment institutions (ECAIs) NCBs' in-house credit assessment systems (ICASs) Counterparties' internal ratings-based (IRB) systems Third-party providers' rating tools	Moody's, Fitch and Standard & Poor's	Moody's, Fitch and Standard & Poor's	Moody's, Fitch and Standard & Poor's
Credit standards	The asset must meet high credit standards. The high credit standards are assessed using Eurosystem credit assessment framework (ECAF) rules for marketable assets	Minimum rating of AA from at least two rating agencies (use as an indicator only)	TBD (rating used as an indicator only)	

Swiss National Bank	Sveriges Riksbank	Federal Reserve System *(temporary open market operations)*	Federal Reserve System *(discount window)*	Bank of Japan
Securities issued by central banks, public sector entities, international or supranational organisations or private sector entities excluding domestic banks and their subsidiaries abroad Securities with: a) a fixed-principal amount with unconditional redemption, and b) a fixed rate, floating rate or zero coupon	Bonds or other promissory notes	US Treasuries Agencies bonds Agency MBS	U.S. Treasury obligations, State or political subdivision obligations, Obligations of U.S. government agencies and government sponsored enterprises, Corporate bonds and money market instruments, Asset-backed securities, Collateralized mortgage obligations	Government Bonds, Government-Guaranteed Bonds, Municipal Bonds, Fiscal Investment and Loan Program (FILP) Agency Bonds, Corporate Bonds, Asset- Backed Securities, Foreign Government Bonds, International Financial Institution Bonds
Credit ratings by at least one of Standard & Poor's, Moody's or Fitch	Moody's, Fitch and Standard & Poor's		Credit ratings of at least one of the rating agencies	Moody's, Fitch, S&P, R&I and JCR
For securities denominated in foreign currencies: Issuer's country of domicile has a minimum rating of AA-/Aa3. Securities have a minimum rating of AA-/Aa3. Securities of international or supranational organisations can be exempted from these rating requirements. For securities denominated in CHF: Issuer's country of domicile has a minimum rating of A/A2. Securities have a minimum rating of A/A2.	For short-term securities, A-1/P-1/F1 in an asset and an issuer For long-term securities, single A-/A3 in an asset and an issuer		Minimum rating of AAA for some cases (e.g. CDO, CMBS, foreign denominated securities)	For FILP Agency bonds and corporate bonds, single A; For bonds issued by Real Estate Investment Corporations and international financial institution bonds, AA; For ABSs, AAA; For ABCPs, A-1. For the other assets, no minimum credit standards are established.

Annex 3a Overview of marketable assets within the collateral frameworks of central banks (cont'd)

	Eurosystem *(standard collateral framework)*	Bank of England *(narrow open market operations collateral set)*	Bank of England *(wider open market operations collateral set)*	Bank of England *(discount windows)*
Place of issue	EEA (corporate bonds without credit ratings must be issued in the euro area)	United Kingdom Canada France Germany Netherlands United States	United Kingdom Canada France Germany Netherlands United States Australia Austria Belgium Denmark Finland Ireland Italy Japan Luxembourg New Zealand Norway Portugal Slovenia Spain Sweden Switzerland	United Kingdom Canada France Germany Netherlands United States Australia Austria Belgium Denmark Finland Ireland Italy Japan Luxembourg New Zealand Norway Portugal Slovenia Spain Sweden Switzerland
Settlement/ handling procedures	Place of settlement: euro area; approved CSD	Domestic CSD (CREST) Euroclear Clearstream Custody accounts with the Bank of Canada, Federal Reserve Bank of New York, Bank of Japan or Bank of New York Mellon	Domestic CSD (CREST) Euroclear Clearstream Custody accounts with the Bank of Canada, Federal Reserve Bank of New York, Bank of Japan or Bank of New York Mellon	Domestic CSD (CREST) Euroclear Clearstream Custody accounts with the Bank of Canada, Federal Reserve Bank of New York, Bank of Japan or Bank of New York Mellon

Swiss National Bank	Sveriges Riksbank	Federal Reserve System *(temporary open market operations)*	Federal Reserve System *(discount window)*	Bank of Japan
Securities of domestic public authorities, domestic mortgage bond institutions, other domestic issuers with an explicit guarantee from the Swiss Confederation and the central issuing office of Swiss municipalities are excluded from this rating requirement. Securities of international or supranational organisations can be exempted from these rating requirements.				Creditworthiness of all accepted assets are judged by the bank in light of various factors concerning the obligor, including its financial conditions and ratings by rating agencies, if any (This approach is the same as BOE takes. A rating from CRAs is only one factor for the judgement of creditworthiness of collateral).
For securities denominated in foreign currencies: Switzerland EU EEA	EU EEA Canada Japan United States	United States		Japan excluding German, French, UK and US government securities
Domestic CSD (SIX SIS Ltd)	Domestic CSD (VPC) Euroclear Other foreign CSD indicated by the foreign central bank	FSS	FSS DTC Clearstream Euroclear	BOJ JSDC

Annex 3a Overview of marketable assets within the collateral frameworks of central banks (cont'd)

	Eurosystem *(standard collateral framework)*	Bank of England *(narrow open market operations collateral set)*	Bank of England *(wider open market operations collateral set)*	Bank of England *(discount windows)*
Issuer residence (place of establishment of issuer/debtor/ guarantor)	Issuer: EEA or non-EEA G10 countries Debtor: EEA Guarantor: EEA (corporate bonds without credit ratings must be issued in the euro area)	United Kingdom Canada France Germany Netherlands United States	United Kingdom Canada France Germany Netherlands United States Australia Austria Belgium Denmark Finland Ireland Italy Japan Luxembourg New Zealand Norway Portugal Slovenia Spain Sweden Switzerland	United Kingdom Canada France Germany Netherlands United States Australia Austria Belgium Denmark Finland Ireland Italy Japan Luxembourg New Zealand Norway Portugal Slovenia Spain Sweden Switzerland
Guarantor residence	EEA		G10	G10
Currency	EUR	GBP EUR USD CAD	GBP EUR USD CAD AUD SEK CHF JPY DKK NZD NKK	GBP EUR USD CAD AUD SEK CHF JPY DKK NZD NKK
Minimum volume				
Cross-border use	Throughout the euro area	√	√	√
Re-use[1)]	√			

1) Re-use refers to a service which enables counterparties to re-use the collateral received through the tri-party agent as the collateral taker in onward tri-party transactions as the collateral giver, allowing different types of exposures to be covered from a single and flexible pool of collateral.

Swiss National Bank	Sveriges Riksbank	Federal Reserve System *(temporary open market operations)*	Federal Reserve System *(discount window)*	Bank of Japan
For securities denominated in foreign currencies: Switzerland EU EEA	EU EEA Canada Japan United States	United States		Japan
				Japan
CHF EUR USD GBP DKK SEK NOK	SEK EUR DKK NOK USD GBP JPY	USD	USD EUR GBP JPY AUD CAD DKK SEK	JPY EUR for German and French government securities; GBP for UK government securities and USD for US government securities
For securities denominated in CHF: CHF 100 million For securities denominated in foreign currencies: equivalent to CHF 1 billion	SEK 100 million			
√		√	√	√
√				

Annex 3a Overview of marketable assets within the collateral frameworks of central banks (cont'd)

	Eurosystem *(standard collateral framework)*	Bank of England *(narrow open market operations collateral set)*	Bank of England *(wider open market operations collateral set)*	Bank of England *(discount windows)*
Risk management				
Market valuation	√	√	√	√
Valuation haircut	√	√	√	√
Close link restriction	Maximum of 20% of the capital			
Concentration limit	For unsecured debt instruments issued by a single credit institution, a maximum of 5% of the total value of collateral submitted by the counterparty		Maximum of £250 million or 25% by total market value for securities other than securities acceptable in short-term open market operations (only if the value of the exposure is in excess of £1,000 million)	

Swiss National Bank	Sveriges Riksbank	Federal Reserve System *(temporary open market operations)*	Federal Reserve System *(discount window)*	Bank of Japan
Twice-daily valuation				
√	√		√	√
√	√		√	√
Maximum of 20% of the capital or voting rights (this 20% rule does not apply to participations in mortgage bond banks or similar institutions)	√			√
	Maximum of 25% by total market value for securities, including covered bonds, issued by a bank or foreign credit institution			

Annex 3b Overview of non-marketable assets within the frameworks of central banks (credit claims/bank loans)

(additional restrictions on collateral eligibility apply according to the central bank's risk management policy)

	Eurosystem	Seven national central banks *(additional credit claims)*	Bank of England *(discount window facility loan collateral)*
Type of loan (i.e.category of debtor)			Residential mortgage, consumer loan (excluding credit cards), commercial real estate loan or corporate loan to a non-bank
Credit standards	Minimum rating of BBB- (provability of default of 0.4% at one year)	Minimum rating of BB- (probability of default up to 1.5% at one year)	
Type of debtor/ guarantors	Public sector Non-financial corporations International and supranational institutions	Public sector Non-financial corporations International and supranational institutions Household	Non-financial corporations Household
Place of establish-ment of the debtor or guarantor	Euro area	Euro area	United Kingdom
Currency	EUR	EUR USD *for FR, ES, CY* GBP *for ES, CY, IE* CHF *for ES, CY* CAD *for ES, CY* AUD *for ES, CY* JPY ES, CY	GBP EUR USD AUD CAD SEK CHF
Minimum size	Minimum of €500,000 for cross-border credit claims	No minimum for FR, CY Minimum of € 100,000 for PT Minimum of € 10,000 or € 250,000 for IE	
Governing laws for agreement and mobilisation	Law of a euro area country The total number of different laws shall not exceed two	Law of a euro area country The total number of different laws shall not exceed two	Laws of England, Wales, Scotland or Northern Ireland
Maturity			Between 3 months and 40 years
Cross-Border use	√	Limited	

Swiss National Bank	Sveriges Riksbank	Federal Reserve System *(discount window)*	Bank of Japan
		Commercial, industrial or agricultural loans Consumer loans, residential and commercial real estate loans	Loans on deeds to companies Loans on deeds to real estate investment corporations Loans on deeds to the government (including the government's special accounts) Loans on deeds with government guarantees Loans on deeds to municipal governments
			Minimum rating of single A for loans to companies and AA for loans to real estate investment corporations
		Public sector Non-financial corporations International and supranational institutions Household	Public sector Non-financial corporations
		United States	Japan
		USD	JPY
			Minimum of 500 million Yen.
			Japanese law
			Residual maturity of up to 10 years

Annex 4 Overview of collateral requirements within regulatory frameworks

	CPSS-IOSCO principles for FMIs	EMIR ESMA RTS
Eligibility criteria		
General risk management requirements	An FMI should generally limit the assets it routinely accepts as collateral to those with low credit, liquidity and market risks. An FMI must be confident of the collateral's value in the event of liquidation and of its capacity to use that collateral quickly, especially in stressed market conditions. An FMI that accepts collateral with credit, liquidity and market risks above minimum levels should demonstrate that it sets and enforces appropriately conservative haircuts and concentration limits.	Should accept, as highly liquid collateral, assets (i) issued by an issuer with low credit risk; (ii)with low market risk; (iii) freely transferable without any regulatory or legal constraint that impairs liquidation; (iv) traded in an active outright sale or repurchase agreement market at all times including a diverse group of buyers and sellers; (v) with price data published on a regular basis and (vi) not subject to material wrong-way risk or not issued by the clearing member
Credit standards		
Currency	An FMI should consider foreign-exchange risk where collateral is denominated in a currency different from that in which the exposure arises and set haircuts to address the additional risk to a high level of confidence.	Limited to (i) the currency of the jurisdiction where the CCP is established; (ii) the currency of a State for which the CCP can demonstrate with a high level of confidence that it is able to manage the risks on the currency; or (iii) the currency in which the CCP clears business in the limit of the collateral required to cover the CCP's exposures in that currency.
Market valuation	At a minimum, mark its collateral to market daily.	A CCP shall mark to market its collateral on a near real-time basis.
Haircut	Haircut procedures should be validated at least annually.	A CCP shall monitor on a regular basis the adequacy of the haircuts. The CCP shall review the haircut policies and procedures at least annually. The haircut policies and procedures should be independently validated at least annually.
Close link	Except covered bonds issued by a participant or a closely linked company.	Restrict the acceptance of collateral issued by the clearing member providing it, except in the case of covered bonds not subject to material wrong-way risk or not issued by the clearing member.
Concentration limit	√	Concentration limits at the level of (i) individual issuers; (ii) type of issuer; (iii) type of asset; (iv) each clearing member; and (v) all clearing members. A CCP shall review its concentration limit policy and procedure at least annually.
Limiting procyclicality	√	√
Cross-border use	If cross-border collateral is accepted, the additional risks associated with its use should be identified and mitigated. Also, it should be ensured that it can be used in a timely manner. To this extent, there should be in place the appropriate legal and operational safeguards that identify and address any significant liquidity effects.	√
Re-use[2)]	Rules should clearly specify when an FMI may re-use its participant collateral and the process for returning that collateral to participants. In general, an FMI should not rely on the re-use of collateral as an instrument for increasing or maintaining its profitability. However, an FMI may invest any cash collateral received from participants on their behalf.	

1) The "prudential regulators" are the Office of the Comptroller of the Currency, Treasury (OCC); the Board of Governors of the Federal Reserve System (Board); the Federal Deposit Insurance Corporation (FDIC); the Farm Credit Administration (FCA); and the Federal Housing Finance Agency (FHFA).
2) Re-use of collateral refers to the FMI's subsequent use of collateral that has been provided by participants in the normal course of business.

Dodd-Frank Act Proposed rules by the prudential regulators[1] and the CFTF	Basel III LCR
Eligible collateral is limited to (i) immediately available cash funds; (ii) any obligation which is a direct obligation of, or fully guaranteed as to principal and interest by, the United States; and (iii) with respect to initial margin only (a) any senior debt obligation of the Federal National Mortgage Association, the Federal Home Loan Mortgage Corporation, the Federal Home Loan Banks and the Federal Agricultural Mortgage Corporation; and (b) any obligation that is an insured obligation, as that term is defined in 12 U.S.C. 2277a(3), of a Farm Credit System bank.	Should maintain "high-quality liquid assets" with the following characteristics: low credit and market risk, ease and certainty of valuation, low correlation with risky assets, listed on a developed and recognised exchange market, active and sizeable market, presence of committed market makers, low market concentration and flight-to-quality tolerance. Level 2A: Qualifying corporate debt (AA-) and qualifying covered bonds (AA-). Level 2B: Qualifying RMBS (AA) and qualifying corporate debt securities (between A+ and BBB-).
Immediately available cash funds are denominated in (i) US dollars or (ii) the currency in which payment obligations under the swap are required to be settled.	Only domestic currency with few exceptions
A derivative clearing organisation shall use prudent valuation practices to value assets posted as initial margin on a daily basis.	√
A derivative clearing organisation shall apply appropriate reductions in value to reflect market and credit risk, including in stressed market conditions, to the assets that is accepts in satisfaction of initial margin obligations, and shall evaluate the appropriateness of such haircuts on at least a quarterly basis.	Minimum haircut of 15% for aggregate of Level 2 assets. For qualifying corporate debt securities (between A+ and BBB-) and unencumbered equities, 50% of haircut; for qualifying RMBS (AA), 25% of haircut. √
A derivative clearing organisation shall apply appropriate limitations on the concentration of assets posted as initial margin, as necessary, in order to ensure its ability to liquidate such assets quickly, with minimal adverse price effects. The appropriateness of any such concentration limits shall be evaluated on at least a monthly basis. Incorporating stressed market conditions into the calculation of haircuts can limit the effects of procyclicality, which refers to changes that are positively correlated with business or credit cycle fluctuations and that may cause or exacerbate financial instability. Currently, only immediately available cash funds denominated in a foreign currency are acceptable as collateral in which payment obligations under the swap are required to be settled.	√
Funds and assets belonging to clearing members and their customers that are invested by derivative clearing organisations shall be held in instruments with minimal credit, liquidity and market risks. A futures commission merchant or a derivatives clearing organisation may invest customer money in the following instruments: (i) US government securities; (ii) municipal securities; (iii) US. agency obligations; (iv) certificates of deposit; (v) commercial paper; (vi) corporate notes or bonds); and (vii) interests in money market mutual funds.	

Annex 5.1 Underlying collateral for cleared repos

(additional restrictions on collateral eligibility apply according to CCPs' risk management policy)

	Eurex Repo GC pooling		
	ECB Basket	ECB EXT Basket	Equity Basket
Eligibility criteria			
Asset type			
Category I: Central government debt Debt issued by NCBs	√	√	
Category II Local and regional government debt Jumbo covered bank bonds Agency debt instruments Supranational debt instruments	√	√	
Category III Covered bank bonds Debt instruments issued by nonfinancial corporations and other issuers	√	√	
Category IV Credit institution debt instruments (unsecured) Debt instruments issued by financial corporations other than credit institutions (unsecured)	√	√	
Other			
Credit standards	Minimum rating of single A-	Minimum rating of single B-	
Place of issue	Austria, Belgium, Germany, the Netherlands, France, Slovenia and Luxembourg	Austria, Belgium, Germany, the Netherlands, France, Slovenia, Luxembourg, Cyprus, Finland, Ireland, Italy, Malta and Spain	
Settlement/handling procedures			
Acceptable markets			
Issuer residence	EEA or non-EEA G10 countries (United States, Canada, Japan or Switzerland)	EEA or non-EEA G10 countries (United States, Canada, Japan or Switzerland)	
Guarantor residence			
Currency	EUR	EUR	
Minimum volume			

	LCH.Clearnet		CC&G	MEFF
€GCPlus Basket No 1	€GCPlus Basket No 2	RepoClear GC	Collateral pool	MEFF Repo
√	√	√	√	√
√	√			
√	√			
	√			
Minimum rating of A- for Category I; for others, minimum rating of AA-	Minimum Rating of BBB-			
Places of issue will correspond to the dynamic eligibility upon the ECBeligible list (can be fewer than on the ECB-eligible list but not more); it is not a pre determined list of places of issue. Having a larger eligibility filter, basket 2 will probably display a larger list of places of issue.		United Kingdom France Germany Austria Belgium Netherlands Luxembourg Finland Slovakia Italy Spain		
Euroclear single CMS and set of CDSs/ICSD (EB & ESES - EF)	Euroclear single CMS and set of CDSs/ICSD (EB & ESES - EF)	Euroclear Clearstream	Monte Titoli	Iberclear
Issuer residence will correspond to the dynamic eligibility on ECB-eligible list (can be less than the ECB-eligible list but not more); it is not a list of issuer residences pre determined.		EU or United Kingdom (for £Baskets)		
EUR	EUR	EUR/GBP	EUR	EUR
√				

Annex 5.1 Underlying collateral for cleared repos (cont'd)

(additional restrictions on collateral eligibility apply according to CCPs' risk management policy)

	Eurex Repo GC pooling		
	ECB Basket	ECB EXT Basket	Equity Basket
Re-use	√	√	
Risk management			
Market valuation	√	√	
Haircut	√	√	
Close link			
Concentration limit	√	√	

Note: Categories I to VI in the section of "asset type" refer to the liquidity categories for marketable assets shown in Table 6 of the Guideline of the ECB on monetary policy instruments and procedures of the Eurosystem (general documentation).

LCH.Clearnet			CC&G	MEFF
€GCPlus Basket No 1	€GCPlus Basket No 2	RepoClear GC	Collateral pool	MEFF Repo
√	√	√		
√	√	√	√	√
√	√	√	√	√
√	√	√		√

5.2 Margin collateral for central clearing of OTC derivatives and repos

(additional restrictions to collateral eligibility apply according to CCPs' risk management policy)

	Eurex Clearing	LCH.Clearn et.Ltd	LCH.Clea rnet.SA
		SwapClear ForexClear RepoClear	CDSClear, Bonds Repos
Initial margin eligibility criteria			
Securities			
Central government debt instruments	√ Denominated in EUR, CHF, USD, GBP, DKK, NOK, SEK, AUD, CAD and JPY	√ Issued by US, AU, AT, BE, CA, DK, FI, FR, DE, IT, JP, LU, NL, NO, ES, SE and UK	√ Issued by FR, DE, BE, NL, IT, PT, ES, US and UK
Government guaranteed bonds	√ [Denominated in EUR]	√ Guaranteed by AU, AT, FR, DE, NL, SE, UK and US	
Local and regional government debt instruments	√ Denominated in EUR and CHF		
Public agency debt instruments	√ Denominated in EUR and CHF	√ Issued in US (FNMA, FHLMC and FHLB) and DE (KFW)	
Supranational institution debt instruments	√ [Denominated in EUR]		
Covered bank bonds	√ Denominated in EUR and CHF		
Credit institution debt instruments (unsecured)	√ Denominated in EUR and CHF		
Debt instruments issued by corporations other than credit institutions	√ Denominated in EUR and CHF		
ABS			
Cash	USD, GBP, EUR and CHF	USD, GBP, EUR, CAD, CHF, JPY, SEK, DKK and NOK	USD, GBP and EUR
Equities	√ Denominated in EUR, and CHF		
ETFs			
Money market funds			
Commodities	Gold		
Variation margin	Cash (EUR, CHF, USD and GDP)	Cash (per portfolio currency)	Cash (EUR)
Default fund	(See initial margin)		Cash (USD, GBP and EUR)

ICE Clearing Europe	CMEEurope	CC&G	MEFF	NASDAQ OMX Nordic
CDS clearing	OTC interest rate swaps			
√ Issued by AT, BE, FI, CA, FR, DE, IT, NL, ES, SE, CH, UK and US	√ Issued by FR, DE, UK and US	√ Issued by IT, FR and DE	√ Issued by ES, DE, FR, UK, NE, BE, AU and US	√ Issued by AT, DE, DK, FI, FR, NL, NO, SE, UK and US
				√ Issued in SE
				√ Issued in DK and SE and denominated in their own currencies
USD, GBP and EUR	USD, GBP and EUR	EUR	EUR and USD	SEK, EUR, DKK, NOK, CHF, GBP and USD
			√ Included in IBEX 35 Index (except for the BME shares)	√ Listed in DK, FI, NO and SE
				√
Gold				
Cash (in the currency of the contract)	Cash (USD, GBP and EUR)	Cash (EUR)	Cash (EUR)	Cash (SEK, EUR, DKK, NOK, CHF, GBP and USD)
Cash (EUR) Securities: European governme nt bonds issued by AT, BE, FI, FR, DE, IT, NL, ES, SE, CH and UK	(see initial margin)	Cash (EUR) Guarantee s (up to a maximum of 40% of the contribution fee)		Cash (SEK, EUR, DKK, NOK, GBP and USD) Securities: Governme nt debt instrument s issued by DK, FI, DE, NO, SE and UK

6 ABBREVIATIONS

ABSs	Asset-backed securities
ACC	Additional Credit Claims
ATS	Automatic trading system
Basel III	International regulatory frameworks for banks, developed by the Basel Committee on Banking Supervision
BCBS	Basel Committee on Banking Supervision
BIS	Bank for International Settlements
BoE	Bank of England
BoJ	Bank of Japan
CBF	Clearstream Banking AG, Frankfurt
CBL	Clearstream Banking S.A., Luxembourg
CBWP	Collateral Basket with Pledge (provided by LCH Clearnet SA)
CC&G	Cassa di Compensazione e Garanzia (Italian CCP, part of the London Stock Exchange Group)
CCP	Central counterparty
CFTC	Commodity Futures Trading Commission
COGESI	Contact Group on Euro Securities Infrastructures
CPSS	Committee on Payment and Settlement Systems
CRR	Capital Requirements Regulation
CRD IV	Capital Requirements Directive
CSD	Central securities depository
DBG	Deutsche Börse Group
DFA	Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act)
EBA	European Banking Authority
ECB	European Central Bank
EEA	European Economic Area
EMIR	Regulation (EU) 648/2012 of the European Parliament and of the Council on OTC derivatives, central counterparties and trade repositories (European Market Infrastructures Regulation)
ESES	Euroclear Settlement of Euronext-zone Securities
ESMA	European Securities and Markets Authority
EU	European Union
Fed	Federal Reserve
FLS	Funding for Lending Scheme
FMIs	Financial market infrastructures
GC	General Collateral
GGBBs	Government Guaranteed Bank Bonds
HQLA	High-quality liquid assets
IOSCO	International Organisation of Securities Commissions
LCR	Liquidity Coverage Ratio
MBSs	Mortgage-backed securities
MEFF	The secondary Spanish derivative market (which runs both the Exchange and the CCP activity). In this report, MEFF is the entity that acts as CCP.
MiFID	Markets in Financial Instruments Directive
MMFs	Money market funds
MTS	Multilateral trading system

NCB	National central bank
NSFR	Net Stable Funding Ratio
OMO	Open market operations
OTC	Over-the-counter
PD	Probability of default
PFMIs	Principles for financial market infrastructures
Riksbank	Sveriges Riksbank
RMBDs	Retail mortgage-backed debt instruments
RTS	Regulatory technical standard
SEC	Securities and Exchange Commission
SMEs	Small and medium-sized enterprises
SNB	Swiss National Bank
SPV	Special purpose vehicle
TARGET	Trans-European Automated Real-time Gross settlement Express Transfer system
USA	United States of America