Structural weaknesses of the Spanish government debt repo market and their implications during the crisis

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Insufficient interconnectivity between Spanish and European clearing houses, together with perceptions of weak risk management at the Spanish Central Counterparty (CCP) in the repo markets, were part of the problems faced by the Spanish government debt market since mid 2010

A properly functioning repo market for government debt securities is critical to the efficient and smooth functioning of the financial markets as a whole. Suitable trading, clearing, and settlement infrastructure is a crucial component of ensuring the repo market can perform its pivotal role. In the Spanish case, deficiencies related to the lack of interconnectivity, together with the perception of weak risk management at the domestic Central clearing counterparty for repo, fuelled existing tensions experienced by domestic financial institutions seeking to fund their growing government debt portfolios. Access of the larger Spanish Banks to the main European CCPs, and second, the ECB three year refinancing operations, have provided some breathing space. However, the current situation is far from optimal, so infrastructure deficiencies must be properly addressed.

Introduction

This article reviews the evolution of the European government debt securities repo markets through the crisis, looking in particular at the Spanish situation since late spring 2010, where great tensions where present in the funding of domestic banks' government debt portfolios. The fragmented market infrastructure in Europe, lack of interconnectivity among Central Securities Depositories (CSDs), the increasing relevance of the CCPs in the repo markets during the financial crisis and the role of the ECB in the repo markets are all aspects that have to be taken into account when looking at the evolution of the repo market for Spanish government debt.

Repo Market: at the core of the financial system

A repo, or a "sale-and-repurchase agreement", is a financial instrument in which the seller sells securities to the buyer against cash and simultaneously agrees to repurchase the same or similar securities (mainly fixed income) in the future. The repo market is at the core of the financial system, pivotal to the smooth functioning and stability of markets. The main functions provided by the repo market, briefly outlined below, demonstrate how this market segment is of fundamental importance in today's financial markets:

- Provides an efficient source of money market funding.
- Provides a financial safety net in times of financial crisis.

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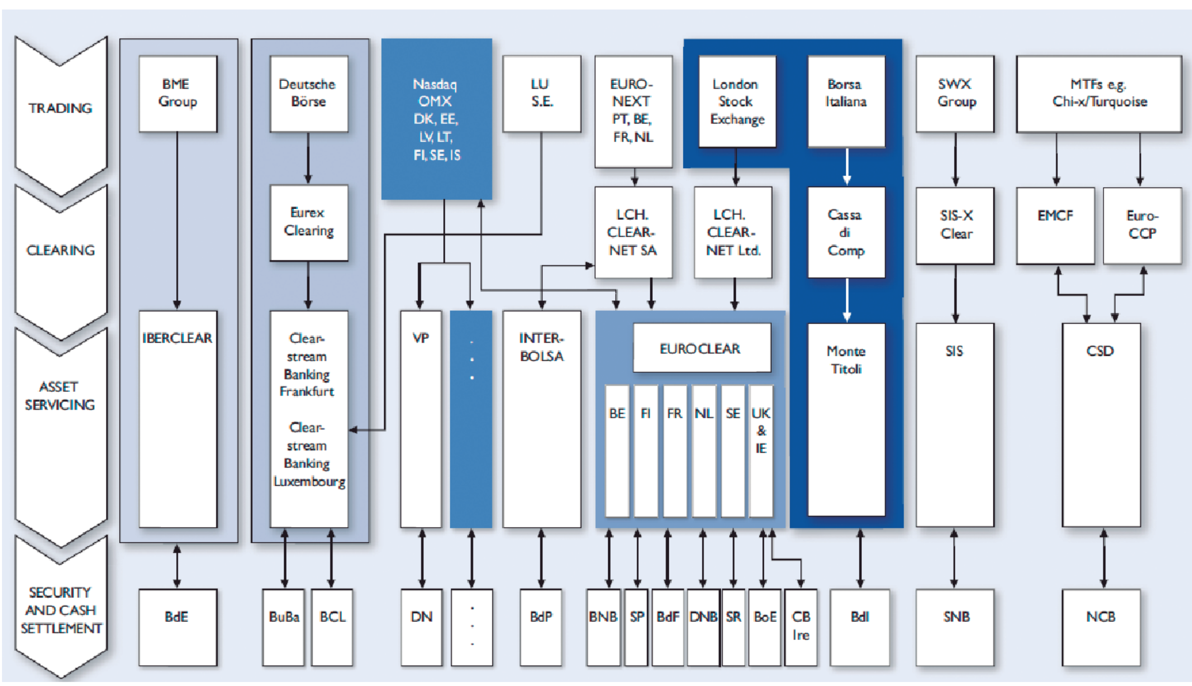
- Facilitates central bank operations.
- Facilitates the mitigation of risks in the interbank market.
- Promotes cross-border market integration.
- Allows for hedging and pricing derivatives.
- Improves efficiency in primary debt markets.
- Ensures liquidity in secondary debt markets and fosters price discovery.

The financial market turbulence and the sovereign debt crisis that hit Europe in 2007, which has intensified since 2009, have had an important impact on the euro money market dynamics. The large contraction of turnover in the unsecured market has been mainly influenced by concerns over credit risk, but also by the large participation in the ECB's 1 and 3-year long-term refinancing operations (LTROs) initiated in 2009 and 2011, respectively. In contrast, the secured market segment (the repo market) has increased its size throughout the crisis, thanks to the trend towards concentrating transactions through a CCP. The main reasons behind the growing importance of CCP cleared repos are, first and foremost, the counterparties' interest in protecting themselves from rising credit-risk concerns and, in second order of importance, the greater use of electronic platforms for trading repos via CCPs. The greater role of CCP-cleared repos since 2008 has come at the expense of a steep fall in bilateral repos not cleared through CCPs.

Regarding the Spanish domestic repo market for government securities, trading traditionally has taken place both through electronic platforms (SENAF being the most important) and on a bilateral basis, normally through brokers. The latter is the channel through which most turnover is concentrated, and it is where foreign participants developed their repo activity with domestic counterparties until 2010. Turnover is concentrated among market members, cleared through the Spanish CCP -MEFFREPO and settled at the national CSD, Iberclear. We will see later in the article that the peculiarities of the Spanish repo market infrastructure were key for explaining the problems in the market for Spanish government bonds experienced during 2010. First, we will look at the post trading market infrastructure in Europe, because the current interconnectivity problems that hinder its efficiency and soundness also greatly affect Spain.

Exhibit 1: Europe`s current trading and post-trading landscape.



Source: ECB

Trading, clearing and settlement in European securities markets: a fragmented picture

The integration of bond and equity markets relies greatly on the degree of integration of the underlying infrastructure, in particular of securities settlement systems and central counterparties. Financial market infrastructures in Europe were created to meet the requirements of national financial markets (i.e. securities in domestic currency). In most cases, there were only one, maybe two, dominant players at each stage of the value chain: one stock exchange for trading, one CCP for clearing and one CSD for settlement. Despite the introduction of the euro, the provision of clearing and settlement services remains quite fragmented (see Exhibit 1).

There have been some successful mergers between European CSDs, but the process of consolidation by mergers has been very slow. There have been vertical mergers (stock exchange, CCP and CSD) in Germany, Spain and Italy, and horizontal integrations or mergers at the same level of infrastructure across several countries. Euroclear is the most prominent example of the latter among CSDs. Clearstream and Euroclear are the two international CSDs (ICSD) in Europe, and their interconnectivity with the domestic CSDs is key for the sound functioning and efficiency of the European securities markets.

Mergers alone are unlikely to deliver an integrated market infrastructure for Europe as a whole. In this regard, the most significant initiative is the Eurosystem's pan-European securities settlement platform TARGET2- Securities (T2S), which is intended to come into operation in 2014.

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Central Counterparties (CCPs): critical role, systemic importance and risk framework

Central counterparties[2] (CCPs) are a critical

[2] CCPs and clearing houses (CSDs) are frequently used synonymously, but there exists a key conceptual distinction.

Exhibit 2: CCPs operating in Europe

CCP	Country	Number of participants 2006	2007	2008	2009	2010	Activity[1] 2008	2009	2010
Euro area countries									
EUREX Clearing AG	Germany	119	118	109	117	128	5.077	2.637	3.035
Hellenic Exchanges Holdings SA	Greece	37	35	34	32	33	1	0	0
MEFF	Spain	52	58	57	52	52	-	-	-
MEFFCLEAR	Spain	16	16	14	13	24	-	-	-
LCH.Clearnet SA	France	115	111	106	103	103	7.392	4.570	5.492
CC&G	Italy	78	74	75	70	71	2.469	1.834	2.231
European Multilateral Clearing Facility	The Netherlands	-	-	-	-	-	1.335	2.401	5.532
CCP	Austria	66	73	76	75	78	146	75	77
Non-euro area countries									
KELER Zrt.	Hungary	37	32	32	32	33	23	20	21
Casa Romana de Compensatie SA	Romania	42	40	37	39	39	0	0	0
Casa de Compensare Bucuresti SA	Romania	36	36	35	27	22	0	0	0
Nasdaq OMX DM	Sweden	44	46	50	82	87	-	-	-
LCH.Clearnet Ltd	United Kingdom	117	117	111	118	148	6.666	4.201	n.a.
ICE Clear Europe	United Kingdom	-	-	-	47	50	0	0	0

(1) Value of cash (outright) securities transactions cleared through each CCP, in billions of euro.

element of financial markets' post trading infrastructure. Created originally to absorb counterparty risk for exchange-traded derivatives, their use has been extended over time to cash markets and, most recently, to OTC (over-the-counter) derivatives. Conceptually, a CCP is an entity that interposes itself between trading participants to become a buyer to every seller and a seller to every buyer, thereby ensuring settlement even if one of the original participants in the trade fails to meet its obligations. A participant thus no longer has to worry about the solvency of all its trading partners but can focus on managing its exposure with a single counterparty, the CCP. In Exhibit 2, we show the most relevant CCPs in Europe: between 75% and 80% of the total volume cleared is concentrated in Eurex Clearing AG (Germany), LCH.Clearnet SA (France) and LCH.Clearnet Ltd (United Kingdom).

A key issue for the stability of the markets arises from the fact that, while CCPs simplify risk management for its participants, they concentrate counterparty risk in a single entity (the CCP). To avoid the failure of CCPs –which would generate a great source of systemic risk it is necessary that they develop a strong risk management framework that, above all things, assures that the CCP has, at any time, sufficient financial resources in order to cover the potential losses in case of a (major) participant's default.

In the concrete space of sovereign bonds, it is useful to look at the risk framework of LCH.Clearnet, the largest CCP for clearing cash and repo transactions in European Sovereign bonds. This risk framework is designed to ensure the financial guarantee of performance of the CCP. It allows for LCH.Clearnet to protect itself from increasing risks in a transparent way, while providing certainty of funding for fixed income participants that LCH.Clearnet will not cease to clear a market.

By imposing higher haircuts or margins on repo positions, LCH.Clearnet's risk framework is designed to react to market conditions and perceived increases in risk in three main areas: dislocation in prices, steep changes in liquidity of sub-investment grade securities; and "wrong way risk" where clearing members are highly correlated with the underlying securities. The Framework has several "key" indicators to judge a significant increase in the risk of a security. The major published indicator is i) at 450bp spread at the 10 year maturity to a AAA benchmark; or ii) at a 500bp 5 year CDS spread; or iii) where a Market Implied Rating drops to B1.

The risk framework emerged in late 2009 in the context of LCH.Clearnet Ltd considerations regarding the clearing of Greek government bonds. Its implementation was a pre-requisite for the clearing of Spanish government bonds in August 2010 in LCH.Clearnet Ltd (London) and November 2010 in LCH.Clearnet SA (Paris). The framework was in place since August 2010 and officially announced in October 2010. The first action, on Irish sovereign debt, dates from November 10th, 2011.

Spain's case: lack of CSD interconnectivity and deficiencies of the local CCP for the repo market

Cross-border transactions have to be settled between a national CSD and an international CSD or ICSD. Normally, the national CSDs are used by domestic investors and the ICSDs are used by cross-border investors. Therefore, national CSD and ICSDs should be interconnected[3] in order to guarantee the sound functioning and improve the efficiency of the

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A CCP is the entity taking over the counterparty risk in a financial trade; a clearing house is a central location or central processing mechanism through which market participants agree to exchange payment instructions or other financial obligations. The CSD function may include the assumption of the counterparty risk in a financial transaction, but not necessarily.

[3] "Interconnectivity" is defined as the ability to transfer securities between two settlement systems on a delivery vs payment (DVP) basis on the same day without a loss of value.

European financial markets. The most significant barriers to interconnectivity between CSDs and ICSDs exist in Greece, Italy and Spain. There are also issues in Italy and Spain over the role of the local CCP, and in Greece about the lack of a CCP. We will now have a look at these market infrastructure problems at the CSD and CCP level- in the Spanish case.

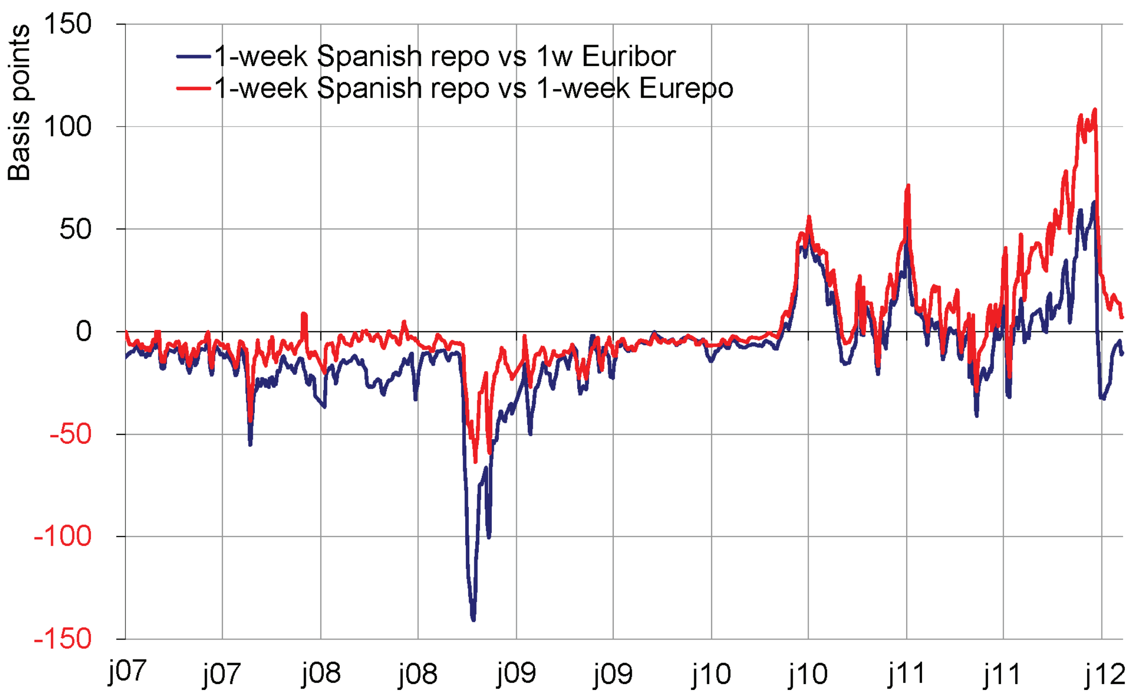
Regarding the Spanish CSD, Iberclear, a number of interconnectivity issues have been identified, the most important being the following: First, members of Iberclear are prohibited from failing to deliver, which makes them reluctant to trade with non-members (who can fail) and has the effect of isolating the domestic market in Spanish government securities. Second, only foreign CSDs can open third-party accounts at Iberclear (the rest of foreign participants can only open own accounts). Opening access to other market users would require a change in the national law. There is agreement to revise this issue in the future, in cooperation with the EU.

The CCP that clears Spanish government securities is MEFFREPO, which is operated by the local futures exchange MEFF. There is a fundamental weakness in the role performed by MEFFREPO in that it would apparently withdraw from clearing in the event of a default by a member, leaving other members to cover the loss. In other words, the CCP would cease to be a CCP in the event of a default. For this reason, the CCP is largely, if not entirely, ignored by international financial intermediaries. It is not possible for other CCPs, such as LCH.Clearnet or Eurex Clearing, to clear Spanish government securities because they are not allowed access to the local CSD.

Spanish government debt repo market problems since spring 2010: intimately related to the deficiencies of Spain's market architecture.

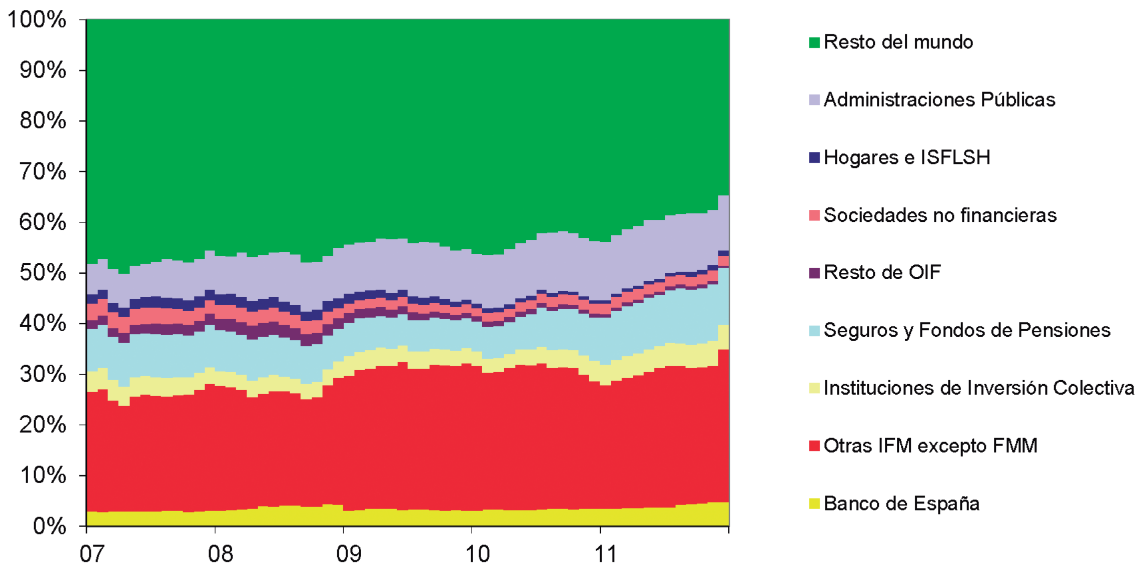
The combination of interconnectivity problems of Iberclear and the deficiencies of MEFFREPO were the main factors behind the structural problems suffered by the Spanish repo market in late spring-early summer of 2010, which greatly compounded the problems generated by the lack of confidence in Spain and its banking system at that time. The effect was clearly evident in

Exhibit 3: Spanish 1-week repo rate vs 1-week Eurepo GC and 1-week Euribor*



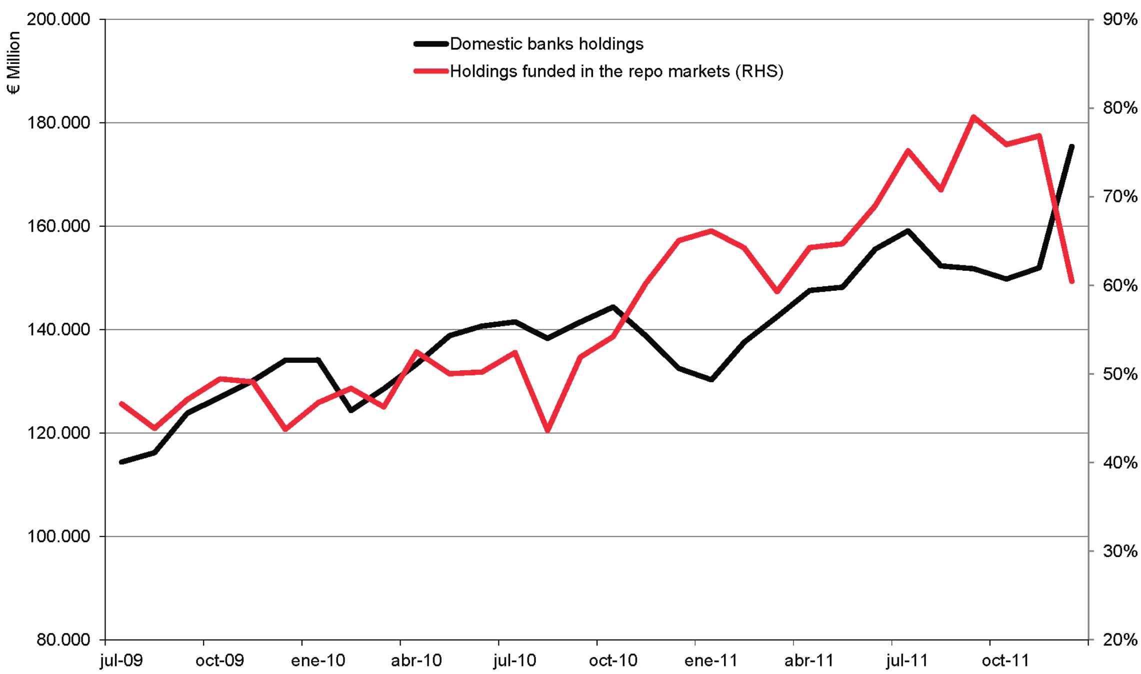
Source: Bank of Spain, EBF, Afi.

Exhibit 4: breakdown of holdings of Spanish government debt: resident (detail) vs non residents.



Source: Bank of Spain, Afi.

Exhibit 5: Spanish domestic banks: holdings and % of holdings which are funded in the repo markets.



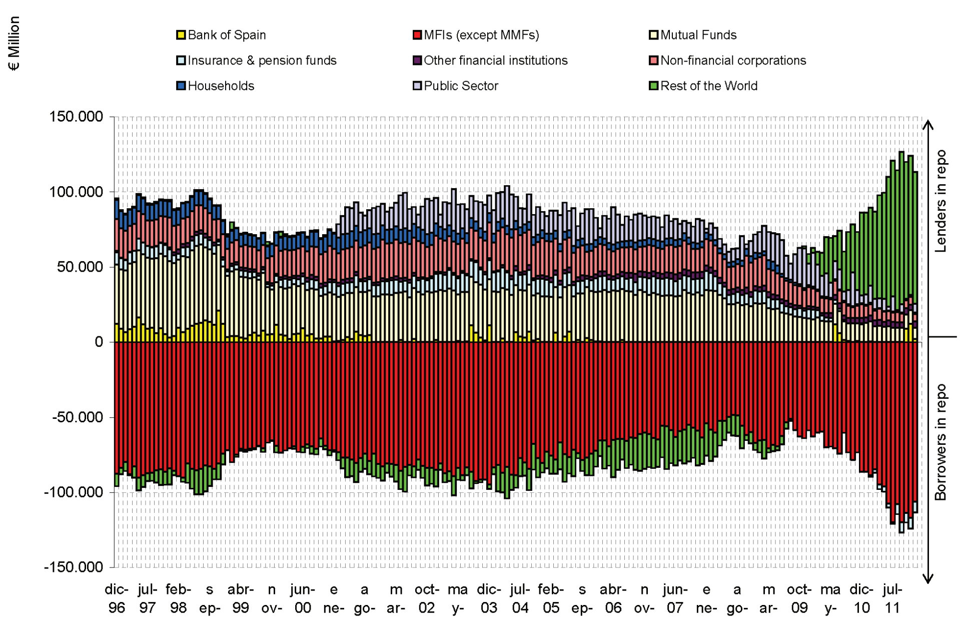
Source: Bank of Spain, Afi.

the evolution of Spanish government securities spreads vis a vis other core European sovereign issuers. Exhibit 3 shows the 1-week repo interest rate for Spanish Government securities compared to Euribor and Eurepo, which turned positive towards mid-June 2010 for the first time since the onset of the financial crisis in 2007. This was due to two reasons: first, the lack of confidence of international investors to enter repo transactions on a bilateral basis with Spanish counterparties (mainly domestic banks, as they hold the larger portions of government debt and consequently rely heavily on foreign counterparties for funding their debt portfolios) due to their perceived credit quality, and second, due to the combination of the lack of interconnectivity of Iberclear with the main European ICSDs and the weaknesses of MEFFREPO, the domestic CCP.

As can be seen in Exhibits 4, 5 and 6, the increase in government debt portfolios at Spanish domestic banks occurred in parallel to the drop in the holdings of international investors. The increasing concentration of debt holdings among domestic counterparties, and the need to keep funding these holdings through the repo markets, resulted in a growing concentration of repo activity with foreign counterparties.

Since the summer of 2010, the larger Spanish domestic banks, driven by the need to find foreign counterparties in order to fund their Spanish government debt portfolios in the repo market, initiated the process of becoming members of those CCPs in which most cross-border repo activity is concentrated (LCH.Clearnet Ltd and LCH.Clearnet SA). This allowed foreign investors to again repo Spanish government debt -due to the mitigation of counterparty risk that the CCP implies and therefore the subsequent softening of the funding stress in the Spanish domestic repo market. It must be noted that only the larger Spanish domestic banks became members of the European CCPs, and that it

Exhibit 6: Spanish domestic banks: holdings and % of holdings which are funded in the repo markets.



Source: Bank of Spain, Afi.

was through their activity in these venues that they could then pass-on (obviously at a cost) the necessary liquidity to the rest of the smaller, domestic banks in Spain. Through this process, a large proportion of the repo turnover activity in Spanish Government securities was reallocated through European CCPs (Eurex Clearing, but especially at LCH.Clearnet -Paris and London) and settled through Clearstream and Euroclear.

In autumn 2011, and coinciding with the renewed tensions in the EMU sovereign bond markets arising from Greece, Portugal, etc, the liquidity and fluidity of repo activity in the European CCPs deteriorated greatly for peripheral debt. Although the main CCPs did not meaningfully increase the margins charged on Spanish and Italian debt repo operations, self protection measures were taken by the members of the CCPs (i.e. capping the volumes on certain sovereign debt securities or reducing repos to very short tenors) that led to a fresh round of stress in the repo markets. As Exhibit 3 shows, the spread of domestically traded 1 week repo on Spanish government debt spiked towards 100 basis points vs Eurepo, a clear sign of severe funding problems.

This deterioration of repo market conditions led the ECB on December 8th, 2011, to take the decision to inject liquidity through two 3 year long-term refinancing auctions held on December 21st, 2011, and February 29th, 2012. This created an incentive for institutions to extend the duration of their repos in order to fund their government debt portfolios. Since the introduction of these 3-year funding operations, the repo turnover in the Spanish domestic market and with Spanish paper at the European CCPs has diminished greatly, showing that most Spanish institutions holding Spanish Government bonds are now channelling most of their repo activity to the ECB. In fact, the ECB is now the main repo market for Spanish and other peripheral sovereign debt, a non-desirable situation in the long term.

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