The Future of the Repo Market

An international conference of academic experts, regulators and market practitioners

Tuesday, 11 June 2013

Hosted by

ICMA International Capital Market Association

Welcoming remarks

- **Martin Scheck**
  Chief Executive, International Capital Market Association (ICMA)

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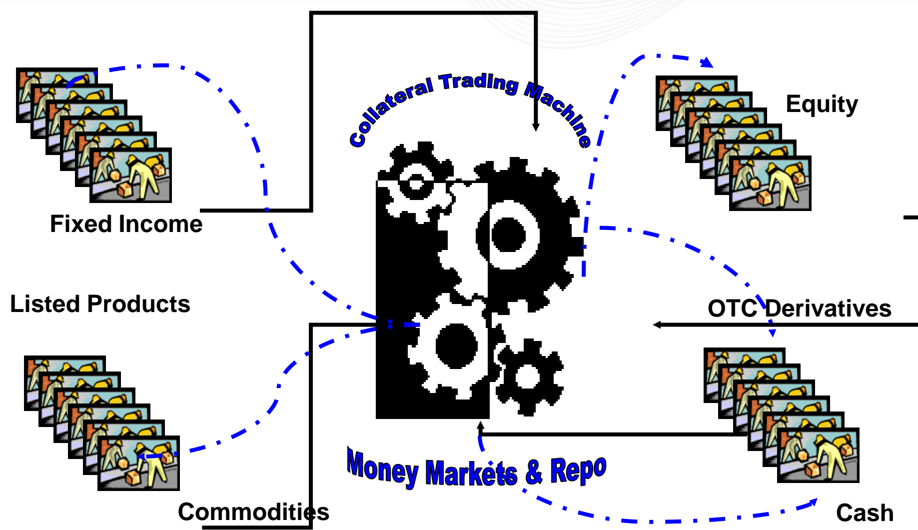
Introduction

- **Godfried De Vidts**
  Chairman, ICMA European Repo Council



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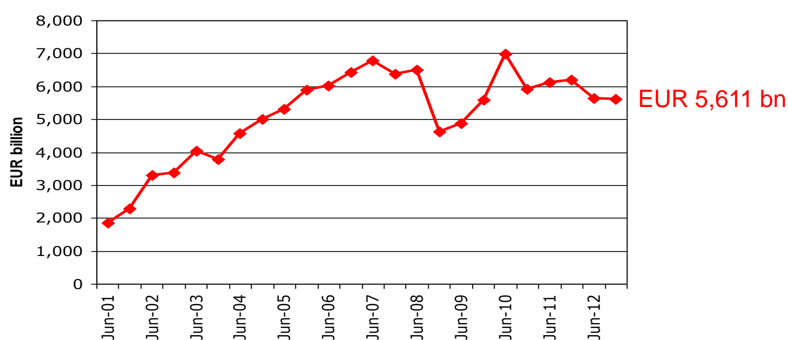
24th European repo market survey, conducted in December 2012

Headline numbers



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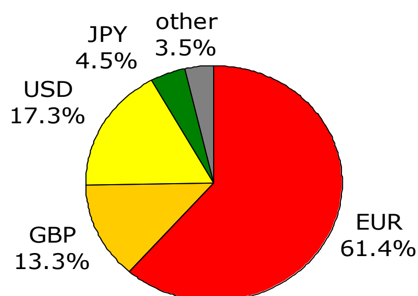
24th European repo market survey, conducted in December 2012

Currency analysis



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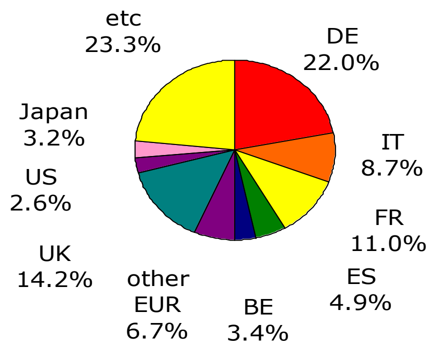
24th European repo market survey, conducted in December 2012

Collateral analysis



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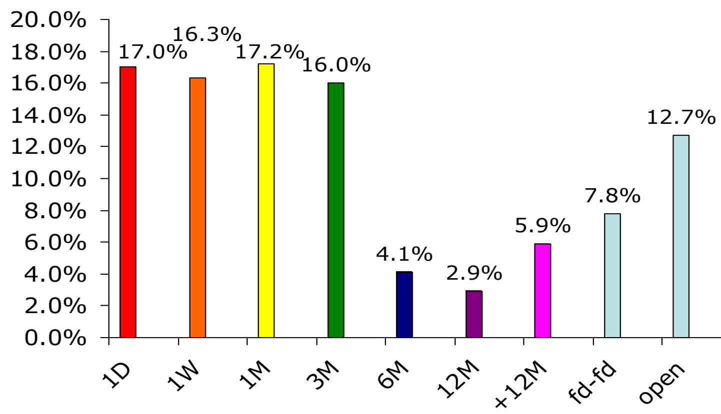
24th European repo market survey, conducted in December 2012

Maturity analysis



ERC work – continuous upgrades to improve robustness

- 12 July 2012
  Floating-rate repo conventions
- 25 May 2012
  ICMA European Repo Council (ERC) Repo Margining Best Practices 2012
- 25 July 2011
  ERC recommendation on Repo matching as a driver for risk reduction (25 July 2011)
- 9 November 2007
  Resolution by the ERC Committee on the Harmonisation of GMRA mini close-out provisions and ICMA buy-in rules (9 November 2007)
- 16 November 2004
  Recommendation regarding fails in negative interest rate repos, approved by the International Repo Council on 16 November 2004
- 19 April 2004
  Confirmation of second leg of buy/sell back transactions (Letter from the ERC committee chairman to firms active in the repo market, dated 19 April 2004)
- 20 August 2003
  Repo Trading Practice Guidelines of 20 August 2003

Keynote address

» **Andrew Hauser**
Head of Sterling Markets Division, Bank of England

Panel Session – What actually happened in the repo and other financial markets in 2007-2009?

The trauma of the events in 2007-2009, particularly the failure of Lehman Brothers, is seared into the collective memory of financial policy-makers, regulators and markets. But, with the benefit of hindsight, do we really understand what happened and what role was played by repo? Was repo a stabilising influence or did it pull the rug from under Lehman Brothers?

- Moderator: Karel Lannoo, Chief Executive Officer, Centre for European Policy Studies
- Panellist: Michael Cyrus, Head of Short Term Products, Deka Bank
- Panellist: Antoine Martin, Vice President and Function Head Money and Payments Studies Function, Federal Reserve Bank of New York
- Panellist: Greg Markouizos, Managing Director and Global Head of Fixed Income Finance, Citigroup

Lessons, I learned

1. **Pooling the unsecured and secured short term funding businesses ensures more transparency, better pricing and better management of funding mismatches**
2. **Collapsing a Repo Book may have limited effects on your overal term transformation and liquidity position because most repo business is being done on a match book basis**
3. **Every bank operating a Repo & SecLending business need to have a Collateral Policy. The Collateral Policy gives a framework for doing transaction without prior risk approval**
4. **While most risk is measured on a „netted“ basis (e.g. Cash vs. Collateral) measuring gross exposures adds a great deal of transparency to your trading operation**
5. **Every Bank needs to have Funding Mismatch Reports (Liquidity Balance Sheets) for Trading Books**

DekaBank

Keynote address

- **Francesco Papadia**
  Chairman of the Board of the Prime Collateralised Securities (PCS) and former Director General, Market Operations, European Central Bank

In order to get an idea about the future let´s look first at the **past**:

1. The role of the Repo market during the crisis
2. The trend growth of the Repo market

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The Repo market has lessened the burden on the ECB during the crisis

Change in euro money market turnover and increase in Eurosystem balance sheet (2008 – 2011)

Reduction in unsecured turnover (bn)	Increase in secured turnover (bn)	Net reduction of turnover (bn)	Increase in Eurosystem balance sheet (bn)	Substitution between Eurosystem and market intermediation (%)
(1)	(2)	(3) = (1) – (2)	(4)	(5) = (4) / (3)
327	212	115	113	98

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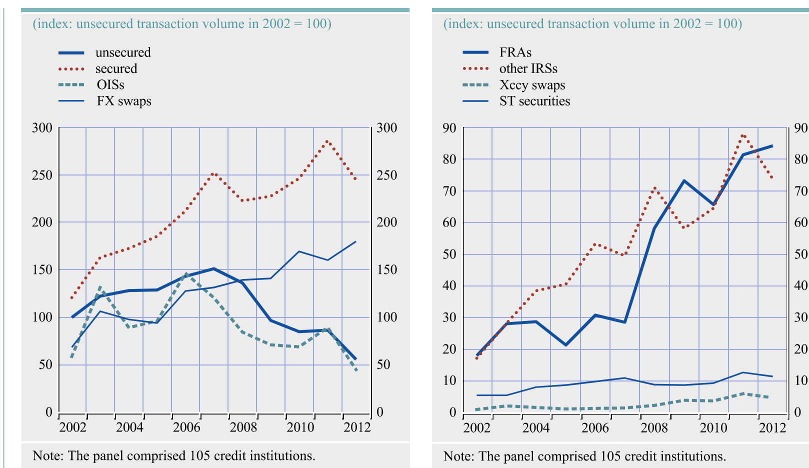
The Repo and the swaps are the real winners in the money market

Average daily turnover in various segments



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The Repo segment dwarfs the unsecured one

»

Table 6 Aggregate euro money market survey volumes for 2012

(EUR millions)

	Constant panel	Total panel
Unsecured	94,443	127,805
lending	32,373	52,840
borrowing	62,070	74,965
Secured	414,359	446,505
lending	178,399	192,257
borrowing	235,960	254,248
Derivatives	657,363	810,715
OIS	76,516	100,322
FX swaps	305,185	391,074
IRS	124,940	150,144
Xccy swaps	7,992	12,862
FRA	142,730	156,313
Outright transactions	19,510	23,244
TOTAL	1,185 ,675	1,408,270

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Let´s now turn to the **present** and specifically to the attitude of regulators towars Repo

- Liquidity regulations are favouring the secured money market segment
- The Repo (and the swaps) segment are looked at by central banks as source of reference rates immune from credit risk

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Let´s now move to the **future..**

- Availability of collateral
- Effects of the financial transactions tax on the Repo segment

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To shift the collateral supply curve:

- Improve the quality of assets
- Improve risk management techniques (portfolio approach)

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The FTT: unsettled thoughts, still two comments

- Nice Pigovian taxes can be found in the financial sphere
- It is not obvious that the FTT is one of them

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Why tax secured interbank lending but not unsecured one?

- Making secured lending uneconomical for (variably short) maturities?
- Forcing a permanent shift of interbank transactions from the market to the central bank?

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Conclusions

- The growth of the repo market has avoided even more of a dislocation of the money market during the crisis, thus lessening the burden on the ECB to avoid that this would translate in even more acute economic consequences
- The repo market has achieved brisk trend growth since the launch of the euro, such that it now dwarfs in importance the unsecured market
- Banking and liquidity regulation is favouring the growth of the repo market with respect to the unsecured interbank market
- The repo market is seen by central banks as a possible source of reference rates alternative to LIBOR and EURIBOR

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Conclusions/2

- There are tools that the industry could pursue to increase the availability of collateral for repo operations
- Well targeted taxes on some financial activities can kill two birds with one stone, raising revenue and remedying negative externalities
- The proposed FFT doesn't seem to belong to this kind of taxes as it would tax repo interbank lending but not unsecured one, leading to a dry-up of repo lending on shorter maturities and possibly to a severe dry up of the entire money market, to be offset by central bank intermediation

Panel Session – Is repo an unstable source of funding? The issues of procyclicality of leverage, interconnectedness, asset encumbrance, collateral re-use and fire sales

Is repo a source of instability or does it just manifest structural cyclicality in the system? Is the repo market therefore the appropriate pressure point to address these problems or will macroprudential controls such as minimum mandatory haircuts be ineffective and create unintended consequences?

- Moderator: Duncan Wales, Group General Counsel, ICAP plc
- Panellist: Richard Comotto, Senior Visiting Fellow, ICMA Centre
- Panellist: Ed McAleer, Managing Director, Morgan Stanley
- Panellist: Andrew Metrick, Professor of Finance and Management, Yale School of Management
- Panellist: Habib Motani, Partner, Clifford Chance LLP

Keynote address

- **Manmohan Singh**
  Senior Financial Economist, International Monetary Fund

Demand/Supply of Collateral—a macro picture

Manmohan Singh
Senior Economist, International Monetary Fund

Views are of the author only and not attributable to the IMF

Collateral and Money

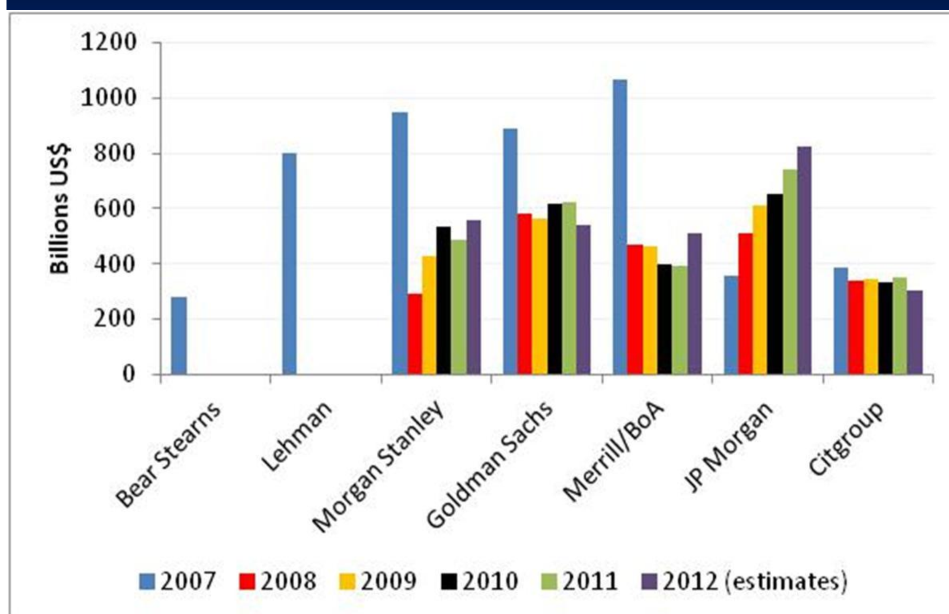
- A great deal of short-term financing is generally extended by private agents against financial collateral.
- Analogous to the traditional money-creation process, the use and re-use of pledged financial collateral facilitates financial transactions and contributes towards the supply of credit to the real economy.
- Collateral is like high-powered money where the haircut is like the reserve ratio, and the number of re-pledging (the 'length' of the collateral chain) is like the money multiplier.

<The term re-pledged is a legal term and implies that the dealer receiving the collateral has the right to re-use in its own name via title transfer.>

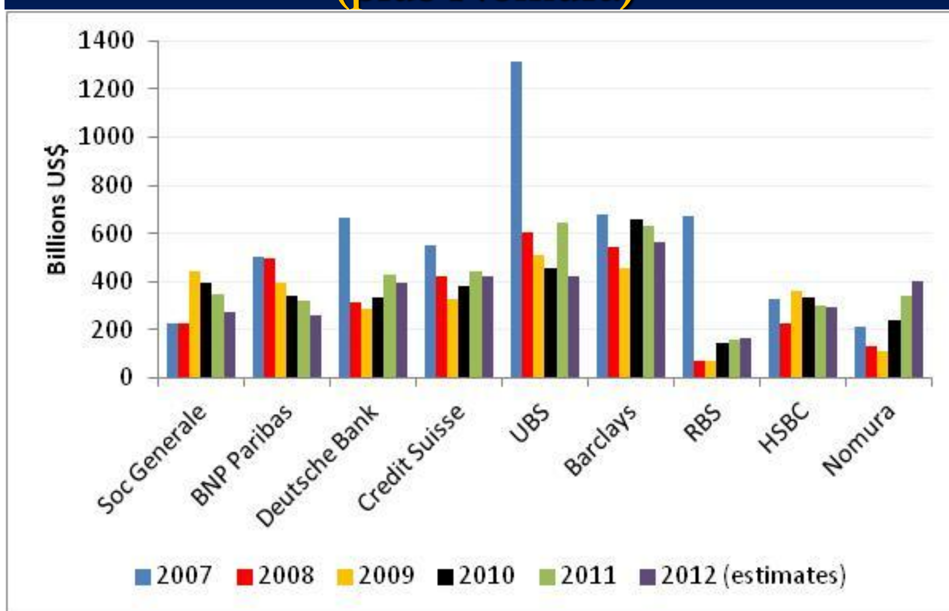
The suppliers of collateral to the 'street'(or dealers

- The key sources that provide collateral to the street are (a) hedge funds, (b) custodians, generally on behalf of pension, insurers, asset managers, official sector accounts (SWFs, central banks etc).
- Generally, hedge funds are the largest supplier of collateral to the "street" that intermediates the bank/nonbank nexus.
- Others such as pension funds, insurers, official sector accounts generally "lend" their collateral for short tenor to enhance the overall return to their securities.

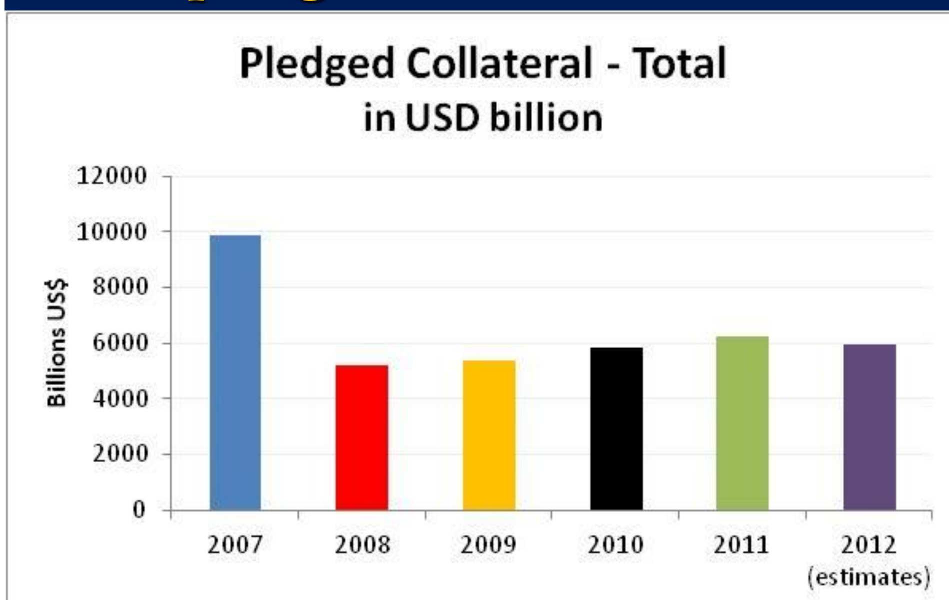
Pledged Collateral—US banks



Pledged Collateral—European banks (plus Nomura)



Total pledged collateral—all banks



Collateral from Hedge Funds

Hedge Funds largely finance their positions in two ways.

- **First**, they can either pledge collateral for reuse to their prime broker in lieu of cash borrowing from the PB (via rehypothecation)--usually for equity-related strategies < In the U.S., SEC's Rule 15c3a and Regulation T generally limits PB's use of rehypothecated collateral from a client>. Non US jurisdictions such as UK via English Law do not have any limits.

- **Second,** HFs also fund their positions via repo(s) with dealers who may or may not be their PBs. Typically, *fixed income arbitrage* and *global macro* strategies seek higher leverage and this is done via repo financing.

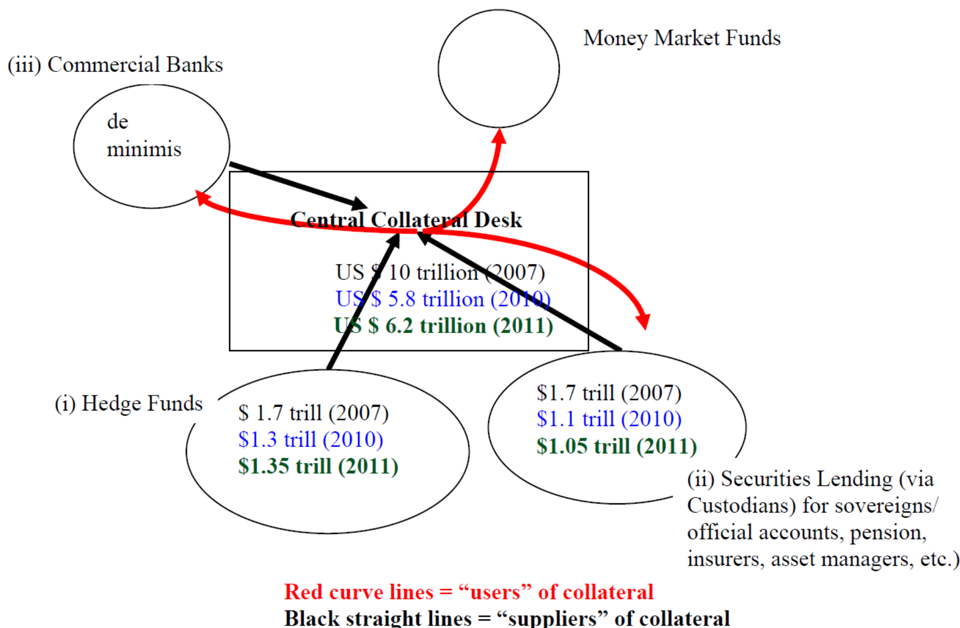
- **HF collateral to the street was about $1.7 trill (2007) and down to about $1.35 trill in recent years. (although AUM is now above 2007, leverage is down relative to 2007)**

The "non-hedge fund" source of collateral—declining due to counterparty risk etc

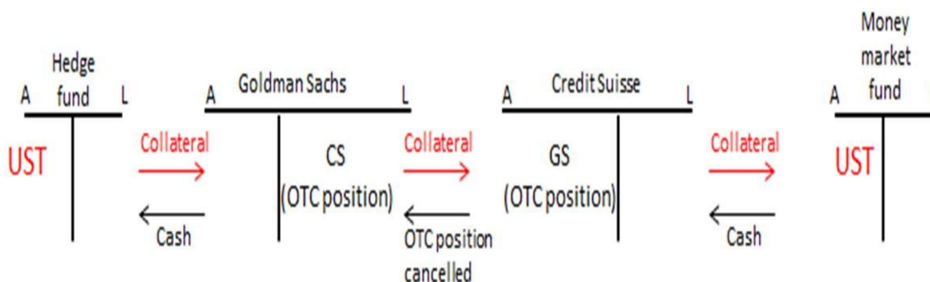
Table 1: Securities Lending, 2007-2911

Collateral Received from Pension Funds, Insurers, Official Accounts etc (US dollar, billions)						
	2007	**2008**	**2009**	**2010**	**2011**	**2012**
Securities Lending vs. Cash Collateral	1209	935	875	818	687	620
Securities Lending vs. Non-Cash Collateral	486	251	270	301	370	378
Total Securities Lending	**1695**	**1187**	**1146**	**1119**	**1058**	**998**

source: RMA



An example of repeated use of collateral (that leads to collateral chains)



Collateral Re-use—

see last column (figures are in trillions!)

Sources of Pledged Collateral, Velocity and Overall Collateral

Year	Sources		"Chain" (velocity)	Overall collateral <"source" times "chain"> (in trillions USD)
	Hedge Funds (in trillions USD)	Others (in trillions USD)		
2007	1.7	1.7	3	10
2010	1.3	1.1	2.4	5.8
2011	1.3	1.05	2.5	6.1

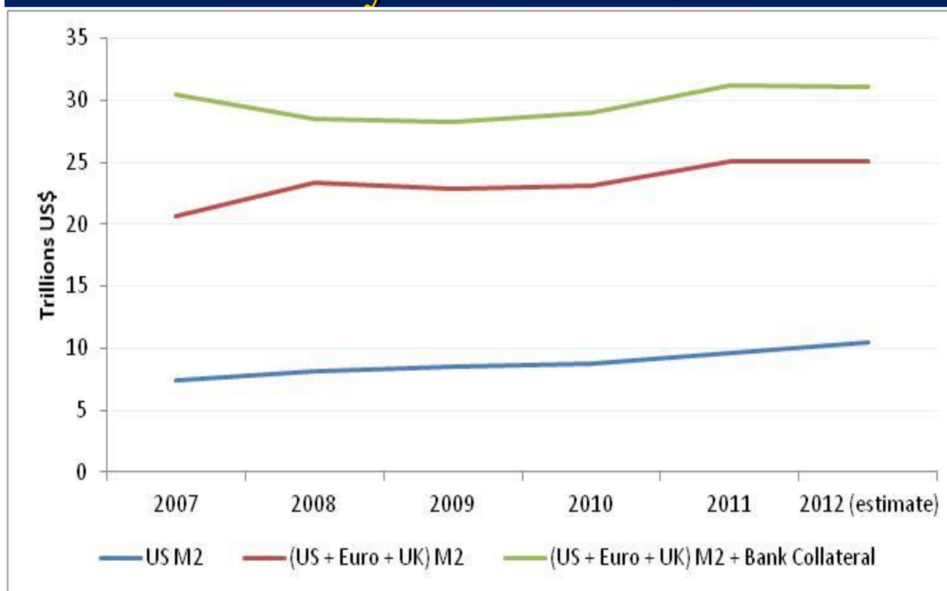
Are there any other "buckets" that are sources of pledged collateral – Tri Party Repo or SIVs

- The tri-party repo market ($1.7 trillion) in the US is via 2 clearing banks, BoNY Mellon and JP Morgan. Though not explicit, a backstop by the Fed is assumed by the market. Similar sized market in Europe but generally Euroclear/Clearstream do not provide intra-day credit

- However, such pledged collateral sits with custodians and is not rehypothecable to the street.—only to the primary dealer club! The collateral is segregated and identifiable in case of default of the collateral provider. This also explains that haircuts during the 2008 crisis were minimal when dealing within the tri-party system, relative to the 'street'.

- SIVs-- these structures were securitization-based and against specific pieces of collateral,; thus it was difficult to raise funding by pledging collateral from such vehicles

Overall Financial Lubrication-- Money and Collateral



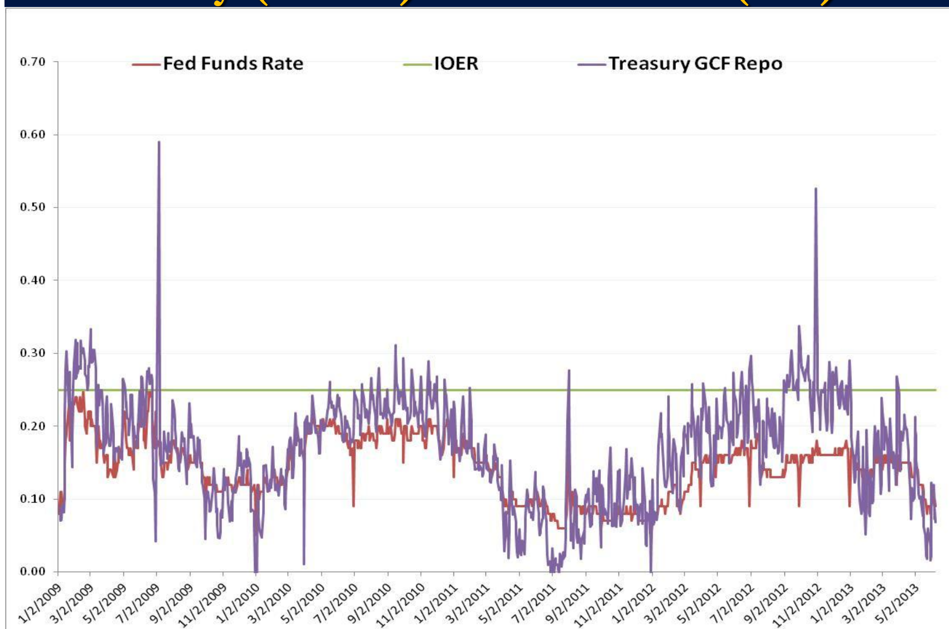
Price of Money vs. Price of Collateral

- Central banks can create money by fiat; but not collateral (although there are now suggestions to produce "safe assets" as public good)
- Money's price is mapped by interest rate; collateral price (by repo rate –e.g., general collateral (GC) etc.
- The banking system in not presently mobilizing their deposits at central bank (in the form of "excess reserves"). In the US this is due to IOER (interest on excess reserves). If this is the "price of money" the banks hold on to it and this does not reach the financial system then the price of money *is high relative to other assets.*
- If banks are not lending "excess reserves", the only way they will lend is against collateral ;so repo rates are low(collateral in demand)

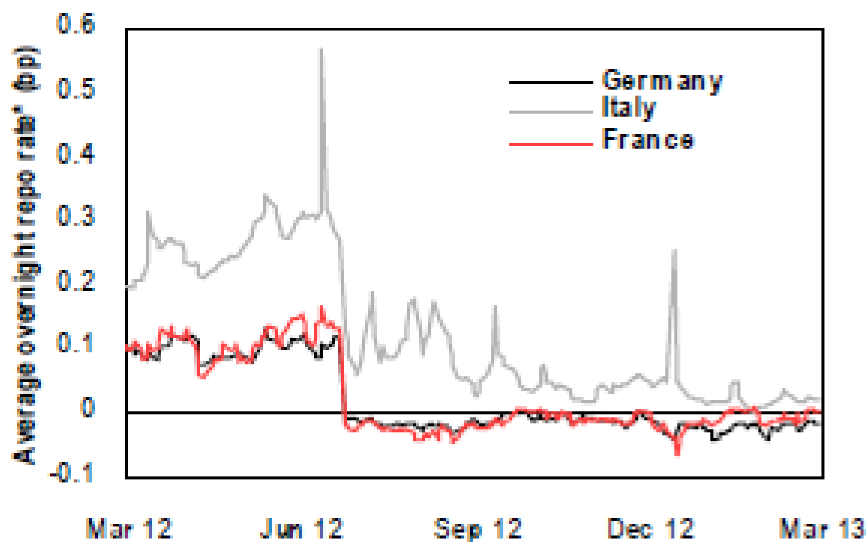
Why does price of good collateral vary

- Financial lubrication takes the form of "cash or cash-equivalent" for margins etc; so there is a choice to post money or good collateral.
- In short, the "price" of good Eurozone collateral (i.e, repo rates for short tenor German/French/Dutch or related Danish/Swiss bonds) remains low (and even negative) relative to US Treasury bills repo.
- Part of this is explained through the usual technical issues (home bias, fx hedge,size/liquidity in Eurozone debt markets, peripheral Europe issues.; cheapest to deliver); or policy actions like Operation Twist for T-bills (that buoyed the repo rate in the US last year).
- Price of money--the IOER of 25 basis points-- in the US pulls UST-bill rates up (so GC rate positive). There is no IOER (deposit rates have been zero since July 2012) in Eurozone there is no such pull; hence some good collateral repo rates are negative

US money (IOER) and collateral (GC) rates



ECB Deposit Rate and some EU repo rates

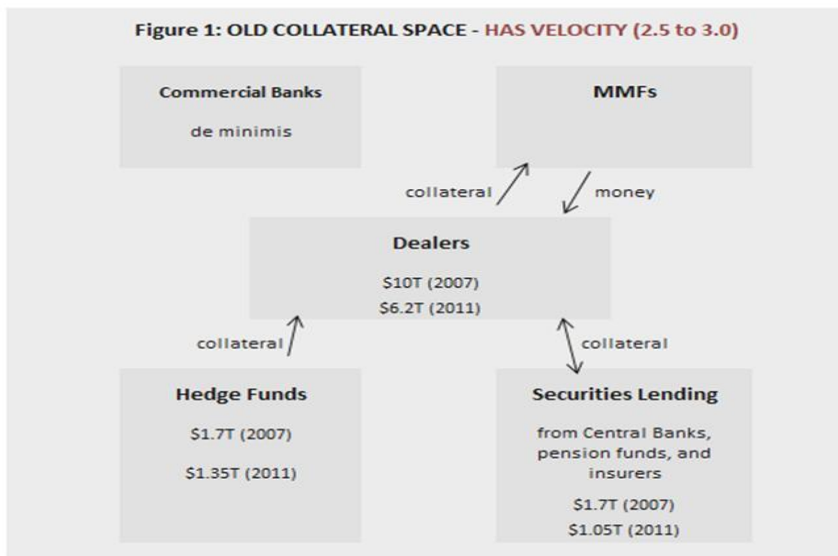


The changing collateral space—from "old" to the "new" era

In the "new" collateral space, the increasing role of central banks regulations, and collateral custodians is significantly changing the collateral landscape.

- (i) unconventional monetary policies pursued by central banks
- (ii) regulatory demands stemming from Basel III, Dodd Frank, EMIR etc that will entail builder collateral buffers at banks (LCR), CCPs etc;
- (iii) collateral custodians who are striving to connect with the central security depositories (CSDs) to break out of silo(s).
- (iv) supply of new collateral (assume D/GDP ratio does not increase significantly in developed countries).

This is what we saw earlier…

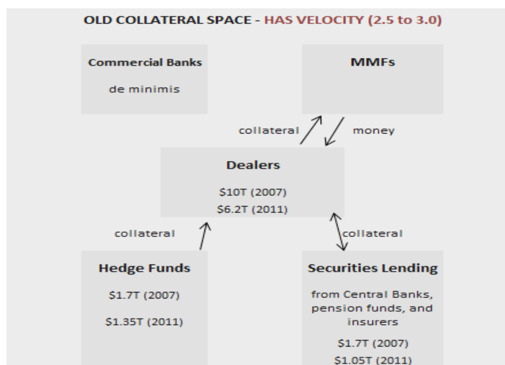


THE CHANGING COLLATERAL SPACE

(-)

REGULATIONS - WILL REDUCE COLLATERAL VELOCITY
estimated $2-$4Trillion additional collateral needed

eg. Liquidity ratios | **eg. CCPs** | **eg. Non-cleared OTC derivatives**



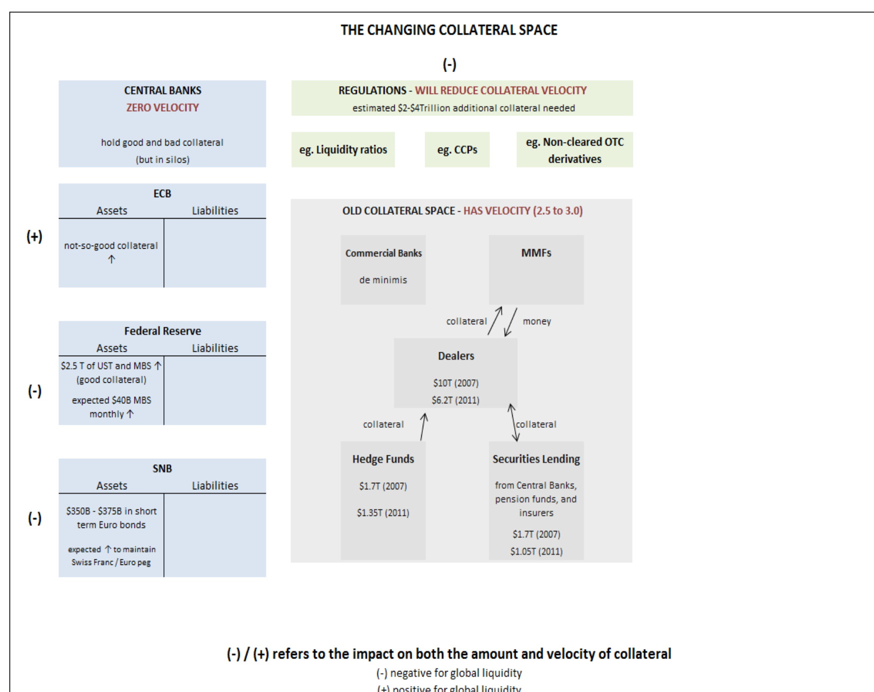
(-) / (+) refers to the impact on both the amount and velocity of collateral
(-) negative for global liquidity
(+) positive for global liquidity

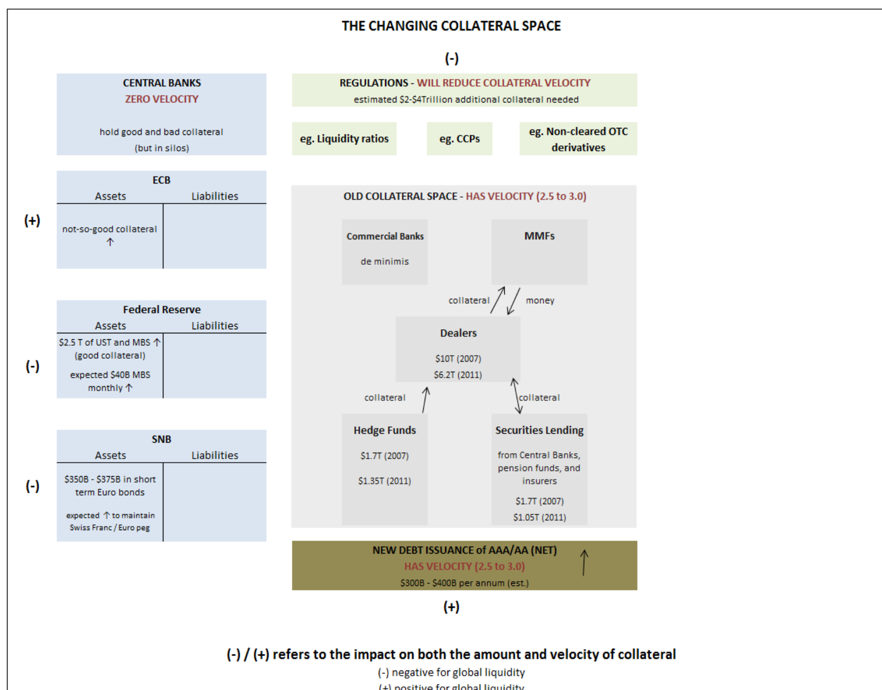
Table 1: Under-collateralization in the OTC Derivatives Market

	Gross Market Value							
	H2 2008	H1 2009	H2 2009	H1 2010	H2 2010	H1 2011	H2 2011	H1 2012
GRAND TOTAL	35,281	25,314	21,542	24,673	21,296	19,518	27,285	25,392
A. Foreign exchange contracts	4,084	2,470	2,070	2,524	2,482	2,336	2,555	2,217
B. Interest rate contracts	20,087	15,478	14,020	17,533	14,746	13,244	20,001	19113
C. Equity-linked contracts	1,112	879	708	706	648	708	679	645
D. Commodity contracts	955	682	545	457	526	471	487	390
E. Credit default swaps	5,116	2,987	1,801	1,666	1,351	1,345	1,586	1187
F. Unallocated	3,927	2,817	2,398	1,788	1,543	1,414	1,977	1840
Gross Market Value After Netting	5,005	3,744	3,521	3,578	3,480	2,971	3,912	3668

Gross market values have been calculated as the sum of the total gross positive market value of contracts and the absolute value of the gross negative market value of contracts with non-reporting counterparties. The values in the red circle are the gross market value after taking into account legally enforceable bilateral netting agreements. Source: BIS surveys.

Source: Bank for International Settlements (BIS 2012, p. 23).

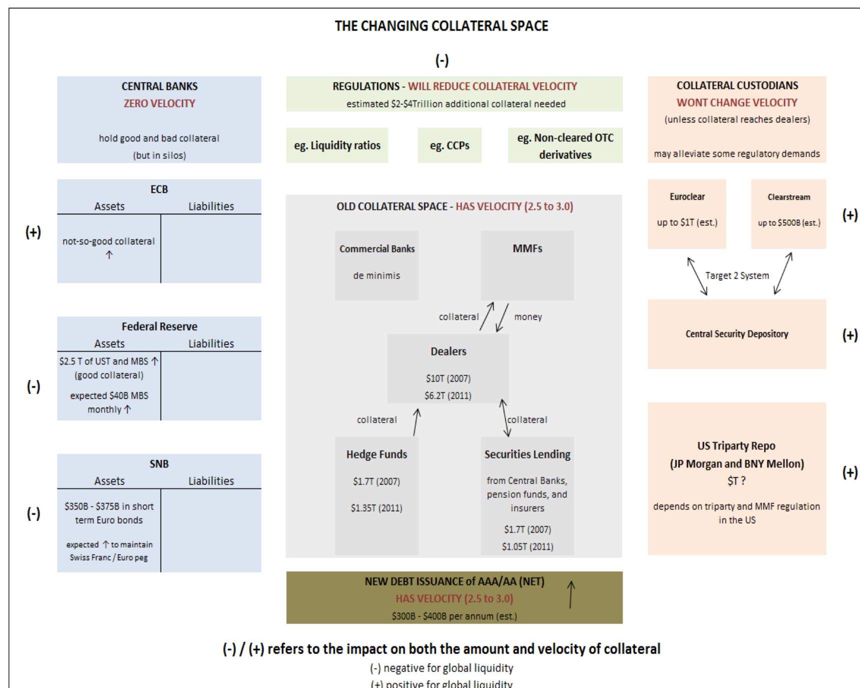




Net supply of AAA/AA new debt issuance

source: Barclays index/JPMorgan/RMA

- Supply of AAA/AA expected has averaged 1 to $1.4 trillion (includes sovereigns + corporates). Markets move AAA very easily and this helps also move other “not-so-good” highly rated collateral.
- Equities are also moved by markets under “pledged collateral”
- However only a fraction 30% to 40% of AAA/AA securities are used in securities lending programs (source RMA database)
- If collateral re-use (say, velocity of 2.5) does not decline, then $300-400 billion new debt inventory may come to market/year (with total impact with re-use of about $1 trillion/year)



Collateral Transformation

- Collateral transformation---can involve bonds or equities—as long as it has a market clearing price and not illiquid (e.g., US Treasuries, IBM shares etc).
- Collateral movement is "opening the silos"– the custodian do not own the collateral but may facilitate client's connectivity (collateral highway for transformation). Euroclear/ Clearstream/ BoNY and JPMorgan may be able to better optimize available collateral that does not move at present
- Dealers are also interested in collateral transformation. However transforming a BBB to AA from off balance sheet—via pledged collateral -- may be limited due to the (new) liquidity ratio of Basel III (thus an important constraint due to Basel III)

Custodians, Dealers & Collateral Silo(s)

- Eurozone had €14 trillion in collateral– (i) much of it was locked in "depositories" and thus not easily accessible for cross border use or(ii) the asymmetry of demand for collateral in 'peripheral' countries relative to 'core' countries did not make the € 14 trillion figure meaningful.
- However, Euroclear and Clearstream (the key hubs for Eurozone collateral) are working with the local CSDs (or national/central security depositories) to alleviate collateral constraints. The interconnections to the CSDs will be via the Target 2 Securities (T2S) system that will provide a single pan-European platform for securities settlement in central bank money.
- In the US, JPMorgan and BoNY may also improve collateral flows from within the U.S. Tri-party system; however regulatory reforms on the tri-party, money market funds, Fannie Freddie, will play a role in this effort.

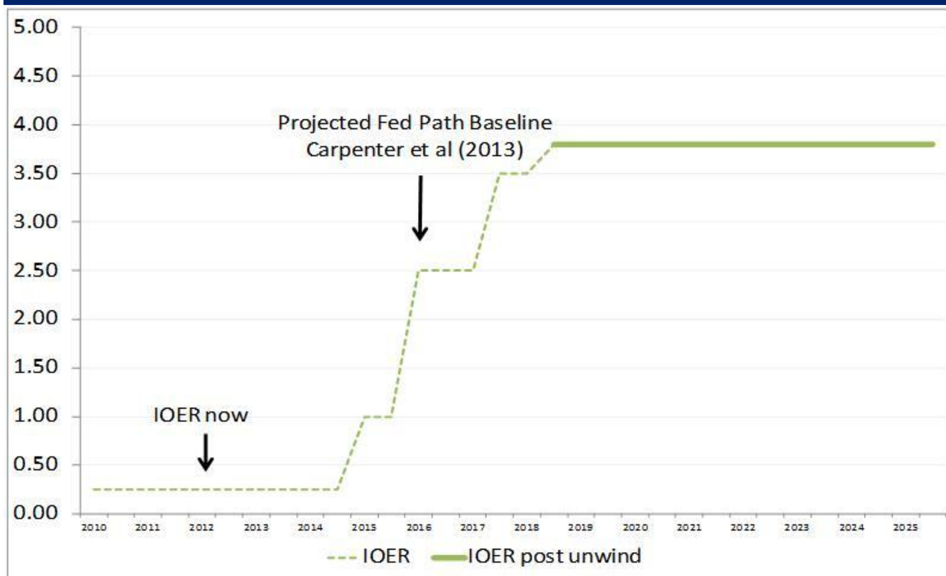
Some policy observations

- **The *re-use* of collateral is fundamental in understanding the gap between demand and supply**. Reserve Bank of Australia's suggestion is similar to collateral transformation but at a penalty rate (about 15 basis points plus appropriate haircut) by using good assets from their own balance sheet, but this would keep collateral re-use rate high.

$$\text{Demand}_{\text{collateral}} = \text{Supply}_{\text{collateral}} * \text{re-use factor}$$

- Central banks may want to "rent" the good collateral they hold, especially if their goal is to keep the good/bad collateral ratio high "in the markets" . Recent academic/BIS thinking—Gourinchas/Jeanne(BIS).. of providing shortage of "safe assets" as a public good. **Why not increase re-use rate** --as debt issuance office may not favor short tenor debt like in the US today
- Keeping good collateral in market (and thus high collateral reuse rate) may be preferred to the "more subsidized haircut" <Bagehot (1873) suggests central banks provide the LOLR for good collateral (or "not so good" collateral but at market prices). >

Monetary Policy Rate in the medium term—as projected by Fed's paper (baseline consensus forecast). Repo rate will matter!



Panel Session – The future market for collateral and the prospect of systemic shortages

How are new regulation and technology reshaping the repo and other markets for collateral? Are regulatory imperatives such as mandatory use of CCPs creating a collateral shortage? What would be the consequences for the financial system and real economy, and how could a shortage be addressed?

- Moderator: Godfried De Vidts, Chairman, ICMA European Repo Council
- Panellist: Cornelia Holthausen, Principal Advisor, European Central Bank
- Panellist: Patrick Pearson, Head of Financial Markets Infrastructure Unit, European Commission
- Panellist: George Handjinicolaou, Deputy CEO and Regional Director for Europe, Middle East and Africa, International Swaps and Derivatives Association
- Panellist: Stefano Bellani, Managing Director, Head of the EMEA & Emerging Markets Financing desks, J.P. Morgan

Closing remarks

- **Godfried De Vidts**
  Chairman, ICMA European Repo Council