



BANK OF ENGLAND

# Speech

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## Central bank policy on collateral

Paper by

Paul Fisher, Executive Director, Markets, member of the Monetary Policy Committee and member of the interim Financial Policy Committee, Bank of England

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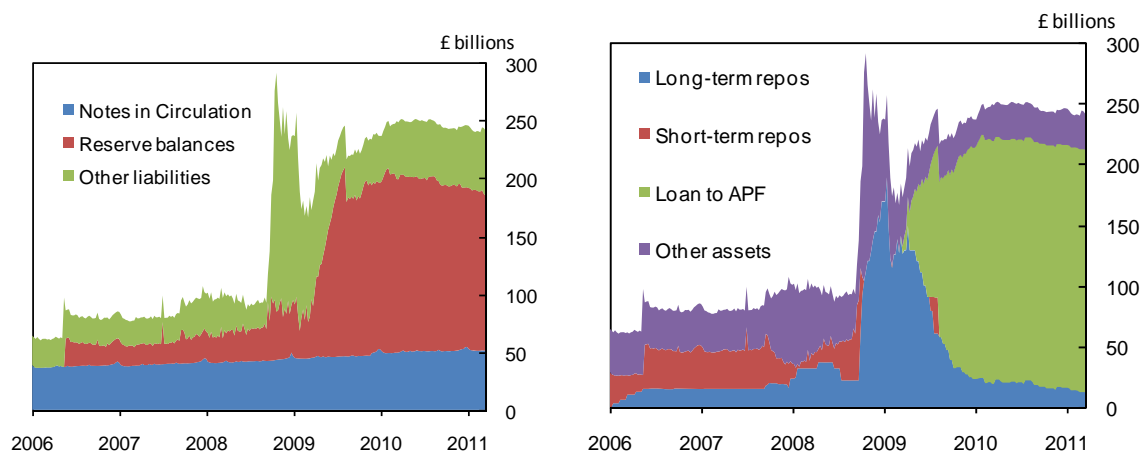
The Bank of England, like most central banks, has two core purposes. The first is to maintain price stability, defined by a 2% CPI inflation target, mandated by the government on an annual basis. The second is financial stability, which entails detecting and reducing threats to the financial system as a whole. The Bank meets these objectives through the use of its balance sheet. It supplies banknotes and central bank reserves (the most liquid and risk-free forms of payment in the economy) to the banking system, in a process which helps to anchor short-term market interest rates around the Bank Rate set by the Monetary Policy Committee (MPC).<sup>1</sup> And to support financial stability, the Bank provides liquidity insurance to the banking system as a whole. It does so by offering to supply additional reserves (or UK government debt in some operations) against a wider range of collateral and at longer maturities than would be necessary just to set Bank Rate.<sup>2</sup>

During the financial crisis, the provision of liquidity insurance to the banking system caused an expansion in the Bank's balance sheet from around £80bn in 2006 to around £250bn in early 2010. Charts 1 and 2 below show the evolution of the Bank's balance sheet through the crisis. In addition the Bank provided liquidity through a collateral upgrade in its Special Liquidity Scheme (SLS) introduced in April 2008. That involved swapping £185bn of treasury bills in exchange for high quality but temporarily illiquid private sector collateral (as is conventional for a collateral swap, this was done off-balance sheet).

**Bank of England consolidated balance sheet <sup>(a)</sup>**

Chart 1: Liabilities

Chart 2: Assets



(a) Data to 16 March 2011

A significant expansion of the balance sheet was certainly the right thing to do in the face of the biggest ever global financial crisis – as Walter Bagehot wrote as early as 1873, “to avert panic, central banks should lend

<sup>1</sup> See the ‘The Framework for the Bank of England’s operations in the Sterling Money Markets (the ‘Red Book’)’ at <http://www.bankofengland.co.uk/markets/sterlingoperations/redbook.htm> .

<sup>2</sup> See Fisher (2010), ‘Managing Liquidity in the System: the Bank’s Liquidity Insurance Facilities’ at <http://www.bankofengland.co.uk/publications/speeches/2010/speech450.pdf> .

early and freely to solvent firms, against good collateral and at high rates.” But such a huge expansion in the balance sheet was by no means simple to execute, nor risk-free.

Like any other business, especially one in the public sector, the central bank needs to protect its own balance sheet. The consequence of a significant loss could be to damage credibility, threaten independence and impair the central bank’s ability to discharge its statutory responsibilities. A central bank will also be keen to avoid the moral hazard involved in encouraging a commercial firm to undertake particular types of risk-taking activity. There are certain principles that a central bank should therefore observe:

- (1) It should not lend to any bank whose prospective solvency is seriously in question.
- (2) It should always take sufficient, good-quality collateral against its lending.
- (3) Central bank operations should be designed to deliver public policy objectives, not to support the profitability of any particular commercial firm.

That may sound like a simple set of rules, but there are deep policy issues to consider when it comes to implementation. In particular, there are policy decisions required in the following dimensions:

- (i) eligibility (what collateral should be accepted, and what should not);
- (ii) valuations and haircuts (how much is the collateral worth?);
- (iii) what fees should apply, if any, and
- (iv) limits (how much diversification should we seek across the collateral delivered?).

These are important questions for the banking system as a whole, and have presented new and complex risk management challenges for central banks over the past few years. It is on these issues that we focus in this paper.<sup>3</sup> To start with, we briefly outline some of the main features of the Bank’s lending operations.

### **The Sterling Monetary Framework**

The Bank’s main activity in the sterling market prior to the financial crisis was via its short-term repo open market operations (STR OMOs). Those regular weekly operations provided the banking system with the right level of reserves such that short-term market interest rates would remain close to Bank Rate set by the MPC.<sup>4</sup> In addition, in order to reduce the size of weekly STR OMOs to a manageable size, the Bank undertook longer-term repo OMOs (LTR OMOs) of 3, 6, 9 and 12 months maturity. The remaining operation of note was the Standing Facilities in which a commercial bank could borrow from, or lend to the Bank overnight, albeit at a less attractive rate than Bank Rate.

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<sup>3</sup> Further details are available in the Bank’s 2010 Q2 Quarterly Bulletin  
<http://www.bankofengland.co.uk/publications/quarterlybulletin/qb100201.pdf>

<sup>4</sup> These operations were suspended when large-scale asset purchases commenced in March 2009.

The financial crisis, and the associated expansion of the balance sheet to provide liquidity insurance to the banking system, was a true 'game changer' for the Bank of England: the Sterling Monetary Framework has been almost completely redesigned over the past few years. The increased demand for liquidity insurance necessitated a large and rapid expansion in the scale of lending and the range of collateral the Bank took in its operations. In the Autumn of 2007, the Bank extended the range of collateral acceptable in its LTRs (henceforth eLTRs) and increased their size somewhat. In April 2008, in the wake of Bear Stearns' failure, the Bank introduced the SLS. Through that scheme, the Bank eventually lent £185bn of 9-month T-bills against a wide range of private-sector collateral – mostly UK RMBS backed by legacy mortgages – for up to 3 years. Following the failure of Lehman Brothers in September 2008, the Bank further extended the collateral allowed in eLTRs and initiated a massive expansion in its lending at the 3 month maturity, eventually peaking at £180bn in early 2009.

In October 2008, the Bank also introduced a permanent Discount Window Facility (DWF), which can provide liquidity to counterparties on a bilateral basis against a wide range of collateral, ranging from US treasuries and German bunds to self-originated ABS. The Standing Facilities which had played this role were re-launched as the Operational Standing Facilities (OSFs), more clearly intended to cope with operational disruptions and short-term market volatility. More recently, in June 2010, the Bank replaced the temporary eLTRs with permanent Indexed Long-Term Repo (ILTRs) operations that regularly offer the system 3 and 6 month liquidity, against a wide pool of eligible collateral.

In designing its permanent liquidity insurance operations, the Bank was very mindful of the need to balance the benefits to systemic stability, the incentives for banks to manage liquidity risk prudently, and the need to minimise the risk taken onto the Bank's balance sheet. In particular, the aim of the Bank has been to leave the credit and market risks associated with collateral with the counterparty, so that we only provide the intended liquidity insurance and not any official underwriting of the underlying risks.

Underpinning these objectives are some additional underlying principles:

- (a) the Bank does not accept any collateral that it feels it cannot value and then risk-manage effectively;
- (b) the Bank's prices for lending in its liquidity insurance operations can vary with the liquidity of the collateral delivered and the amount lent, so that use of these facilities only becomes attractive in stressed conditions.

These principles ensure that the Bank can manage its own risks prudently and that counterparties are encouraged to manage their risks similarly.

## **Eligibility**

The Bank's risk preferences are very different from those in commercial financial institutions. Like a commercial bank, collateral bestows post-default recovery value. But unlike commercial banks, we do not use collateral for liquidity management purposes. The Bank does not re-pledge collateral to raise liquidity for example. The emphasis is on the protection that the collateral offers in a default situation. Although the eligibility of collateral depends on a number of factors, in all cases the collateral must be of sufficiently high credit quality so that it presents a low risk to the Bank in the event of a default by a counterparty.

The Bank's operations vary in their policy objectives, and so have different eligible collateral pools which are tailored to match the policy goals. In operations designed solely to implement monetary policy, only a narrow range of collateral is allowed. By design, these operations will normally involve lending at close to Bank Rate. The Bank's counterparties have a financial incentive to optimise their use of collateral in these operations by selecting the cheapest to deliver. If any relatively illiquid or lower credit securities are allowed in the narrow collateral set, then the commercial banks will have an incentive to exploit that premium. That would mean that the central bank's monetary policy operation could become a regular source of funding (and profit) for the firm. This can matter if, for example, it creates distortions in demand for those lower quality assets. In the Bank of England's monetary policy operations – the STR OMOs and the OSFs – eligible collateral includes only securities issued by those sovereign issuers of the highest credit quality and which are expected to remain liquid in all but the most extreme circumstances.

In providing liquidity insurance operations, the policy objective is to provide liquidity under stressed conditions and this can be most effectively done against a wider collateral set, although similar adverse selection concerns can apply. Where collateral is of differing market value, that ideally needs to be reflected in the price of lending so that there are no market distortions. The Bank has a number of different collateral pools to reflect this. The (first) 'wider' pool is available for use in the Bank's Indexed Long-Term Repo (ILTR) operations and includes both the narrow collateral set and certain private sector securities which would be expected to remain liquid in most conditions (including the debt of a number of other sovereigns and certain third-party originated ABS). The ILTRs allow firms to bid to get reserves against either the narrow or this wider collateral set at different prices. The Bank decides how much is allocated against wider collateral, depending on how much the commercial banks bid for it (ie reflecting market demand).<sup>5</sup> It also meets other policy objectives such as providing a signal about the degree of stress in the market.

A yet wider range of collateral is eligible in the Bank's Discount Window Facility (DWF). DWF collateral is divided into four sets, depending on its underlying liquidity. Levels A and B are the same as the 'narrow' and 'wider' sets allowed in OMOs. Levels C and D go wider still (Table 1). The price for drawing depends on the collateral a firm has to offer: the less liquid the collateral, the higher the fee. Essentially, the haircuts play

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<sup>5</sup> See Fisher (2010), "Recent developments in the sterling monetary framework", available at <http://www.bankofengland.co.uk/publications/speeches/2011/speech487.pdf>

the role of protecting the Bank's balance sheet while the fee plays the role of discouraging use except under stressed conditions and therefore avoiding market distortions in normal times. It also compensates the Bank for taking the liquidity risk.

**Table 1: Collateral eligible in post-crisis Bank operations**

	Intraday liquidity	Operational Standing Facilities	Short-term OMOs	Indexed long-term OMOs	Discount Window Facility
Level A 'narrow collateral' (eg high-quality sovereign debt)	✓	✓	✓	✓	✓
Level B 'wider collateral' (eg liquid and high quality mortgage and corporate bonds)	✗	✗	✗	✓	✓
Level C (eg illiquid transferable securitised loans and mortgages)	✗	✗	✗	✗	✓
Level D (eg own-name securitisations and covered bonds, and loans)	✗	✗	✗	✗	✓

The Bank has been encouraging counterparties to 'pre-position' collateral in the DWF, which allows us to conduct ex-ante due diligence and advise on the eligibility and likely advance rate of the collateral (ie the amount we would lend against it) were it to be called upon in a live draw. Pre-positioning provides counterparties with the insurance they need were an unexpected risk to suddenly crystallise. In that scenario, having a pool of collateral that has already been assessed and is ready for use might significantly reduce the delay between an DWF draw-down application and the release of funds.<sup>6</sup> That could be vital in a crisis.

Under exceptional circumstances, the Bank can use its lender of last resort function to engage in Emergency Liquidity Assistance (ELA) outside of the publicly available operations. In principle, that could be against any collateral that the Bank could value and risk manage.

The Bank comes to an independent judgment about which collateral should be eligible in all its operations, based on its own assessment of the credit, liquidity, transfer risk (the risk that collateral/liquidity is not returned by the counterparty because of political intervention) and any legal risk of the counterparty and issuer. By making its own judgment, the Bank ensures that it is not reliant on credit ratings agencies for such assessments.<sup>7</sup> Rather, it forms its opinion drawing on a range of indicators and stress tests.

To judge liquidity, the Bank will typically draw on data about the depth of the market in a range of market conditions, bid-offer dealer spreads and outstanding issuance in making its assessment. On legal and transfer risk, the Bank regularly reviews the jurisdictions in which its counterparties originate. By taking

<sup>6</sup> Of course any drawdown is predicated on the counterparty being expected to remain solvent.

<sup>7</sup> This is in line with new FSB principles aimed at reducing the extent to which ratings are "hard-wired" into financial contracts.

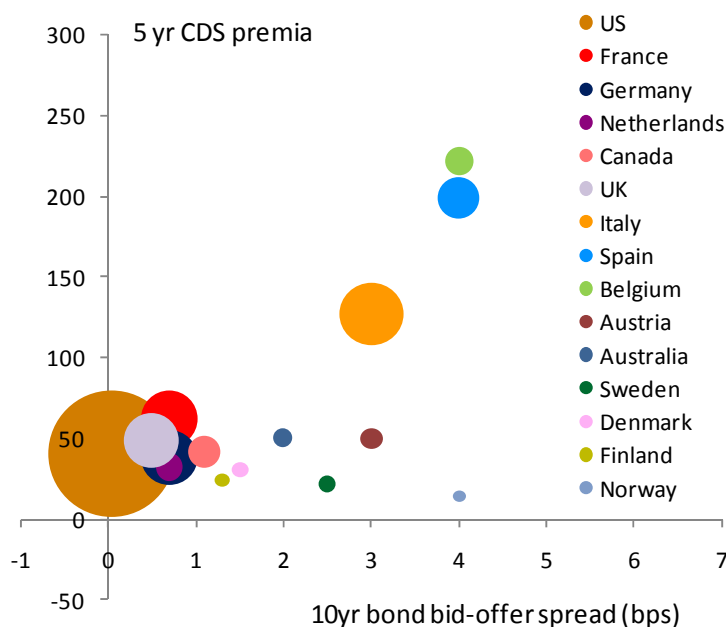
account of a range of indicators, in a non-mechanical way, the Bank is able to assess the suitability of particular issuers' debt securities for a collateral set.

### **Changes to the Narrow Collateral Set**

The Bank's collateral policy is still evolving. On 11 February the Bank announced that, with effect from 1 July 2011, it will accept in its narrow collateral basket sovereign debt securities denominated in Sterling, Euro, US and Canadian Dollars and issued by the UK, the US, Germany, France, the Netherlands and Canada. That is a wider range of currencies than many of its international counterparts. For example, the ECB, Federal Reserve and Bank of Japan only accept securities denominated in domestic currency. The Bank of England takes a broader range of currencies, to make sure that the narrow collateral set is large and deep enough for our monetary policy operations not to cause frictions in the sovereign collateral markets. The risk is offset by additional haircuts for foreign currency.

The choices of which currencies and issuers were to be allowed in the narrow collateral set were decided principally on grounds of liquidity, not credit. A number of AAA issuers are assigned to the wider collateral set principally because their debt stock in issue is too small and/or too tightly held such that bid-offer spreads are relatively wide and/or more volatile in the secondary market. Chart 3 shows a simple analysis of some of these factors.

**Chart 3: Metrics of sovereign credit risk, market liquidity and size<sup>(a)</sup>**



Sources: Bloomberg, TradeWeb and Bank calculations

(a) The size of the bubbles is representative of the total amount of sovereign debt outstanding (in sterling terms). Ireland and Portugal are not shown, as their respective bubbles lie significantly to the north-east of the other countries identified in the Chart. Bubbles for Cyprus, Japan, Luxemburg, New Zealand, Slovenia and Switzerland are also not shown for clarity (although they are accepted as wider collateral). Data as at 11 April.

Those changes were not a response to short-term conditions in some sovereign debt markets. Rather, they form an important part of the transition to the Bank's long-term collateral policy, which was initiated following the October 2008 consultative paper on the Bank's market operations. The changes have expanded the universe of collateral eligible in the Bank's operations. And all the narrow collateral previously eligible will remain permissible under the new regime as either narrow or wider collateral.

### **Valuation**

The Bank's valuation of collateral plays a key role in protecting the Bank against loss in the event of a counterparty default. Where available, the Bank uses market prices to value a security. Where no market price is available or those that are available are judged to be unreliable - for example because they are out of date - the Bank calculates a model price to value a security, based on a standard bond pricing model of discounted expected future cash flows. The Bank uses its judgment to assess the validity of that model price, including by comparing it to similar traded securities where available, and drawing on any relevant market intelligence it has gathered from market participants.

### **Haircuts**

The Bank's haircuts are designed to reduce the likelihood that the Bank would incur a loss if forced to realise and liquidate collateral in the wake of a counterparty default. So the haircuts not only have to protect against the risk of counterparty default (credit risk), but also take account of the likely value of that collateral in stressed liquidity conditions (market risk).

As a result, the Bank adopts a graded approach, with 'base' haircuts varying by the type of collateral offered reflecting the different associated risk characteristics. It includes the likely correlation of risk e.g. that the value of a counterparty's collateral will fall as the counterparty itself becomes stressed. Over and above those base haircuts, and where appropriate, the Bank imposes idiosyncratic haircut add-ons, based on both the type of collateral and the counterparty. In some cases, that reflects stress tests applied to the underlying assets.

Changes in market prices can, of course, affect the value of the collateral the Bank has taken in its operations. As a result, the Bank calls margin on any shortfall.<sup>8</sup> In its sterling operations, the Bank calls margin daily and is moving to that standard for all other transactions.

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<sup>8</sup> The counterparty can meet the margin call by either providing more collateral, substituting some of the existing collateral with higher quality assets which receive a smaller haircut, or returning some of the lent funds.



## **Limits**

The Bank also manages the risk on its balance sheet using concentration limits. Those serve two purposes. First, they help the Bank diversify across *institutions* - for example, counterparties can only bid for a maximum of 30% of the funds on offer in the Bank's ILTRs. That helps ensure that any single counterparty doesn't corner the market for reserves (intentionally or by accident). Second, they help diversify across *instruments* in the wider collateral pool – for example, the Bank requires that the adjusted market value (AMV) of securities that any single issuer delivers to the Bank as wider collateral in OMOs is less than the greater of £250 million or 25% of its total OMO collateral delivered.

## **Other recent policy initiatives**

The Bank has, for a number of years, been refining and improving its collateral policy. In November 2010, the Bank announced that it would allow counterparties to use 'raw' (i.e. unsecuritised) loans as collateral in the DWF. By removing the need to securitise assets, that initiative expands the range of collateral that banks would be able to use in times of stress. And, by removing derivatives and certain structural features embedded in RMBS, it will improve the Bank's ability to manage the risk associated with this collateral. Moreover, this initiative will also allow smaller counterparties, who do not have access to securitisation platforms, or for whom the cost of securitisation is prohibitively high, to access liquidity insurance in times of need.<sup>9</sup> The Bank started processing applications for the pre-positioning of loans in the DWF in January 2011.

At the same time as announcing that it would accept portfolios of loans as collateral, the Bank formalised the next steps in its ABS transparency initiative. Following on from its consultation in March 2010, the Bank announced that it would be phasing out the eligibility of residential MBS and covered bonds that did not conform to certain transparency criteria. During a year-long implementation period, running to November 2011, those securities that do not conform to the new standards will remain eligible for use in the Bank's operations. But over that period, counterparties should be working to ensure that they meet the new transparency requirements. Subsequently, in the year from November 2011 to November 2012, there will be a 12 month transition, during which the Bank will begin to apply increasingly large haircuts to those securities that do not conform to its requirements. By the end of November 2012, assets that do not comply will become ineligible.

The transparency initiative will help the Bank risk-manage collateral more accurately and effectively. That means that less conservative haircuts would sometimes be required to support a given level of borrowing. That will benefit counterparties as well as deliver risk management benefits to the Bank.

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<sup>9</sup> The aim would be for the Bank's risk tolerance to be broadly the same for loans as for a securitisation of those same loans, so as not to provide incentives to submit one form of collateral over the other.

The Bank will also require the data to be made available to investors and other market professionals, so that they will be able to undertake their own risk analysis. That should deliver longer-term benefit to the financial system as a whole –standardising, simplifying and publicising the data should all reduce the mechanical reliance on third party judgments and models, and hence reduce ‘single points of failure’ within the ABS market (although it will be up to market participants to make best use of these changes).

### **Other policy issues on the agenda**

There are some big issues facing the Bank and its collateral management going forward. The immediate challenge is to wind down the SLS to its conclusion in January 2012. The banks have made good, early progress in reducing their use of the Scheme, unwinding the collateral swaps ahead of their contractual maturities. As the remainder of the T-bills lent are returned, the collateral pledged to the Bank will be returned to these counterparties for refinancing in the market. Much of the collateral posted under SLS was RMBS and residential mortgage-backed covered bonds, where conditions in the secondary and repo markets have improved since the financial market seizure beginning in 2007. It is expected that the banks will be able to generate liquidity using their mortgage assets in the private market or by raising funding through other markets. It is noteworthy that the private sector has recently engaged in SLS-like transactions; pension funds have been agreeing to swap highly liquid gilts for less liquid RMBS. The pension fund, as a buy and hold investor, is content to hold a less liquid asset on repo for a higher yield. The bank in the meantime receives a highly liquid asset that can be used to raise cash in the repo market, or held as part of their liquid asset buffer. It will be interesting to see how that private sector collateral upgrade market grows and develops and, in particular, the increased transparency helps pension funds better manage the risks in the collateral.

### **Conclusion**

When people think about Bank of England policy questions, many rush to focus on interest rates and, given our new responsibilities, financial policy decisions. Fewer think about the policy issues associated with implementing those decisions. In this paper, we have tried to set out some of the thinking behind the Bank’s approach to collateral. It is driven by a combination of monetary and financial stability policy objectives and the need to protect the Bank’s own balance sheet. To do that, we look through current market conditions to assess the value of collateral and firm behaviour under stressed conditions. We also try to understand the incentives that we create for our counterparties in good times and bad, so as to avoid moral hazard and market distortions. The changes that have been made should mean that in future, the Bank of England is more effective both in providing liquidity insurance to the banking system and in mitigating its own risks.