

**The case for central bank liquidity provision
as a public-private partnership**

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The case for central bank liquidity provision as a public-private partnership

1.0 Introduction

During the past year financial institutions around the world have faced severe liquidity problems as a result of the crisis in the shadow banking sector brought on by the rapid development of structured products plus a potent mixture of high leverage and over the counter (OTC) financial derivatives.

This paper explores a number of issues relating to this crisis, but in particular it examines lessons relating to the proper governance and supervision of the UK banking industry.

Importantly for every issue I raise I have tried to offer some proposed solution which I believe will at least improve the current situation.

This investigation is in part inspired by the personal observation that, surprisingly, the UK banking system (notably in terms of equity prices) seems to be faring as badly as US banks. Yet the bad debt outlook for US banks looks more problematic and akin to the more severe credit default experience of UK banks in the early 1990's. It has also been a surprise that in the US and Euro area intervention by Central Banks and regulatory agencies appears to have been more successful than in the UK, both in dealing with failed institutions and in ensuring that sufficient liquidity is provided to the banking system.

Whilst strands of the argument presented below relate to the former, it is the efficient, yet responsible, provision of liquidity support that is the central issue that will be addressed.

This paper is based on four key propositions:

1. Ownership encourages responsibility.
2. Banks should, as far as is possible and without causing macro economic problems, be responsible for their own liquidity.
3. There are real problems in the banking regulatory architecture that need to be addressed if the UK banking system is to be stable in the long term.
4. Banks should be encouraged to create innovative and efficient provision of finance to their customers, maximising customers' ownership of those assets they seek to acquire.

1.1 So why is financial innovation important?

In the current atmosphere the latest of these propositions may be seen as controversial and thus requires some explanation. One of the dangers of the current situation in financial markets is that we could easily see the enactment of regulation that curbs financial innovation rather than simply addressing the problems of its execution. The last 10 years in particular have produced major changes in financial products that improve risk management, both in terms of addressing specific risks (e.g. swaptions,

that help address prepayment issues in fixed rate mortgage finance) and portfolio management (e.g. securitisations).

These and other innovations have been very important in increasing the availability of debt finance to many people previously excluded from access to finance on the scale warranted by their expected lifetime earnings. Saving before spending sounds good but to a significant extent it locks future generations into past generational social strata. There are those amongst us who can finance our childrens university education, assist with their housing needs, their transport needs etc. But what of the children with less wealthy parents? Inter-generational transfers that take place through bank intermediation give fair, or at least fairer, chances to all. To the extent we can improve risk management to allow banks to take on more intermediation in aggregate, the more we can extend its benefits to more people.

1.2 Social consequences

The social effects of the lessons banks will take from this crisis are potentially very damaging especially so in the UK. In the US we may well see from the crisis a new view emerge about the desirability of a property ownership as an asset class, which may be no bad thing. The US is a very big country with a relatively small population, an efficient house building industry and relatively lax planning controls. The potential for systematic wealth creation from the holding of property assets would appear to be limited.

None of this applies to the UK, the only shared feature between the demand and supply of housing in the US and UK is a growing population. The UK has a projected supply requirement for housing units at approximately 225,000 p.a. and rarely builds in any year more than 175,000 housing units p.a. Over the long term UK house prices will rise in real terms, as will rents. Cutting future generations off from the wealth accumulation associated with property ownership could be very socially divisive.

This reason alone requires the UK authorities to act to ensure an adequate and affordable supply of housing finance which is why this paper takes as its major theme how liquidity provision to banks should operate to ensure they are not dissuaded from holding mortgages as an asset class.

2.0 So what are the problems?

Like most 'perfect storms' there is no one problem that is the cause of the current crisis and this paper will not cover all of them. This paper will, however, look at the issues surrounding liquidity provision, asset values and the effect inaccurate recording of asset values can have on financial stability. These issues I feel are central to solving the most important problems affecting the stability of the banking system, both immediately and in the future. The paper is also primarily written with reference to the UK institutional context.

2.1 Flaws in the efficient market hypothesis

The encouragement of innovative and efficient finance is important because neither politicians nor regulators should try to 'pick winners' by creating a sloping playing field either towards intermediation (often represented as the "originate and hold" model) or disintermediation (often represented as the "originate and distribute" model) as a way of encouraging such innovation and efficiency.

To give an example:

Information costs are real, so whilst disclosure is by and large accepted as a good thing it is also accepted that it is not costless either for banks or their customers. It has as a result long been recognised and accepted that such costs are a constraint on disintermediation.

Less well accepted, or even explored, are the problems of liquidity provision to markets. While the creation of capital markets (an important mechanism for originate and distribute) may be perceived as unambiguously a good thing, the inherent problems of markets prone to illiquidity is that prices may become very unstable. Unstable markets discourage buyers and reduce prices below the modelled values of similar assets funded through intermediation. The resulting price instability has costs, very significant ones when such price instability translates into a volatile capital base for the banking system.

Liquidity is an important concept, but is very poorly understood. In modelling markets increasing reliance has been made on models based on the efficient markets hypothesis. One important aspect of which is an assumption that markets are perfectly liquid, that is that the cost of liquidity can be represented by, at most, a small bid offer spread on any assets market price.

The efficient markets hypothesis is based on so called 'rational expectations' this postulates that whatever change in prices that takes place in the economy in the future are already knowable and known in the present, thus economies exist in a state of continuing equilibrium. Yet equilibrium is a controversial concept and has its detractors (amongst whom were Frank Knight at Chicago and J.M. Keynes at Cambridge) who far from assuming that we fully understand how the economy works postulated that business decisions were more like steps into the unknown with unknown probabilities on the outcomes. "the future is not unknown it is unknowable" (J.M. Keynes – Treatise on Probability 1921).

It is no co-incidence that the same 'rational expectations' makes an appearance in many bank's Basel II compliant risk models, their front and mid-office pricing models and so called 'fair value' based accounting regimes.

2.1.1 Liquidity black holes

Illiquidity is most manifest in markets when it results in extremely disrupted prices (known as liquidity black holes). There is a temptation to believe such events are extremely rare – for example once in 100,000 year events. They are also believed to be confined to markets that are not heavily traded and where market making is either

absent or confined to a very few institutions. This is not the case if one considers the last 20 years:

a. 1987 US Equity Market Crash.

The 1988 Brady Commission's report into the collapse of the US stock market in Oct. 1987 attributed the magnitude and swiftness of the price declines to portfolio insurance and similar practices that dictate a "sell cheap buy dear" policy.

The extent of funds pursuing such strategies was \$100bn, only about 3% of the market value (pre-crash).

The important lesson here is that dynamic replication of put options by portfolio rebalancing may not be possible in times of market distress.

b. 1998 Long Term Capital Management debacle.

The mainstay of LTCM's trading strategy were the convergence of relative value trades, in which long positions in one asset would be hedged by having a matching short position in another asset, whose returns were lower than and highly correlated with the first.

The long position would typically be a relatively illiquid or riskier asset. For example, a long position in an "off the run" (and thus less liquid) US Treasury matched by a short position in an "on the run" US Treasury.

LTCM's success brought many imitators, narrower spreads and more leverage.

"Who panics first panics best". On 6th July 1998 Salomon Brothers disbanded its bond arbitrage desk. As convergence trades unwound the long positions were sold and the short positions bought back. All traders with similar positions suffered price shocks. Highly leveraged traders especially suffered as margin calls on their loss making positions caused them to unwind trades to release cash and reduce exposure. Price movements were re enforced, the vicious cycle of selling /adverse price moves/ more selling; had begun

c. 1998 USD/JPY.

In the week beginning 5th October 1998 USD declined against the JPY by 15%. From the start of trading in London on 7th Oct. the yen fell from 131 to the dollar to 112 by lunchtime on the 8th bouncing back to 119 at the end of New York trading.

The conventional wisdom of the time from academics, commentators and traders was that the outlook for the yen was for continuing weakness against the dollar.

Since the spring of 1995 the dollar had strengthened against the yen, the US was growing strongly, the Japanese economy was weak.

d. 2007 Collateralised Debt Obligations (CDOs) and Mortgage Backed Securities (MBS).

As this is written, it is early days to describe definitively the issue at the core of the current "credit crunch". The creation and subsequent mis-pricing of the risks associated with the development of CDOs as a significant "investment" instrument as well as the investment vehicles many banks used to hold these instruments (as well as more traditional MBS) has at least been a major contributor. The repercussions of the subsequent collapse of what was effectively a shadow banking system with very high leverage may have developed into the longest lasting and deepest liquidity black hole since the great depression, crucially affecting the MBS market. Indeed this crisis has already developed into something more than simply a liquidity black hole, but as I shall argue throughout this paper looking at the development of this crisis as largely liquidity driven is vital to understanding it.

(I am grateful to Hyun Song Shin Professor of Economics at Princeton University for the explanations in a) to c) above and for his inspiring work on liquidity black holes that has greatly influenced my thinking in the area of liquidity management).

2.1.2 The Basel II “formula” for “value”

Today the incidents listed above have the capability to cause considerable contagion effects. In part this is because of the general acceptance of the modelling of asset prices based around the Basel II approach, which itself was derived from common industry practice. This results in the “correct” market price for an asset being a function of the discount rate (D), the term of the asset (T), the probability of default (PD), the loss given default (LGD) and the market’s liquidity (L).

$$P = f(D, T, PD, LGD, L)$$

Under the efficient market hypothesis, L is represented (if it is represented at all) by a small spread for market making, but in cases where liquidity black holes appear L is most definitely not best represented as a small spread.

2.1.3 Deterministic “v” probabilistic prices

Accounting numbers are deterministic. But to the extent that they reflect current market prices of financial assets they may be taken to reflect the best estimate of future outcomes for the risk adjusted cash flow from these assets. The restrictive characteristics of markets, for this to be true, are considerable (the efficient market hypothesis). But as we have seen prices can be significantly affected by illiquidity whereas the efficient market hypothesis assumes perfect liquidity. Of course one unusual feature of this analysis is that a well funded bank, which has no need to sell assets in markets or pledge assets against loans to acquire liquidity, may come closer to reflecting in its modelled financial asset prices an efficient market hypothesis, subject of course, to its models of PD and LGD being accurate.

The work of Paul Samuelson is usually quoted in the context of the perfect market hypothesis. But anyone referring to this work and using it in a theoretic, much less a practical context, needs to be very careful of the assumptions underlying it. Perfectly anticipated prices may fluctuate randomly. But the use of Brownian Motion as a proxy for randomness constrains this randomness in such a way that any new observed price will only marginally affect the mean price whereas imperfectly anticipated prices may produce wild randomness where any new observation may significantly alter the mean. The world of wild randomness is very unpredictable and highly volatile prices for bank assets creates a significant capital requirement.

If we want to project future asset prices we need to move, as risk managers do, to probabilistic prices. This inevitably involves determining a distribution of future outcomes. Any distribution has a mean expected outcome but the importance we should place on knowing the mean will be greatly affected by the shape of the distribution. For symmetric distributions the mean, median and mode are identical. For normal distributions we can describe the distribution by reference to only two moments of the distribution, the mean and the standard deviation. But none of this is

likely to help in financial markets. Prices are not normally distributed. Empirical studies of financial markets show that asset price distributions exhibit “fat tails” (leptokurtosis). This does not sound alarming but the mathematics of such distributions are complex and imply far higher capital requirements than normal distributions. It also implies that analysis of the tails is more important than that of the variance from the mean, which means an Expected Shortfall (ES) measure is a more relevant measure of risk than is VaR. Expected shortfall also invariably produces a far higher capital requirement than VaR. This implies capital based on a VaR measure of a normal distribution is, for many markets, a gross under estimate of risk and capital.

There are also reasons to believe the prices observed in the tails of these distributions are themselves the result of changes in the way markets behave as they become stressed. This implies it is not just the parameter values in price models that change under stress conditions but the relationships between the parameters, implying that pricing models of “stressed” markets differ from those in “normal” markets. Most obviously the liquidity parameter moves from being a minor constant to a major explanatory variable. Extreme asset price volatility is, in large measure, due to liquidity not credit issues.

2.1.4 Liquidity and Banking

Banks derive their liquidity from two sources, the liquidity that comes from their funding structure (Funding Liquidity) and the liquidity that comes from their ability to use markets to turn assets into cash (Market Liquidity).

A long term stable base of deposits, unsubordinated and subordinated debt and equity, gives both an ability to fund the holding of assets and the ability to do so even when markets are disrupted. Provided the levels of default on the assets does not rise significantly the bank will have the cash flow to pay returns to all liability holders and provided depositors remain confident of this (where the bank is relying on behavioural rather than contractual stability of the deposits) the bank has long term viability.

A bank reliant on its ability to raise funds through the sale of assets through a market, or the pledging of the assets to obtain funding, is entirely reliant upon the ability of markets to absorb the assets and the price it can obtain for those assets in the markets. Any market disruption either through a fall in asset values or the lack of available funds in the market will threaten directly and immediately the viability of the bank.

In practice most banks display a mix of funding and market liquidity, but in the US in particular the move from the originate and hold strategy for loan asset accumulation to an originate and distribute strategy has seen a significant rise in the reliance on markets for bank assets to support banks business models. This business model has been taken up in varying degrees in the UK most notably the Northern Rock.

Banks manage their liquidity in circumstances where they need to demonstrate a high degree of liquidity by encouraging deposits, raising long term debt (where possible) and declining to make long term loans. They use the cash generated to pay down

wholesale funding (which in disturbed markets can prove unreliable as it is overwhelmingly advanced on an uncommitted basis) and increasing holdings of high quality liquid assets such as Government Bonds and Central Bank deposits.

No matter how much banks try to increase their liquidity banks are inherently illiquid as the transformation of short term funding to long term lending is fundamental to their business model.

2.2 Accounting for fair value

When IFRS were drafted there was no attempt to look at the way it might interact with Basel II, the latter has been criticised as pro-cyclical as banks consumption of capital is likely to increase as credits are downgraded in difficult economic circumstances and to decrease as the economy improves. IFRS is equally pro-cyclical, the mark to market implications of fair value adjustments which apply to two of the four asset accounting classifications. The accounting classifications available under IFRS are:

1. Fair value through profit and loss (FVTPL). Assets classified as FVTPL include those held for trading purposes (HFTP) and those otherwise designated FVTPL. These are recognised at fair value (marked to market) and changes in fair value are reported through the income statement.
2. Held to Maturity (HTM). Assets classified as HTM are recognised at amortised cost and changes in carrying value are reported through the income statement only when a permanent diminution in value is evidenced.
3. Available for sale (AFS). Assets classified as AFS are recognised at fair value (Marked to market) and changes in fair value are reported through equity.
4. Loans and receivables (L&R). Assets classified as L&R are recognised at amortised cost and changes in their carrying value are reported through the income statement only when a permanent diminution in value is evidenced.

Assets held under either AFS or FVTPL , include virtually all mortgages as mortgages are almost universally structured so as to permit their sale so as to allow banks to manage their liquidity. Such assets will suffer write downs of value as credit spreads rise and liquidity declines as the economy deteriorates. A process that will be followed by write backs as the economy improves, increasing banks profits and raising their capital.

Effectively Basel II is likely to be less relevant for many banks actual capitalisation than IFRS related write-downs and write-backs.

An important problem of the current dramatic price changes due to illiquidity is that, in accordance with IFRS fair value accounting, banks provisions are driven, where market prices can be established, by market prices. We can see that liquidity black holes can lead to dramatic price falls and thus high provisions numbers, potentially far in excess of those implied simply from changes in PD and LGD.

Moreover as bank capital is reduced by the level of provisions, any drying up of liquidity to asset markets, where banks are major asset holders, is likely to result in significant capital reductions for banks. This in turn leads to a reduction in asset

accumulation (loans will only be made on less favourable terms and possibly not at all) or a need to raise capital (indeed most probably both). And due to the provisions being taken against upper Tier 1 capital (equity) capital repair cannot be achieved, in most cases, simply by issuance of debt capital but only by new equity.

After instances of liquidity black holes market prices will revert to reflecting D, T, PD and LGD subject to a small bid/offer spread for liquidity provision by the market makers. But the key unknown is how long this will take. It cannot, in general, take longer than the term of the asset itself as, if held to maturity, the assets cash return will reflect the actual default experience adjusted for loss recovery and thus will be reflected over that period in the P & L. The difference in provisions numbers across different accounting periods, however, can be very substantial and particularly where a liquidity black hole emerges.

In the above examples of liquidity black holes (see 2.1.1) the reversion to “normal” prices usually follows a V shaped path.

This is not always the case, and the “V” is not a given as it can only occur if market liquidity returns and the price falls do not create contagion effects. The “V” path of prices may, therefore, turn in to a “U” or even a self fulfilling “L” as banks reactions to falling prices causes them to cut lending, leading to decreased economic activity as contagion moves from the financial to the real sector of the economy.

We can, however, assume that in general the persistence of the liquidity black hole is limited by the natural liquidity (term) of the asset. Consequently the mis-pricing of a short-term asset is a problem but is unlikely to lead to contagion effects spreading to the real economy, as the mis-pricing must be transitory. The mis-pricing of a long-term asset (such as a mortgage) has the potential to be a much bigger problem unless normal liquidity provision can be restored to the asset market quickly.

2.2.1 Fair value effects and business models

However, for a well funded holder, does any of this matter as a basis for valuing asset? Yes, if the institution is a bank, because as the asset has a market price it is assumed this represents a “value”¹. If that “value” has declined it has the same effect on capital whether the institution is one that funds its asset holding overnight through uncommitted inter-bank funding or ‘repo’ markets, and is a business speculatively trading in assets, or, is an institution that funds assets from the proceeds of perpetual debt issuance and is an investor and thus long term holder of the asset for value.

The problem the liquidity black hole creates (through its interaction with Basel II and IFRS) is that both the above institutions will need to raise capital but one is probably facing imminent collapse irrespective of its capital position as it will face a funding requirement that forces more asset sales forcing down prices requiring more capital forcing more sales etc. The other requires no funding and can hold the assets it has to maturity. Somewhat bizarrely, however, the accounting convention can, and in most cases will, transfer the effect of falling prices to the investment institution, requiring it to raise more capital it will not need ex-post to cover actual losses (the increased

supply of assets to the illiquid market is driving down prices, not any perceived rise in PD or fall in LGD).

The well funded bank is in effect paying twice for liquidity, once through the cost of raising long term stable funds and again through the liquidity cost incorporated in the market price of the asset.

The main argument against this view is that if assets are being systematically under-priced by the market then buyers for the assets should appear. I would argue the markets will rapidly notice that the greater value is to be had by capitalizing the investment institution (usually a commercial bank) as the fall in equity values that accompanies the “losses” are due to provisions that are a non-cash item and if PD and LGD do not change will never become cash losses. The raising of capital by well funded institutions thus represents an extraordinary opportunity for new shareholders to gain a transfer of value from existing shareholders. In these circumstances shareholder pre-emption rights need to be preserved and the banning of short selling may need to become the norm when such capital raisings are taking place as it is very obvious that short selling can become a lucrative business at such times as short sellers force underwriters to absorb shares they do not want and will inevitably sell at distressed prices.

It is, in my view, therefore right that any plan for recapitalising banks actually focuses on establishing asset prices based on value to a long term well funded investor, not subject to IFRS accounting and that their valuation be based upon the assets expected credit risk adjusted discounted cash flow. If such values were to drive significantly higher prices than we currently see in the market then the re-capitalisation of the banking system will happen automatically

It is worth mentioning here that the proposal by Alistair Milne and Gilad Livne from the Cass business school in their paper “The credit crisis can be reversed” could produce this effect. My only reservation is whether it would be necessary for the purchasing agency to avoid IFRS accounting itself. Perhaps the Treasury would agree to buy assets in the way Alistair and Gilad propose as the amounts involved could be very small yet the prices so discovered will have a very large effect.

3.0 Business consequences

3.1 Mortgage availability

The current crisis shows all too vividly the way that, if markets remain illiquid, market prices can diverge from long term value based on PD and LGD.

This mis-pricing effect is greatest for long term assets and inevitably leads to the greatest valuation effects on capital coming through any assets such as mortgage assets that are accounted for on a fair value basis. Most mortgage backed securities are accounted for as either available for sale or held for trading purposes and thus subject to fair value based accounting where mark to market price changes lead

directly to a capital adjustment. In the UK currently this effect has at least in part resulted in the extinction of the mortgage bank.

One important message banks may take from their current experience is likely to be that mortgage lending involves a liquidity transformation that endangers their financial stability. Curbs by banks on the size of mortgage finance as an asset class are likely unless the liquidity issues are dealt with. Banks could either do this by attracting deposits or selling on, without recourse (including without liquidity back up lines), the assets to investors. In either case price is likely to rise significantly. In recent years mortgage margins (over one month LIBOR) appear to have declined from about 1.0% to around 0.5% whereas if banks priced for the risk in the future we should expect to see a 2.0% margin. The reduced competitive effects of current consolidation in the sector may, however, increase this margin.

In particular I believe the banks will meet with, at best, limited success in improving the liquidity of mortgage assets and that liquidity provision for mortgages must be provided by structural changes to Central Bank liquidity provision (see Section 5 below).

3.2 Availability of inter-bank funds

The capital adjustment effect has in practice proved disastrous, not least because of the feedback effects between fair value reductions in capital, the effects on share prices of banks so affected (especially those needing to raise additional capital) and the effect of falling share prices and widening credit spreads on the modelled PD, of banks themselves. Most banks when assessing the credit worthiness of counterparties used either Merton or Jarrow based models. Such models have very strong feedback of either falling equity prices (Merton) or widening credit spreads (Jarrow) into PDs and therefore into exposure limits. The reduction in banks willingness to place funds with each other is strong and immediate. It is worth noting that Altman based models have been in declining use in part because of the lag effects of their reliance on accounting data. To the extent such models incorporate IFRS based profit and loss or capital account measures, much the same end result, though with some time lag, would now occur as with the use of Merton or Jarrow models. To the extent, however, that cash flow measures were used in Altman based models a more realistic assessment of a credit would be obtained.

It is also important to note that short selling in disturbed markets can become the direct cause of banks inability to obtain renewed funding from other banks. Falling equity prices and rising credit spreads are not in these circumstances simply conveying information on investors views, they are information. This information when picked up by credit models converts into decreased exposure limits. In such circumstances banning short selling of bank shares is warranted.

3.3 The next asset bubble

Institutions that are forced to raise capital but are not suffering from funding problems will in practice become over capitalized once the 'knife stops falling' and market prices return to reflecting D, T, PD and LGD plus a small bid/offer spread. This is not a recipe for efficient capital allocation.

If Basel II is pro-cyclical the effect of adding IFRS fair value accounting in these circumstances is to put Basel II's pro-cyclicality on "speed".

The effect of over capitalizing banks is not to create a robust banking system it is to fund the next asset bubble. In the case of banks the need to raise equity makes this worse as the equity itself can rapidly be matched by debt capital meaning that as capital re-emerges from illiquid market prices it is a "2 for 1" offer the banks will not refuse. This is not to say they will repeat past mistakes, simply that they will find new mistakes to make.

Some mechanism for restraining banks ability to lend once liquidity does return to asset markets will be necessary.

3.4 Financial reporting issues for banks

The mis-pricing of assets has especially important implications for the correct reporting and management of a commercial bank's capital adequacy. A commercial bank generates cash primarily from customer fees and from net interest income (NII) from which it must deduct the cost of operations (e.g. computer systems, branch network etc.).

The net income of such a bank thus is closely replicated by a set of old UK GAAP accruals accounts. Under IFRS, however, the cash flow view of profit and loss (P & L) has been abandoned in favour of a P & L largely driven by "fair value" adjustments which are non-cash items. The cash flow from an asset under accruals or fair value must be the same over the life of the asset. But there is a mis-match between the cash flow from an asset and the flow of adjustments to its fair value, which can in the case of assets with a long life, such as a mortgage asset last for a long time resulting in significant differences between the value of an asset based on its fair value and the discounted value of its risk adjusted cash flow at any point in time.

At its most extreme (which may already be close for some institutions) the fair value effect can create a situation where, because capital can only be retained from P & L (and dividends only paid from P & L) the bank could be generating a significant cash flow surplus that it can neither use to re-capitalise itself nor to pay dividends to shareholders.

4.0 Solutions

4.1 A solution for accountants and/or regulators

Either banks should be allowed to create reserves 'in the good times' and pay dividends from accumulated net positive cash flow, irrespective of the level of profit under IFRS or the bank should be allowed to move assets from "held for trading purposes" to "available for sale" or "held to maturity" "books" thus ensuring that major liquidity-driven fair value changes of non-impaired assets do not create a significant disconnect between cash generated and P & L.

It should be noted that the move to “available for sale” whilst mitigating the P & L problem does not solve the Capital problem as the adjustments to capital for fair value purposes may be significantly greater than any one year’s surplus cash flow generated from the asset holding. It will, however, provide a solution if regulators were not to require adjustments to regulatory capital from actual capital adjustments resulting from fair valuation of assets carried as “available for sale”, but to treat these assets in the same way as “held to maturity” assets where only impairment would result in a diminution of the assets value. This would have the added attraction of making a clear distinction between assets that were suffering a reduced market price due to illiquidity in markets and those suffering from impairment. An invaluable piece of information both for regulators and for central banks.

An alternative would be for the accounting profession to create a set of transition rules for the movement of assets from “held for trading purposes” and “available for sale” accounting treatments to “held to maturity” treatment were the relevant asset markets to become subject to illiquidity.

It should be noted that this latter solution is not as radical as it sounds as US GAAP does allow movements of assets between the equivalent accounting treatments though under very restricted conditions. There would need to be restrictions under IFRS to stop banks simply moving assets between “trading book” and “banking book” to smooth profits.

An appropriate mechanism in either case might see a bank claiming illiquidity in markets. Any move of assets between accounting designations would, however, be subject to the relevant prudential regulator agreeing the bank claim of illiquidity and the bank auditors accepting this (in the UK, USA, EU I would expect this latter step to be a formality, but probably not in all countries in which IFRS will operate). Any move of assets to “held to maturity” treatment would then, additionally, be subject to the bank also proving it could match fund the asset. In this way the bank regulators tie liquidity management into asset valuation in a way that I feel would be very positive in encouraging improvements in banks liquidity management.

If transition rules are left to the IASB and banks then there could be problems resulting from any implementation. The bank regulatory authority would need to ensure there were rules regarding the transfer price of the assets. Transfer at current market price might seem attractive but could create another set of risks as no bank has anything to gain from this if they think asset prices have bottomed out. If we look at the example of two banks; if one moves the asset from available for sale to held to maturity at current market prices and the assets are ones whose price is only affected by illiquidity then the increase in the value of the asset must be taken, under IFRS rules, over the life of the asset. Effectively this will be a long drawn out drip feed of capital into the bank where the assets are mortgage related assets. If the other bank continues to hold the assets as available for sale it will be able to write up the assets value as liquidity returns to the market, thus, potentially, resulting in a rapid increase in capital. This could give the second bank a significant capital advantage over the first. To mitigate this effect the bank regulatory authorities should co-ordinate the actions of banks both nationally and internationally.

All this would require bank prudential regulators to have a role in setting accounting standards for banks. This is the case in Spain and has had notable benefits in better aligning banks capital reserves with their risks.

A similar mechanism could be required for the “signing off” on PD and LGD which would provide assurance that the asset’s change in value was due only to diminished market liquidity and not to issues affecting impairment. In this case it could be argued as to whether the regulator or the auditor should take the lead in agreeing to the banks model parameter estimates. In practice the regulatory authority through its supervisor staff will have assessed bank models under Basel II, if, however, the banks models are to be used to produce accounting figures then they will need to be subject to audit. If the PD and LGD estimates pass audit (the latter where physical assets are concerned can be independently valued) the regulators should have to agree to their use.

The move of assets subject to illiquidity to the “held-to-maturity” book would effectively create a two tier accounting reporting structure with assets either subject to fair value adjustments (effectively current market prices) and held on a trading account or held-to-maturity and held on an investment account. The latter could be subject only to PD, LGD (and to a lesser extent D) impairment-driven provisions which reflect a cost of doing business (which is what impairment is for a commercial bank).

4.2 A solution for commercial banks, their management & shareholders

From a Corporate Governance perspective we have seen that the way the accounting conventions of fair value methodologies work can lead to a dilution of value for the current owners of the firm as against new equity participants, thus “fair value” and “a true and fair view” are effectively in conflict in such cases.

The logical conclusion from this is that the business model of an institution and especially its funding structure and its cash flow should matter far more to equity providers than appears to be the case. In support of this the management of the bank should as guardians of their shareholders’ interests ensure that the bank’s public disclosures and accounts properly reflect their business model. If stability of funding of the assets of the bank is in place the bank should seek to inform investors (and bank supervisors through the ICAAP) of the way this improves the bank’s long term viability. This would be likely to result in great emphasis being placed on the publication of a banks’ cash flow statement, a statement that would for many banks look remarkably similar to an accruals P & L statement.

It should also lead to far more bank assets being treated for accounting purposes as either “held for trading purposes” or “held to maturity” as in both cases the accounting treatment reflects the business model (trading or investing), whereas I would argue “available for sale” does not represent a business model. To achieve this would require increased flexibility in the interpretation of “held to maturity” by the accounting profession.

In practice there is a need to recognise that investors are not passive in the face of forces beyond their control that affect the credit standing of their investments. This is not simply an issue of impairment or default but one of return on risk which can be affected by changes in assets perceived risk and return profile.

There must therefore be a set of rules that allow banks to adjust their holding of held to maturity assets in the same way any investment manager would do, without the so called 'tainting' consequences that currently would force all such assets to be fair valued (marked to market) if any were sold.

4.3 A solution for regulators

In the current system, under the scenario described, it seems likely that banks' capital will become very volatile and inevitably this will result in either:

- Central Banks feeling the need to intervene whenever the prospect of asset prices falling significantly due to reductions in market liquidity causes bank capital to fall (as a result of falling asset prices) such that there is the possibility of bank lending being cut to a degree that economic activity is affected.

or

- Regulatory authorities requiring banks to hold levels of capital such that the levels of intermediation are permanently impaired by the high costs of capital provision being passed on to their customers.

The correct response by Central Banks in such circumstances is to help boost market liquidity and a great help to this would be not to allow illiquidity in markets to decrease the capital of well funded banks. There is the need for a far greater recognition by regulators that funding liquidity matters.

One way of doing so would be to allow banks, when funding liquidity of a given quality (basically, match funded to create a term funding of the asset), an exemption for regulatory purposes from needing to write down Tier 1 capital to reflect fair value (market price) where that price is not reflecting reasonable estimates of D, T, PD and LGD. Effectively such banks can model prices where regulators have good reason to believe market prices do not reflect reasonable (sound but conservative) long-term estimates of D, T, PD and LGD. The profitability (whatever that represents under "fair value" based accounting) of the bank would still reflect market prices, but this would not necessarily affect the bank's regulatory capital where that bank is adequately supported with funding liquidity.

4.3.1 A requirement for a new group of regulators

The move away from regulators relying on market prices for valuations and of regulators responding to these valuations with inflexible capital "rules" would require a significant move towards reliance on the professional judgement of bank supervisors.

Any change towards greater reliance on professional judgment must be accompanied by suitable training and professional qualification to ensure that they can exercise professional judgment and changes in law to make these judgments secure and give professionals the confidence when exercising their judgment. Both risk management and accounting need to be high on the list of skills for such personnel.

5.0 Liquidity support and financial stability

It is important that no action of either bank or accounting regulators is seen as “letting the banks off the hook” either of bad lending practices or of poor liquidity management decisions. This is not the intention of any of the solutions I propose and should not be the outcome. If PD’s have risen or if LGD should rise as a result of lower collateral valuations then there is nothing in the proposals that would shelter the bank’s capital from such effects. It will, however, require sufficient level of skill and knowledge within the supervisory authority (including bank auditors) to make such decisions.

The intention here is simply to recognise that banks are liquidity transformation entities and as such they are subject to financing problems when markets become illiquid. As a result the regulatory structure and its associated supervisory regime should encourage term funding of banks assets and the building of a stable deposit base by banks. None the less regulatory authorities should be prepared to broaden the range of bank assets they are willing to provide liquidity against when crises do occur. No bank is likely to be fully match funded across its asset books as to do so would be highly restrictive of lending and would significantly reduce both financial innovation and profitability.

Unless therefore we restrict the activities of banks very significantly (including the levels of credit risk they could accept) it will always be possible for a bank to be subject to market induced individual crises of confidence. It is equally likely that an individual bank crisis could spread across banks as contagion is always possible either through inter-reliance on funding, exposure to similar and impaired assets or simply through a crisis of confidence, which can as previously stated be generated by short selling.

5.1 The problem with the Central Bank’s lender of last resort function

The Central Bank is the liquidity provider of last resort. As such, in practice, and especially as this paper does not support the restriction of banks innovation activities, its role is also that of insurer for the banking system. Such a policy has potential costs. When providing liquidity the Central Bank is putting its own capital at risk. This can be mitigated by restricting the assets it will provide liquidity against (though it is important that the list of eligible assets is updated regularly or innovation will be discouraged) by “haircuts” and by the nature of the documentation of the facility. But putting the capital at risk cannot be entirely avoided. Moreover, the above could

encourage banks to take bigger risks than they otherwise would, especially given some of the apparently dysfunctional remuneration arrangements for banks' senior executive management (and even for their not so senior management).

Irrespective of the banks' remuneration arrangements, there is a distinct danger through the Central Banks "insurer" role of the socialisation of losses and privatisation of profits, if the Central Bank performs the role of liquidity provider of last resort. This is clearly undesirable as the basis for the relationship between the commercial banks and their responsible Central Bank.

As the liquidity provider of last resort and a "nationalised industry" the UK Central Bank faces a very difficult dilemma. Provision of liquidity against the collateral of government liabilities (Treasury Bills, Gilts etc) is an easy decision from a credit perspective. A claim against the state is the same credit whether it is a £1 coin or War Loan. Providing £1 coins or War Loan against the pledge of a mortgage loan from a commercial bank is quite a different matter.

In the USA we could look at this relationship differently. There we see Fannie May and Freddie Mac both providing liquidity against mortgage assets ("conforming" to certain standards) and whilst there is a Government "guarantee" in the case of financial "melt down" of these institutions, they are private companies and the capital supporting them is private capital. In most cases this is the capital at risk the government "guarantee" being called upon only in extreme circumstances where there is other government and agency action being taken to "rescue" the economy.

It seems this model of private institutions with private capital backing them is in most circumstances sufficient to absorb credit losses and provides a basic template for the answer to the UK Central Bank's problem of providing generous liquidity against credit risk assets.

There is an argument for seeing the role of liquidity provision by the UK Central Bank really comprising two roles:

- The provision of government assets in exchange for private assets.
- The provision of government capital against the credit risk of the private assets acquired.

In practice the biggest issue in trying to resolve the latter problem is who should pay what toward this, the current situation has undertakings from the banks and "haircuts" on the value of the assets which has until recently resulted in little use of the Central Bank liquidity provision. The commercial banks find it more in their interest to restrict business to conserve liquidity except of course in extremis when the liquidity and capital have to come from the Central Bank.

The system is thus dysfunctional as it results in:

- Banks restricting activity more than is desirable at a time when economic activity is turning down,
- It raises the price of credit and raises benchmark interest rates (Libor, SVR) in circumstances where the MPC is trying to cut rates

- It results in the Central Bank becoming the owner of banks that fail due to liquidity (but not bad debt) problems, providing both liquidity and capital at public expense (with the distinct additional risk that the capital will be put at risk as “nationalised” banks are not likely to be able to pursue commercial strategies without political constraints – if only because of EU competition constraints).

5.2 A solution: Creating a public–private partnership

A more logical structure for liquidity provision would see banks freely accessing the liquidity provision of the Central Bank whilst underwriting themselves the credit risk inevitably thrown up by this process.

One possible solution to the structural issue would be for the commercial banks to provide capital to back the Central Banks liquidity provision, this could be done at minimal expense by the banks providing some capital “up front” to take account of liquidity provision in “near normal” times with the remainder provided on a contingent basis.

The amount each bank has to provide would be in relation to its likely use of the facility (which would of course be greater for banks with lower levels of funding liquidity relative to their asset generation) and the credit standing of the institution. An excellent starting point for this would be the Prudential Regulators’ rating of banks which will effectively result from Basel II Pillar2 supervisory process. If made available to “commercial” insurers this would also provide a basis for the Contingent Capital “insurance” premium.

In practice the “up front” capital would be no more than a diversion of capital the banks should already be holding for this purpose, indeed given the improved liquidity and therefore greater price stability that should be evidenced in the “conforming” asset markets it should in fact be the case that there would be a net saving of capital.

Whilst not proposing use of the system as a substitute for capital markets the system would allow use on a regulatory basis whenever any market disruption prevented “normal” use of the capital markets.

This would have the benefit of ensuring that the list of “conforming” assets would be kept up to date and that the central bank and the prudential regulator would be able to monitor the liquidity of assets on the list. The existence of the limit would also ensure that banks were not encouraged to hold illiquid assets as such assets would only go on the list if they were being used to dis-intermediate bank balance sheets. It would also connect the Central Bank and the prudential regulator directly to the daily capital market operations of the prudentially supervised banks, providing a valuable insight into the banks business strategies, funding risks and capital markets activities.

Banks would at the same time not be discouraged from using the system they capitalise and have a role in policing and there would be no need to confuse this facility with the Central Banks’ Lender Of Last Resort (LOLR) role and any facilities that are adjuncts to it (including any stock liquidity regime covering eligible assets) as

this regime would remain a Central Bank controlled process to address systemic failure. Indeed the LOLR would need to be implemented should any bank remain illiquid after all of its “conforming” assets had been exchanged for Government bonds. With this new regime in place, however, banks would be far less likely to fail for liquidity reasons. They would have a ready source of liquidity to cover any disruption to their capital markets disintermediation activity and the credit risk which inevitably results from liquidity provision would be covered by capital provided by the banks themselves.

5.2.1 Conforming Instruments

It seems obvious that in the light of events investors should not rely either on the guarantees provided by insurance companies nor should they take comfort from the work of the ratings agencies. In both instances the model has been found to be flawed. The rating agencies are so compromised that no amount of regulation can, in my view, make up for the the fundamental flaws in their incentive structures which is simply a reflection of a flawed business model.

(The possibilities of a regulatory structure for rating agencies is explored in the paper “How, if at all, should Credit Rating Agencies (CRAs) be Regulated?” by C.A.E. Goodhart of the Financial Markets Group at the London School of Economics)

The insurers of municipal bonds that entered the assurance market for securitised bonds seem to have little if any capability to understand the risks they assumed and clearly relied almost solely on rating agency grades. Thus their business model was flawed for exactly the same problems the rating agency ratings model was flawed. If the credit assurance came from the banking industry itself, however, these problems could be overcome.

There is a well tried model for the credit assurance to come from the banking industry itself, as for bills of exchange it had for many years. Under this model at least two strongly capitalised and well-regulated banks should provide a guarantee that, in the event that the issuer of a bond defaults, they would cover the deficiency. This involves both the originating bank and the guaranteeing bank appraising the credit risk and accepting it. A very different model from one where the originating bank simply sells on the risk based on the views of a rating agency that bears no financial risk for its mistakes.

It is of course conceivable that the issuer and both the guarantor banks will fail. But the likelihood of multiple failures of that kind is surely negligible. By implication, if the central bank bought and sold such paper in its open market operations, the default risk to the central bank ought also to be negligible. If the paper were used in repurchase operations, the central bank would be at risk only if four institutions (the repo-ing bank, the two guaranteeing banks and the issuer) were to fail during the period of the repurchase agreement.

But who is to say that the banks guaranteeing the securities are in fact strong enough in capital, and in their conduct of business, for the envisaged role? The answer is that the task of assessing banks’ capital strength and balance-sheet qualities could lie with the central bank and an appropriate regulatory agency, as at present. Informed by the

internal capital adequacy assessment process under Pillar 2 of Basel II bank regulators should have a very clear view of individual banks credit appraisal capabilities.

(The above views on the operation of a 'two name paper' basis as a basis for central bank liquidity support first appeared in an article entitled "How to restore liquidity to triple A securities" by Tim Congdon and Brandon Davies in the Financial Times on the 17th September 2008).

The two name paper so created could also work within the support process described above to overcome two current problems. Firstly, the 'haircutting' of asset values by the central Bank when undertaking liquidity support would not be necessary due to the quality of the paper. Secondly, the liquidity provision could be for any period up to the life of the asset (which where mortgage assets were concerned would be approximately 7 years, given the way UK mortgages pre-pay). In anything but the most extreme of circumstances no such term would be necessary or allowed but in periods of extreme stress the ability to fund for long periods would provide a strong motive for banks to originate mortgage assets.

The provision of such funds could also be on a sliding scale of costs against term thus incentivising banks not to request funds for a longer term than is necessary.

Moreover with such assets available to banks and others to invest in it would be likely that an active secondary market would be established in the assets. This, amongst other things, could result in the Bank of England no longer offering to pay interest on banks credit balances placed with it. A move that would discourage the hoarding of liquidity by banks, an action that is destructive of asset markets and asset values, in times of stress.

The above process would also not discourage financial innovation, as, with certainty over the provision of liquidity for "conforming" assets the banks would be free to develop new products which would not have immediate access to the new liquidity facility but could later become "conforming" should they acquire wide acceptance. Indeed a clear path for new product innovation to lead to conformity of the asset would be important to encourage product innovation. The clear distinction between conforming and non-conforming assets at any one time would also allow the supervisory authority to monitor the relationship between funding liquidity for illiquid assets in each supervised institution. This should be an important input into any Basel II Pillar 2 capital override.

ⁱ I have a particular problem at this point as neo-classical economics has no theory of value, indeed I have always felt modern economics was born the day economists realised they could say nothing about value but a lot about price formation, i.e. economics became marginal not absolute. I also find it rather odd that risk managers also seem obsessed with "valuation" models as they clearly specify models of price assuming perfect liquidity which can only reflect an accurate price for a well funded "holder for value", odd given they mostly seem to work for short term trading businesses and therefore must be all too aware of the way illiquidity can affect market prices.