Paul Tucker: Shadow banking, financing markets and financial stability

Remarks by Mr Paul Tucker, Deputy Governor for Financial Stability at the Bank of England, at a Bernie Gerald Cantor (BGC) Partners Seminar, London, 21 January 2010.

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This should be the crucial year in establishing a framework for a more resilient global financial system. Much of the authorities' work is about how to do better in well-established areas of policy: bank capital requirements, liquidity requirements, supervision, and so on. But new areas are being debated, or revisited, too. Those debates are more profound. They include whether we can develop macroprudential instruments and regimes for "taking away the punchbowl" from future financial-system parties before they get out of control. Whether we can develop regimes for the resolution of banks and other key financial firms that can reinject market discipline into the financial system, while at the same time ensuring continuity of essential financial services to the economy in the event of severe distress at large, complex, cross-border firms. And whether the structure of the financial system needs to be constrained by the authorities.

This evening I am going to focus on one part of the "structure" debate: ***shadow banking***. It has become commonplace that shadow banking somehow exacerbated the boom, and complicated the rescue efforts of the authorities during the bust.[1] That ***is*** true. But there has been relatively little discussion about what this means for policy.

We do not need to get too bogged down in defining what is meant by "banking" here. I mean it simply to refer to firms that take on-demand or highly liquid deposits, and use those liquid savings to provide term loans to households, firms and other parts of the financial system. Banks are, therefore, absolutely central to the monetary and payment system; and they are also vital to the credit system. They are leveraged; they run maturity mismatches; and their net worth is often uncertain. So they are exposed to runs, with spillovers to the rest of the system and the economy more widely. Reflecting that, they have long functioned within the terms of an established social contract with the authorities.[2] It has involved industry-financed deposit insurance (and now special resolution regimes); prudential regulation and supervision; and liquidity insurance from central banks. That regime reflects the spillovers ("negative externalities") that flow from bank failure. But precisely because the regime aims to place a higher weight on the safety and soundness of banking than banks and their shareholders would themselves, it sets up incentives for some types of business to be booked outside the banking system. Such "regulatory arbitrage" is problematic if the resulting non bank forms of financial intermediation replicate the systemic risks posed by banking itself. It is therefore of some importance that, during the crisis, elements of liquidity and de facto solvency support were extended, especially in America, to a number of non-bank

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1 A good narrative of the events around "shadow banking" is the USA is provided by Kroszner and Melick in "The Response of the Federal Reserve to the Recent Banking and Financial Crisis", presented at *An Ocean Apart? Comparing Transatlantic Responses to the Financial Crisis*, in Rome, 10-11 September 2009. See also William Dudley in "More lessons from the crisis", remarks at the Center for Economic Policy Studies (CEPS) Symposium, Princeton, New Jersey, November 2009; and Adrian T and Shin H S (2009), "The Shadow Banking System: Implications for Financial Regulation", *Federal Reserve Bank of New York Staff Report* no. 382.

2 See Tucker P M W (2009d), "Regimes for Handling Bank Failures: Redrawing the Banking Social Contract", at the British Bankers' Association's Annual International Conference, London.

financial intermediaries, underlining the question of whether the perimeters of the banking system had been in the right place.

I am not, therefore, using "shadow banking" to refer to any old channel for credit intermediation other than bank lending. The corporate bond markets do not amount to a shadow bank. Rather, I am interested this evening in those instruments, structures, firms or markets which, alone or in combination, and to a greater or lesser extent, replicate the core features of commercial banks: liquidity services, maturity mismatch and leverage.

In that spirit, I will say something about money market mutual funds; finance companies; Structured Investment Vehicles and Asset Backed Commercial Paper; and securities dealers. I will also say something about some markets. In particular, the securities lending market; but also how the RMBS/ABS market can combine with repo funding to create investment structures whose leverage and liquidity risk creates some of the brittleness of banking systems. It is not intended to be an exhaustive, systematic survey. And beyond those interested in the details of how markets work, it is the general message that matters. Because some common threads ***are*** clear. Notably, maturity and credit transformation. Each of the vehicles, instruments or markets I will discuss has been used to transform longer-maturity, less liquid assets (loans) into shorter maturity, more liquid liabilities. In each case we need to decide whether or not we want to set constraints around the operation of those forms of shadow banking. And we need some principles to guide us when, inevitably, we confront new variants of shadow banking in the future. I do ***not*** have all the answers to these questions, so my goal this evening is to push them up the agenda. As the Governor of the Bank has underlined, it is vital we debate the structure of the financial system.

Money market mutual funds

Money funds gained access to official liquidity and capital support during the crisis. Indeed, almost any history of the past few years will give money funds a fairly central role. The suspension of redemptions by a European "enhanced return" money fund was the proximate trigger for the money market liquidity crisis in early August 2007. And, just over a year later in September 2008 following the Lehman's bankruptcy, the "breaking of the buck" by a US money fund pushed funding markets into complete turmoil.

Money funds began life in the US, as a response to now long abolished caps on interest rates that the banks could pay on deposits. They have become a gigantic part of the US financial system; at about $3trn, being roughly the same size as the transactions deposits of commercial banks. They are pretty big in Europe too – around $1½trn. They offer a bank like service: almost instant liquidity and purporting to be safe. Households (primarily in the US), institutional investors and corporate treasurers place liquidity with them. And they lend it out, purchasing commercial paper of various types as well as Treasury bills and providing repo financing. They are constrained by rules set by securities regulators (and rating agencies), although during the boom some managed to circumvent them (or at least their spirit) in a search for yield by buying ABCP backed by illiquid ABS, which would probably not themselves have been eligible for direct investment.

On both sides of the Atlantic, many are so-called Constant Net Asset Value (CNAV) funds.[3] Stripping through the detail, this means that they promise to return to savers, on demand, at least as much as they invest. Just like a bank. And just like a bank, they are subject to runs. If I, an investor, lodge notice of redemption one day, typically I expect to be paid the following day. If my withdrawal is large, the fund may have to sell assets to meet the redemption. If investors know or fear that a lot of their peers will also be redeeming, then they have an

[3] See Baba N, McCauley R and Ramaswamy S (2009), "US dollar money market funds and non-US banks", *BIS Quarterly Review*, March 2009.

incentive to (try to) get in first, in order to avoid the depletion in the value of the fund likely to flow from the forced asset sales. And, if a Constant-NAV fund's value goes just a few basis points below par (100p in the £1), they effectively have to close, fuelling the incentive to run. If this sounds like a bank, it ***is*** because it is just like a bank.

The money fund industry is a major supplier of short-term funding to banks. So its own maturity mismatch masks the true liquidity position of the banking sector, and injects extra fragility into the financial system as a whole. This is no longer theoretical.[4] When the Reserve Fund "broke the buck" after Lehman's failure, there was a run by institutional investors. The industry had to be given access to central banks' liquidity facilities to contain the vortex. Many banking groups running supposedly arms-length money funds injected "capital" into their funds to keep them afloat. Yet the funds had not been consolidated, and their bank sponsors had not had to hold capital against such implicit support.

Echoing the concerns that Paul Volcker is reported to have expressed at internal Federal Reserve meetings around thirty years ago,[5] the Bank of England believes that Constant-NAV money funds should not exist in their current form. They should become either regulated banks or, alternatively, ***Variable*** NAV funds that do not offer ***instant*** liquidity.

Meanwhile, so-called "enhanced return" funds should surely have to make clear what they are and what they are not. Offering 300bp (or whatever) over LIBOR is to offer a risky investment. There is nothing wrong with that. But securities regulators should ensure that the marketing and distribution is appropriate. "Money fund" does not seem to be quite the right label.

For both those riskier funds, and Variable NAV money funds, investors would clearly be exposed to risk, just as in mainstream equity and bond mutual funds.

Finance companies

My second example is so-called finance companies. They are prominent in, but by no means unique to, the US. Some operate globally. They are regular companies, which lend to firms and households, financed by issuing bonds and short-term commercial paper (CP) rather than by taking deposits. It can be tempting for them to extract a term premium by increasing their maturity mismatch. Some did so during the boom years. In the US and UK during the crisis, alongside the CP market more generally, they were given access by central banks to what in effect were discount-window type liquidity-insurance facilities.

It is not obvious to me that they should be regulated as commercial banks, as they do not provide monetary/payments services. But it is clear that this part of the credit system became fragile due to leverage and maturity mismatches. It relied on the CP market remaining open; and thus on money funds maintaining demand for corporate and finance-company CP; and, if that demand dried up, they relied on banks being able and willing to honour the committed lines that underpinned those CP programmes. But for too long and in too many countries, regulation did not adequately capture the associated credit and liquidity risk. The result was a shadow financing (or credit) system that was effectively dependent in adverse circumstances on the banking system, but without the banks being ready and able to support it through systematic stress.

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4 There were warnings years ago; for example in Edwards F (1996), "The New Finance: Regulation and Financial Stability", *American Enterprise Institute*.

5 And as recommended in the recent Group of 30 (G30) Report, "Financial Reform: A Framework for Financial Stability".

ABCP, and SIVs

The same is true of the Asset-Backed CP market. These vehicles are similarly reliant on committed lines of credit from commercial banks and, furthermore, in many cases were sponsored and managed by a bank. The case of Structured Investment Vehicles was subtly different. Some were sponsored by banks but did not have committed lines from them. Other SIVs were independently managed.

With hindsight one fairly obvious solution would have been for banks to consolidate, for accounting ***and*** regulatory purposes, any such vehicles that they sponsored, managed and provided credit lines for. Looking ahead, banks should perhaps quit using such devices to move assets off balance sheet while retaining de facto control. Supervisors should be alert to such devices in future. They might consider whether consolidation for these and other vehicles could be avoided only where a sponsor had made it 100% clear that they would not provide any support in any circumstances.

Securities dealers

The case of securities dealers is different – in that they were real businesses which had developed over many decades. After Big Bang – in the 1970s in the US, and a decade later in the UK – their balance sheets grew. The authorities had always been clear that they competed with commercial banks in credit markets (including ***before*** the repeal of Glass Steagal), but they were not regarded as monetary institutions and so they did not have access to central banks' liquidity-insurance facilities and were not regulated alongside commercial banks.

It turned out that this was a misthink; or, rather, that over time it was overtaken by developments in parts of their business.

During the crisis, the big US securities dealers suffered a liquidity run on two fronts. Repo markets closed to some of them; I shall come back to that later. Also, hedge fund prime-brokerage clients withdrew surplus balances (and transferred trading positions, with the associated collateral, to banks). Some dealers had been using them to finance their business, effectively on-lending "deposits" into the credit and securities markets. And some of them could not easily raise the funds to repay. As a sense of this spread, the demand for repayment inevitably intensified, into a panic.

Whatever the details of the law in the US, the UK and elsewhere, the dealers' prime brokerage services seem to have taken them into the core monetary territory of banks. Lehmans was running a bank, perhaps without knowing it. The dealers, or at least their prime brokerage outfits, should have been banks, with access to the central bank's Window and subject, at entity and group level, to US led bank regulation. Alternatively, they should not have been providing de facto demand deposit services and using those deposits to finance themselves.

The lesson here is to look at the economic substance, not the legal form.

Securities lending

Most accounts of the crisis give a headline role to SIVs, money funds, securities dealers and, as I shall come on to, the RMBS market. There has been rather less daylight, especially outside the US, around the somewhat obscure but very significant role played by the securities lending markets.

The vanilla securities lending market is straightforward and important: it intermediates the loan of securities (equities, bonds or whatever) by asset managers to short sellers who need to deliver securities to settle their transactions. Securities lending is absolutely vital to effective market making, and thus to efficient capital markets. Asset managers hold their securities with custodians and, ultimately, in Central or International Securities' Depositaries. Many enter into a service agreement under which their securities can be lent out by an agent. That provides the basis of a parallel, ***financing*** market. This is ***big***, perhaps $3½trn[6] at its peak. Say a Treasury Bond is lent out not against collateral in the form of securities but against cash, as is normal in the US market and had been growing in Europe before the crisis. The cash collateral can then employed in the market, ie it is lent to counterparties, usually secured. During the boom, risky assets, including ABS and CDOs, were increasingly accepted as collateral via so-called triparty repo arrangements, under which they were sometimes grouped with more innocuous securities with similar ratings. This effectively financed the inventory of dealers and other leveraged investors. Demand was strong. The financing tail came to wag the securities-lending dog. I doubt whether all asset managers understood the instruments they would have been holding outright in the event of a counterparty default.

But that is only the beginning. Some asset managers used the cash generated by securities lending to buy risky assets ***outright***. AIG's escapade in and massive losses from the CDS and CDO business is well known. Less remarked upon, although public,[7] is that the insurance parts of the group – not the derivatives part – lost enormous amounts of money from securities lending, as they ended up reinvesting vast amounts of cash in securities. These investments had maturities of years not months, notwithstanding that a securities lending contract typically gives ***the borrower*** as well as the lender (ie the underlying owner of the securities) a right to terminate the transaction on demand. Again, I suspect that many asset managers did not understand their exposures. They had leveraged up, and exposed themselves to liquidity risk. Securities lenders like AIG were effectively assuming robust liquidity in the secondary market for their reinvestment securities. They were wrong. As the value of those assets fell, "securities lending" counterparties called their repos. In effect, to add to the problem of accumulating investment losses, AIG suffered a repo run – just like a bank run, in fact.

And as the crisis progressed, our sense is that securities-lending-based financing of leverage was withdrawn, exacerbating the deleveraging in the system, the erosion of market liquidity, and falls in asset values.

There are a number of possible lessons here. One is that there needs to be greater transparency and integrity around key financing markets. In the particular case of securities lending, we should consider whether it might lend itself to central counterparty clearing; and if not, as may well be the case for some types of security, we should explore whether transactions could, nevertheless, usefully be registered with a trade repository, with aggregate data published – along the lines now provided for the CDS market. Second, regulators should consider putting restrictions around what regulated firms can take as collateral against securities lending or, alternatively, should ensure that leverage, counterparty-credit and investment risks are properly disclosed to the market. Third, insurance regulators internationally should be sensitive to business lines that can leave an insurer leveraged and exposed to liquidity runs.[8] Fourth, the custodians and ICSDs should review the basis on which they group different kinds of assets for use as collateral in various of their triparty facilities. It should be obvious to a lender when it is taking risky assets as collateral. And conduct-of-business regulators should probably take a look at how custodians market and explain their services to their clients. In the UK, the Securities Lending and

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6 Source: Data Explorers.

7 Losses in AIG's securities lending business were reported in the firm's 2008 10-K submission to the SEC, pp 166–167.

8 This issue may now be on the agenda of insurance regulators. See the recent Joint Forum report, "Review of the Differentiated Nature and Scope of Financial Regulation", January 2010.

Report Committee provides one forum for the different parts of the market and authorities to debate these issues.[9]

RMBS, repo and shadow banking

Perhaps the market that has been most discussed in the wake of the crisis has been the RMBS market. Right now, most of the discussion is about how to revive the mortgage-bond market, and the securitisation markets more generally, given their potential significance for the financing of households and firms. That eagerness is hardly surprising given the likely strain on the Western world's banking system if, over the coming few years, it had to reintermediate flows of credit that had previously gone through the ABS markets.

Some have suggested that asset-backed-securities are yet another form of shadow banking.

At one level, this seems obvious. Take Northern Rock. When it ran out of money, the authorised bank had a balance sheet of around £50bn, virtually all mortgages. The same management team was running the "Granite" securitisation vehicle; also with a balance sheet of about £50bn, and also all mortgages. Granite held surplus liquidity with its sister bank, which was not immaterial to Northern Rock's funding. When the RMBS market closed and Granite could not continue to expand, the management team had a backlog of mortgages that the bank was temporarily warehousing but was likely to be unable to finance permanently. That undermined confidence in the bank itself. And if the bank had been downgraded, Granite might have had to pull its funding. So they were very inter-twined. For accounting purposes, Granite had to be consolidated. For regulatory capital purposes, Granite was largely off-balance sheet. The Basel Supervisors Committee is now reviewing its capital rules on securitisation. But another basic principle may commend itself; we should not allow one management team to run two apparently separate and significant vehicles in a completely joined up way – one a de jure bank, the other a de facto bank – when the funding and risk interlinkages are so strong.

Some commentators have argued that the extent to which the securitisation market has the economic characteristics of banking goes deeper than that.[10] This account goes broadly as follows. The Lehmans crisis and its aftermath had at its core a run on ***repo*** financing of holdings of, amongst other things, RMBS and other ABS. The banking system had originated assets and issued them into capital markets via ABS. But the same banking industry financed investors' purchase and holding of those ABS; and then financed ***themselves*** via short-term reverse-repo of those assets. In other words, across the system there was too great an element of banks (and dealers) having shed credit portfolios only so long as they could sustain their own repo financing. Meanwhile, firms such as AIG and funds of various kinds had bought ABS and CDOs financed by short-term repo, so that they held portfolios of household and corporate loans financed at very short maturities – just like a bank, so the argument goes. When the crunch came and ABS asset values fell, some of these firms and funds could not rollover their funding. In the case of some dealers and AIG, end of story. Indeed, towards their end, some could not even repo-out US Treasuries to raise cash! The chain of financing was too long and too fragile to prove resilient under stress.

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[9] The Securities Lending and Repo Committee is a UK-based committee of international repo and securities lending practitioners and representatives of trade organisations, together with bodies such as Euroclear UK and Ireland, the UK Debt Management Office, the London Stock Exchange and the FSA. It is chaired and administered by the Bank of England. The terms of reference can be found at: www.bankofengland.co.uk/markets/gilts/slrcterms.pdf.

[10] For example, see Gorton G B (2009), "Slapped in the Face by the Invisible Hand: Banking and the panic of 2007", paper prepared for the 2009 Federal Reserve Bank of Atlanta Jekyll Island Conference.

What are the lessons? Part of the problem was that when the music stopped, just as the market was uncertain which banks were sound, investors and savers could not tell a sound ABS from an unsound ABS. So one lesson must surely be that securities regulators and exchanges, which admit ABS to listing, should set more exacting but also simpler standards for transparency. They surely have a clear role to play in the regime for the issue and distribution of such securities. IOSCO has been working on this.[11]

A second lesson is that we have to be clearer about the nature and extent of risks retained by originators. The Basel Committee is focused on this.

Other ideas are more radical. It has been suggested that, when combined with repo, the ABS market amounts to a major shadow banking system – portfolios of loans financed short term, so with maturity mismatch risk. It follows from this, it is suggested, that the **kind** of social contract that applies to the mainstream banking system should be extended, suitably adapted, to the ABS market. On that view, AAA tranches occupy a place in the capital structure of a securitised shadow banking system equivalent to that of retail deposits in the capital structure of mainstream banks, and so should be guaranteed by governments or, in a closer analogy to retail-deposit protection, by industry-funded insurance schemes; and with issuers subject to authorisation criteria.[12]

I am not at all endorsing those prescriptions here. Rather I mention them because they serve to highlight two things. First, understanding markets for financing leveraged holdings of risky securities is vital. Second, there is a need to think through carefully just what really comprises shadow banking, and how the regulatory system should treat its different manifestations. The primary task of the "regulation and structure" debate is to make the ***core banking system*** safe and sound. In addition, we need to think through how to avoid the problems of the past few years replicating themselves beyond the perimeter of the regulated banking sector. Banking supervisors cannot sleep safely solely on the basis of their own work. The financial stability authorities need to attend to the dynamics of the overall system. But we must also keep in the need to be careful to avoid seeing "shadow banking" everywhere and in all capital market innovations.

Possible principles and some conclusions

In the 1980s and 1990s there were active debates about non-bank banks.[13] The ballooning of off-balance sheet finance in the mid-1980s provided the initial impetus for the first Basel Capital Accord. So I fear that we have been here before, struggling to make sense of innovations and complexity.

Market intelligence can surely help.[14] But next time round we need better system-wide data on the flow of funds and the flow of risk, which would enable us to put some hard facts alongside intelligence. The authorities need to be able to recognise when a variant of

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[11] See the International Organization of Securities Commission Consultation Report, "Transparency of Structured Finance Products, September 2009. Overall, it is surprising how little commentary there has been from the perspective of securities market regulators. An exception is Luigi Zingales, "The Future of Securities Regulation", *Chicago Booth School of Business Working Paper* No. 08–27. While I do not necessarily support all of his prescriptions, the paper is noteworthy for approaching the reform agenda from the perspective of securities markets and regulation rather than solely that of bank soundness and prudential supervision.

[12] See Gorton, op cit.

[13] See Bank for International Settlements (1986), "Recent innovations in international banking", prepared by a Study Group established by the Central Banks of the Group of Ten Countries, known as "the Cross Report".

[14] For examples of market intelligence on innovations at the beginning of the latest cycle see, Rule D (2001), "Risk transfer between banks, insurance companies and capital markets: An overview", *Bank of England Financial Stability Review*, December 2001.

"shadowing banking" has become significant to sustaining stability in the provision of essential financial services to the broader economy; when it is founded on liquidity lines, incomplete risk transfer or other kinds of support from the core commercial banking system; and when it involves the provision of the liquidity or monetary functions of banking as well as credit intermediation.

Running leverage and liquidity risk is ***not*** sufficient to make a firm or fund a de facto bank. I do not think AIG's securities lending/credit spread business was really a bank. More like a hedge fund. But the risks that these and other businesses bring to the system certainly matter. And the channels through which this crisis spread underline the need for more transparency around key ***financing*** markets. For example, too few realised the significance for the system of how the securities lending markets had developed. Central banks ought to be able to make a contribution to this, sitting as they do at the centre of the mainstream repo markets and through standing ready to discount a wide range of securities in their liquidity-insurance facilities. But there is a key job for prudential supervisors and securities regulators in ensuring that leverage and maturity mismatch is understood and transparent.

For those forms of financial intermediation that are dependent on banks for leverage and liquidity, it may be that we can develop macroprudential instruments that could be deployed to restrain excess by influencing banks' supply of credit to them. That is another major area of work.[15]

But where a form of shadow banking provides an alternative home for liquid savings, offering de facto deposit and monetary services, then I think we should be ready to bring them into the banking world itself. In the latest episode, constant-Net Asset Value, instant-access money funds and the prime brokerage units of the dealers seem to have been examples of that.

We have not seen the last of regulatory arbitrage. So we need policies and principles that stand in the way of its weakening the resilience of the system, while allowing enterprise and our capital markets to flourish.

[15] See the Bank's recently published paper: "The role of macroprudential policy: A discussion paper" and Tucker P M W (2009e), "The debate on financial system resilience: Macroprudential instruments" at the Barclays Annual Lecture in London.