

Dividends and Bank Capital in the Financial Crisis of 2007-2009

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Introduction

Financial intermediaries have been at the center of the financial crisis that began in August 2007. They have borne the lion's share of the credit losses from securitized subprime mortgages, even though securitization was intended to parcel out and disperse credit risk to investors who were better able to absorb losses.⁴ The capacity to lend has suffered as intermediaries have attempted to curtail their exposure to a level that can be more comfortably supported by their capital.⁵ As the credit crisis has hit real activity, banking assets across the board have suffered, ranging from prime mortgages, commercial real estate, corporate debt and household debt, from credit card loans to auto loans.

The accumulated losses in the current crisis have been very large, but so have the headline figures for the amount of new capital raised. Table 1 and Figure 1 illustrate this "catching up" of capital with losses incurred (all figures and tables are gathered together at the end of the paper).

The headline figures at the time of writing are as follows. The cumulative acknowledged credit losses for financial institutions worldwide since the beginning of the financial crisis in August 2007 have been \$1.11 trillion. Set against this, the headline figure for new capital raised is \$900 billion. On the surface, the new capital raised is substantial, almost matching the losses so far. We see from Table 1 that there are some regional variations, with new capital raised in the Americas being smaller relative to losses when compared to Europe. Although a substantial amount of new capital raised worldwide was in the final quarter of 2008 as part of government-funded recapitalization of the banking sector, the raw numbers seem impressive.

However, a closer look at the numbers reveals a much less sanguine picture of the state of the banking sector. We highlight three features in particular that are worthy of closer scrutiny.

First, the *composition* of bank capital has changed, with most of the new capital being raised in the form of debt or hybrid claims such as preferred equity. When leverage is measured as the ratio of total assets to *common equity*, the leverage of the banking sector

⁴ In some cases, this appears to have been by design, e.g., in structured investment vehicles (SIVs) and asset-backed commercial paper (ABCP) conduits, where banks sold guarantees to securitization vehicles to game capital requirements; in other cases, it appears to have been a highly levered bet on the economy, e.g., as manifested in the holdings of AAA-rated mortgage-backed securities which banks held up to 39% of all such securities. See Acharya and Schnabl (2009) for detailed evidence of such "securitization without risk transfer".

⁵ See, for example, Ivashina and Scharfstein (2008) who document that during the ongoing crisis, banks have made very few new loans and primarily honored drawdown on pre-arranged lines of credit. Acharya, Almeida and Campello (2009) show that firms whose lines of credit were maturing right after the onset of the crisis (August 9, 2007) have effectively behaved as financially constrained firms – saving cash, lowering investments and reducing leverage, when compared to identical firms whose lines of credit were maturing only in future; this difference being non-existent between the two sets of firms in the periods leading up to the crisis.

in the US and Europe has risen relentlessly during the crisis, as we will show below. We argue that the continued reluctance of banks to lend may be attributable (at least in part) to the high leverage – and leveraging incentives – of the banking sector.

Second, even as the banking system has suffered the depletion of common equity through losses on the asset portfolio, banks have continued to pay dividends throughout the crisis. As we will show, the outflow of common equity in the form of dividends has been very substantial in relation to total assets and total credit losses. This outflow has deprived the banking system of much-needed common equity capital precisely when it was most needed. This erosion of common equity through dividends points to the breakdown of the priority of debt over equity. Banks that have ultimately received public funding support and are in serious risk of failure have continued to pay out dividends right from the period leading up to the crisis until the period after Lehman Brothers' bankruptcy. For a bank whose losses can be anticipated, it can be argued that dividends were paid to equity holders at the expense of the debt holders (including the taxpayers who fund bailouts). This is a straight transfer in violation of the priority of debt over equity, which is sustained because of the slow-moving nature of book equity. In effect, the inertia in bank accounting makes even a distressed bank appear healthy in terms of its book capital ratios, enabling a transfer in violation of priority of debt over equity.

Third, but not least, as common equity is paid out on the liabilities side of the balance sheet, the assets that get depleted on the asset side are the safe marketable assets – especially cash or government bond holdings. What gets left behind are the illiquid, riskier assets. This implies a type of risk-shifting or asset substitution that further favors the equity holders over the debt holders for the usual reason that equity holders' claims are convex claims over the asset payoffs, while debt holders have concave payoffs. Whereas traditionally risk-shifting has been discussed mainly in the context of new investments (as in the seminal work of Jensen and Meckling, 1976), we can see that risk-shifting can also be accomplished through changes in the capital structure of the bank. Paying out dividends in the form of cash leaves behind riskier assets on a thinner equity cushion, which benefits the shareholders once again, at the expense of the debt holders.

On a related point, since many of the equity holders are also employees of the bank, the diversion of funds from debt holders (including taxpayers) to equity holders is related to the thorny and politically charged issue of employee compensation in banks. In this sense, our paper can be seen as a contribution pointing out how the determination of bank capital structure and dividend policy can be seen as a part of the larger debate on compensation issues. The standard view on corporate governance that emphasizes shareholder value may have unintended and adverse consequences for swift resolution of failing banks.

Our paper is primarily a descriptive study documenting in a comprehensive way the time profile of losses and amount and type of new capital raised by banks in recent years, and especially since the beginning of the current financial crisis. Although our study is by design a “fact-finding” descriptive study, we believe that it contributes on two fronts. First, the facts themselves are striking, and we have attempted to present the evidence in

a unified way that conveys the big picture. More importantly, the facts uncovered imply important conclusions both for the way that banks have conducted themselves in the current crisis, and also for implications on the reform of the rules governing bank regulation.

In particular, we believe that the dwindling pool of common equity may be an important reason for the continued reluctance of banks to extend credit in spite of the large-scale injection of bailout capital. Most of the public injections of bank capital in the United States through the TARP program took the form of preferred equity rather than common equity. As a consequence, banks' leverage relative to common equity has increased relentlessly. To the extent that the common equity cushion has been subject to increasing compression, the stake of the controlling equity holders have shrunk in accordance. This is a recipe for inducing more cautious behavior on the part of banks, and has led them to take an extremely conservative attitude toward taking up the slack in intermediation left by the collapse of the securitization market.

A recent speech by Bill Dudley (2009), the new President of the Federal Reserve Bank of New York, notes that executives at banks and government-sponsored enterprises told regulators "repeatedly over the past 18 months" that "now is not a good time to raise capital". He goes on to say:

"This desire to postpone capital raising stems in part to the fact that bank executives often do not want to dilute existing shareholders, which of course include themselves. [...] The self-interested thing to do is avoid the dilution and hope for a good state of the world."

The fear of dilution leads incumbent shareholders to under-invest in raising new common equity capital, an agency problem that is a variant of the Myers (1977) debt overhang problem (again, not in the context of new investments).⁶ This juxtaposition of agency problems at failing banks – underinvestment in issuance of new capital and erosion of existing capital through dividend distributions – poses some of the most difficult questions for bank resolution policy.

This divergence in the interests of the incumbent controlling shareholders from the broader public interest also raises questions on what should be the proper notion of regulatory capital. Under the current system of bank regulation, capital is regarded as a buffer against loss for senior creditors, and especially retail depositors. Hence, under the current system, regulatory capital includes subordinated debt and preferred equity. We believe that a serious re-think is necessary on whether such hybrid claims should qualify

⁶ Some others, see for example Tucker (2008), argue that the reluctance may be due to banks wanting to avoid sending an adverse signal to markets and suffering dilution due to lemon's premium (as in the Myers and Majluf, 1984, model of costly equity issuance). Tucker also raises the possibility that bankers may believe that many of their assets are in fact "under-valued" and thus be avoiding building up of excess capital, but hastens to add that this is at odds with almost perfect dearth of buyers for these supposedly under-valued assets.

as part of regulatory capital. In future, regulators may have no choice but to employ intervention thresholds that are tied to market value of equity and market-imposed leverage constraints such as extent of rep haircuts faced by a financial institution in the market for borrowing.

Before we discuss these policy implications, we provide descriptive evidence on capital raised by 21 large banks⁶ in the United States, the United Kingdom and Europe, focusing especially on the type of capital issued, and on the dividend policies and capital structure of these banks, in the period 2000-2008. In some cases, the 2008 data are not yet available and they have either been omitted or their unavailability indicated.

Capital and Dividends

Table 2 shows the total capital raised by each bank in our sample during the period 2000 to 2008 and the type of capital – common equity, preferred equity or debt. In total, \$1.76 trillion of capital was issued by these banks, but a staggering \$1.64 trillion out of this – that is, 93.2% - was in fact raised in the form of debt. More than 6.8% of the remaining capital was issued in the form of preferred debt, especially during the crisis period of 3Q 2007 to 4Q 2008, implying that from 2000 to 2008, banks in fact were net buyers of common equity rather than issuers. These 21 large banks of the US, the UK and Europe, had negative common equity issuance – that is, more of share buyback than share issuance – of \$24.1 billion. This pattern is remarkable since this was a period over which bank balance-sheets grew significantly, so it must be that as documented by Adrian and Shin (2008), this growth was funded close to one for one by a combination of (primarily) debt and (to a smaller extent) preferred.

Figure 2 plots this division of capital issued into security type for individual banks. There are some differences that stand out. While JPMorgan, the relatively better performer during the crisis, issued debt in quantity that was four times common equity issued, in case of Citigroup this ratio was thirteen; and though Wells Fargo and Bank of America were also net buyers of common equity, they did not issue too much debt either (they grew far less rapidly than Citigroup). HBOS, one of the beleaguered UK bank during the crisis, had the ratio of debt to common equity issued of 29. And, in another salient example, UBS was net buyer of common equity but issued \$135 billion of debt. Even if with the benefit of hindsight, the relationship between type of capital issued and the ex post performance of banks is hard to ignore.

Tables 3a and 4 (and corresponding Figures 3 and 4) show that the evidence thus far masks one important fact – that banks had in fact been paying out significant dividends, not just during 2000-2006 but also during the crisis period of 2007-2008. Bank dividend payouts *increased* from being 0.27% of assets in 2002 to upto 0.34% of assets in the first

⁶ Complete details are provided in the Appendix. Appendices A and B describe the variables we employ and their sources and the frequency of their measurement. Appendix C lists for each of the 21 banks the exact nature of each individual capital issuance from 2007 - 2009.

three quarters of 2008. In effect, bank management hardly reduced their dividends in the first fifteen months of the worst crisis to have hit them. Figure 3 shows also the cumulative dividends – as an upper bound on the extent of capital erosion, and along with this series, the market value of common equity (stock measure, not flow) in each year. While the crisis essentially knocked out most of this value from 2007 to 2008, the cumulative dividend series shows that relative to 2007 market capitalization of \$1.5 trillion, a third – around \$500 billion – was distributed as dividends during 2000-2008 (with \$130 billion distributed during 2007-2008).

Anecdotal evidence is consistent with a reluctance to cut dividends or even reduce their amount.⁷ Lehman Brothers Holdings announced a 13% increase in its dividend and a \$100 million share repurchase in January 2008; Citigroup cut its dividend close to zero only in November 2008; JPMorgan and Wells Fargo, while recipients of the TARP capital in Fall 2008 cut dividends as late as February and March 2009, respectively; and even as the Federal Reserve is urging banks receiving bailout funds to cut dividends, Goldman Sachs and Morgan Stanley are yet to do so (as of March 2009). This is to be compared to the fact that 61 components of the Standard & Poor's 500-stock index cut their dividends during 2008.⁸

It is also interesting to see in Figure 4 that while the market value of common equity rose throughout 2000 to 2007, in proportion to total bank assets, it in fact fell from 6% in 2000 to just over 4% in 2007. The cumulative dividends amounting to over 2% of assets between 2000 and 2007 thus represent a negative capital issuance of a fairly significant magnitude relative to banking sector's capital base. While this figure compared cumulative dividends to banks' market capitalization, Table 5 and Figures 5a-5b show the importance of dividends relative to total capital issued – common equity, preferred equity and debt. As discussed earlier in the context of Table 2, the fact that banks on average bought back shares during 2000-2007 is only amplified by the additional fact that there was negative common equity issuance through dividend payouts. Indeed, as we examine 2007, it increasingly appears that issuances of preferred equity were consumed up to at least 50% by common equity holders. Injection of government money without strings may thus have just been serving the conflicted interests of bank management and shareholders.

Leverage

While under-investing in issuance of new equity capital and continuing to pay out dividends during the crisis are manifestations of the conflict between incumbent

⁷ See Table 3b for bank by bank history of dividend distributions. Also see the press articles: *Dividends Cut Fastest Since 1950s as Citigroup Conserves Cash* (Bloomberg, November 26, 2009); *JPMorgan Cuts Dividend 87 Percent to 5 Cents a Share* (Bloomberg, February 23, 2009), *Fed Urges Banks to Put Bailout Funds Into Loans, Not Dividends* (Bloomberg, February 24, 2009), *Wells Fargo Cuts Its Dividend 85%* (Wall Street Journal, March 7, 2009).

⁸ Financial economists had argued for a stop on bank dividends right around the TARP announcement (see Scharftein and Stein, 2008).

shareholders and creditors of banks, it is equally interesting to examine their capital structure – viewed through a range of leverage ratios – in the period leading up to the crisis. The examination underscores the earlier evidence that asset growth of banks during 2000-2007 was funded primarily through debt, especially through short-term debt, and not through build up of common equity capital.

Table 6 shows a large number of leverage ratios for the 21 banks of our sample – divided into commercial banks and investment banks⁹ – for the fiscal years 2000 through 2007. The numbers reported are averages within each division. Figures 6a-6d focus on time-series evolution of four of these ratios, which we focus on in our discussion.

Figure 6a shows the corporate finance measure of leverage – the debt/shareholder equity ratio, and Figure 6b shows another measure - the assets/common equity ratio (common equity being shareholder equity minus preferred equity). In both cases, the pattern is similar. For both commercial and investment banks, the capital structure was getting increasingly levered from 2000 to 2007. The debt/equity ratio for commercial banks increased from around 5.0 to 6.5, whereas for investment banks, it increased from 11.0 to 19.0. The assets/common equity ratio for commercial banks grew from 16.0 to 22.0, and for investment banks grew almost two-fold from 17.0 to 35.0.

It is clear thus that the asset growth that banks experienced during 2000 to 2007 was increasingly funded by debt. What kind of debt? To shed light on this, we plot in Figures 6c and 6d respectively, the ratio of deposits to non-deposit debt and the ratio of loans to deposits (the ratios being more relevant for commercial banks than for investment banks). Both figures suggest that bank debt grew in forms other than deposits and that commercial banks' loan growth was also increasingly funded through non-deposit debt. For instance, for commercial banks the ratio of deposits to other debt fell from 1.4 to 1.2, and the loans/deposits ratio grew from a low of 0.93 in 2001 to 1.04 in 2007.

Further, while the growth in loans and assets was primarily of the long-term type – mortgages to a large extent and corporate and private equity finance to some extent – the nature of non-deposit debt financing was in fact of the short-term type. That is, bank capital structures were not only looking increasingly levered and funded through non-deposit type debt, they were also experiencing a rise in maturity mismatch (or duration gap between assets and liabilities) and were thus vulnerable to economy-wide shocks that generally tend to cripple the markets for short-term financing.

This short-term aspect of bank leverage is captured in Tables 7 and 8, and corresponding Figures 7 and 8. Table 7 shows the worldwide quarterly outstanding amounts for commercial paper – usually of 90-day maturity and more than 75% of which tends to be issued by financial institutions. From a steady issuance of around \$1.4-1.5 trillion during 2000-2004, the amount rose sharply to a peak of \$2.2 trillion during 2Q 2007. Following the money-market freeze of August 9, 2007, the figure fell sharply from its peak to

⁹ See Appendix C for the classification of each bank into commercial bank or investment bank.

around \$1.62 trillion in 3Q 2008 (picking up somewhat in 4Q 2008 due to guarantees, for example, by the Federal Reserve).

Figure 8 shows the evolution of commercial paper to total assets for commercial and investment banks in our sample of 21 banks. While investment banks were always financed in a significant way through unsecured short-term commercial paper, what is striking is that commercial banks increased their reliance on commercial paper two-fold from fiscal year 2000 to fiscal year 2007.

Viewed from any dimension – overall leverage, deposit versus non-deposit leverage, and maturity of leverage – banks were pursuing a risk-shifting strategy, and importantly, not just through their choice of assets, but also through their capital structures.

There is one important lesson for bank regulation in all this. While standard corporate finance measures of capital, dividend distribution and leverage were individually and jointly implying that bank behavior reflected a serious conflict of interest between shareholders and creditors, regulatory measures of capital adequacy – for example, the ratio of capital to risk-adjusted assets – hardly moved (see, for example, Box 1.3 of IMF, 2008 given as Figure 10 below). Why was this so? While some of this had to do with the large holdings of AAA-rated tranches of mortgage-backed securities on bank balance-sheets, which attracted little capital charge and thus kept the level of risk-adjusted assets (the denominator) to a low figure, the measurement of capital (the numerator) was also problematic.

Implications for capital requirements

It is useful to distinguish between two different notions of bank capital. There is, first, the notion of bank capital (implicit in the Basel approach) as a buffer against loss that protects depositors. Under this first notion of bank capital, hybrid claims such as preferred equity or subordinated debt are counted as bank capital, since both are claims that are junior to depositors. Indeed, under the Basel capital accord, subordinated debt counts as Tier 2 capital.

However, there is a second, contrasting notion of bank capital as the claim held by the owners of the bank who have control over the bank's operations. The repo haircut¹¹ encapsulates such a notion of bank capital. The equity stake implied by the haircut is the residual claim that the controlling owner of a leveraged entity must maintain in order to obtain credit from the capital market.

Arguably, hybrid claims such as preferred shares or subordinated debt do not qualify as bank capital under this second notion of bank capital, as they can be seen as junior forms

¹¹ Formally, repo haircut is one minus the fraction of an asset or security's value that a financial institution can borrow against that asset or security. For many assets, especially the mortgage-backed tranches, the repo haircut has been close to 100% during the crisis

of debt. When the bank has too little capital in this second sense, the owners' incentives reflect their highly leveraged balance sheet. When faced with a dwindling stake in a leveraged entity, controlling owners have little to lose, and everything to gain by engaging in risk-shifting bets on the bank. The increased haircut imposed by the capital market during distress episodes could be seen as the increased margin demanded by creditors in the capital market to changed incentives, or the reduction in funding capacity of an asset in anticipation of the attendant risk-shifting problem¹².

The key point is that the repo haircut and the implied maximum leverage is a constraint imposed by the capital market, and reflects the terms on which creditors are willing to lend to those with control over the leveraged entity. One plausible channel through which the constraint operates is the wish by creditors to avoid being embroiled in a lengthy and costly bankruptcy settlement after the borrower has defaulted. When a bank breaches the maximum leverage ratio permitted by the market, the bank must take remedial action to reduce its leverage, or face a run by its creditors.

When bank capital is viewed as the equity that creditors demand in the market, then there is a maximum degree of leverage that the market will permit. The haircut in a repo contract encapsulates such a notion of equity. The market demands a minimum stake to be held by the entity that controls the asset. As the market haircut fluctuates in line with capital market conditions, so will the maximum leverage that the market permits. If a bank breaches the maximum leverage, it must find new equity to bring down leverage or face a run by its creditors. Hence, this notion of bank capital requirement is likely to be more reflective of market conditions than the current notion of regulatory bank capital

The Case of Northern Rock

Northern Rock, the first bank to experience demise in the crisis, illustrates these issues starkly. Northern Rock was a highly leveraged institution when considering the leverage on common equity. Its high leverage made it especially vulnerable to deterioration in overall funding conditions for the financial system as a whole.

Figure 9 plots the leverage of Northern Rock from June 1998 to December 2007, using three different measures of equity; Table 9 provides the corresponding data. Common equity is the most basic form of equity – it is the stake held by the owners of the bank with voting power and thus by those who have the right to exercise control the bank. “Shareholder equity” in Figure 9 is defined as common equity plus preferred shares. Finally, “total equity” in Figure 9 is shareholder equity plus subordinated debt, a class of debt that is senior to the common and preferred equity, but which is junior to other types of debt taken on by the bank, including deposits.

¹² Acharya and Viswanathan (2007) built a model of funding liquidity of financial institutions tied to such a risk-shifting problem

In the early years of Northern Rock's operation as a public limited company, there was no distinction between total equity, shareholder equity and common equity. All equity was just common equity. However, beginning in 2005, the total equity series included for the first time 736.5 million pounds worth of subordinated debt, as well as 299.3 million pounds worth of reserve notes (Northern Rock 2005 Annual Report, p. 51). Both of these items had been issued earlier (in 2001), but they were included in the equity series in the annual report for the first time in 2005. Treating these subordinated debt items as "equity" explains why the bottom curve in the figure shows a drop in leverage in June 2005. However, when the subordinated debt items are excluded, and equity is construed just as shareholder equity, Northern Rock's leverage continued to increase in 2005. In 2006, Northern Rock issued 396.4 million pounds worth of "preference shares," which it counted as shareholder equity (Northern Rock 2006 Annual Report, p. 59). This issuance of new preference shares accounts for the jump down in the leverage series with respect to shareholder equity in June 2006.

Subordinated debt serves as a buffer against loss for depositors. It is for this reason that under the Basel rules, subordinated debt is viewed as being part of bank capital (as "tier 2" capital). Preference shares can also act as a buffer against loss for depositors. However, there is a strong case for claiming that neither subordinated debt nor preferred shares count as capital when considering the maximum leverage permitted by the capital market.

When leverage is interpreted strictly as the ratio of total assets to common equity, then Northern Rock's leverage continued to climb throughout its history as a public company, rising from 22.8 in June 1998, just after its floatation, to 58.2 in June 2007, on the eve of its liquidity crisis. This level of leverage is very high, even by the standards of the U.S. investment banks at this time (around 25 to 30). Of course, Northern Rock's leverage jumped even higher in December 2007 after its run, following the depletion of its common equity from losses suffered in the second half of 2007. The leverage on common equity at the end of 2007 was 86.3!

Consider the situation of Northern Rock in the Fall of 2007. When a borrower is as highly leveraged as Northern Rock, small fluctuations in its implied haircuts can cause large shifts in available funding. If Northern Rock could borrow with a haircut of 2 percent, but then found itself needing to borrow at much higher haircut, the required reduction in leverage for Northern Rock was extreme. From the standpoint of Northern Rock, this reduction in the leverage permitted by the market manifested itself when many outside creditors declined to roll over existing short-term loans. In this sense, the "run" on Northern Rock was just a matter of when the next pullback in funding conditions would arrive. When the tide eventually turned, institutions with extreme leverage and balance sheet mismatches were left on the beach. Northern Rock was not the only one to find itself beached, but it lacked the liquidity support of a larger sponsor – apart from the Bank of England.

In effect, Northern Rock was faced with a giant margin call, where lenders demanded higher haircuts. The usual way to meet a margin call is to sell some assets to raise the

cash. But the assets of Northern Rock were illiquid long-term mortgages, so that it could not meet those margin calls. It was the inability to meet the margin call that led to Northern Rock's demise. The repo haircut and assets to common equity ratios conveyed a more accurate picture of Northern Rock's health than regulatory measure of its capital adequacy.

Conclusion

In this paper, we have delved deeper into the evolution of bank capital during the current global financial crisis. The crisis which initially erupted in 2007 in the subprime mortgage sector in the United States has led to a decline in real economic activity, leading to further credit losses in other mainstream credit categories such as prime mortgages, commercial real estate, corporate debt and other household debt such as credit card loans and auto loans.

Even as banks and financial intermediaries have suffered large credit losses as the financial crisis has gathered pace, the headline numbers obscure important shifts in the composition of bank capital, and hence on the constraints banks face in their daily operations. We have shown that the bulk of the new capital raised both from private investors and from government-funded capital injections have been in the form of debt-like hybrid claims such as preferred equity and subordinated debt, and not in the form of common equity. Furthermore, banks have continued to pay large sums in the form of dividends that have further eroded the common equity base.

As a result, there has been a relentless increase in the leverage of the banking sector, when leverage is measured with common equity on the denominator. We have argued that common equity is the more appropriate notion of bank capital when we want to capture the idea of market-based capital requirements that creditors would like to impose on borrowers. The alternative notion of bank capital which includes subordinate debt and hybrid claims (as a buffer against loss for depositors) is less appropriate, even though this latter notion of capital is what is enshrined in the current banking regulations.

We argued that continuing dividend payments during the crisis represent a transfer from equity holders of banks to creditors (and taxpayers) in violation of the priority of debt over equity. We have further argued that the increased riskiness of the remaining assets of the bank represent a type of risk-shifting that benefits equity holders at the expense of creditors (and taxpayers).

Thus, we conclude that early imposition of regulatory sanctions against the paying of dividends (for instance, as part of an increasing "ladder of sanctions" that are based on market or common-equity based notions of bank leverage) may have an important place in the agenda for reform of the regulatory system. The proposals in the Geneva Report (Brunnermeier et al. (2009)) argues for such a ladder of sanctions.

In general, the events of the last 18 months have posed several challenging questions on the proper notion of bank capital that should inform bank regulation. We offer our paper as a small step in this important debate.

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Table 1a – Credit Losses and Writedowns incurred (all financial firms including banks, brokers, insurers and GSEs) during 2007-2008

(\$ bn)	3Q07	4Q07	1Q08	2Q08	3Q08	4Q08	Total Loss
Worldwide	59.6	214.9	222.2	164.6	246.3	198.4	1,106.0
Americas	43.9	126.1	132.6	110.3	196.4	148.9	758.2
Europe	15.1	77.1	78.7	50.5	46.5	48.8	316.7
Asia	0.6	11.7	10.9	3.8	3.4	0.7	31.1

Source: Bloomberg WDCI, updated 23rd Feb, 2009

Table 1b – Capital Raised (WDCI) - for all financial firms including banks, brokers, insurers and GSEs during 2007-2008

(\$ bn)	3Q07	4Q07	1Q08	2Q08	3Q08	4Q08	Total Capital
Worldwide	13.8	71.5	87.5	191.9	96.7	432.8	894.2
Americas	3.1	47.1	62.6	103.1	43.9	261.9	521.7
Europe	10.7	24.4	21.1	75.6	44.4	144	320.2
Asia	0	0	3.8	13.2	8.4	26.9	52.3

Source: Bloomberg WDCI, updated 23rd Feb, 2009

Figure 1 Capital Raised vs. Credit Losses incurred by worldwide financial institutions

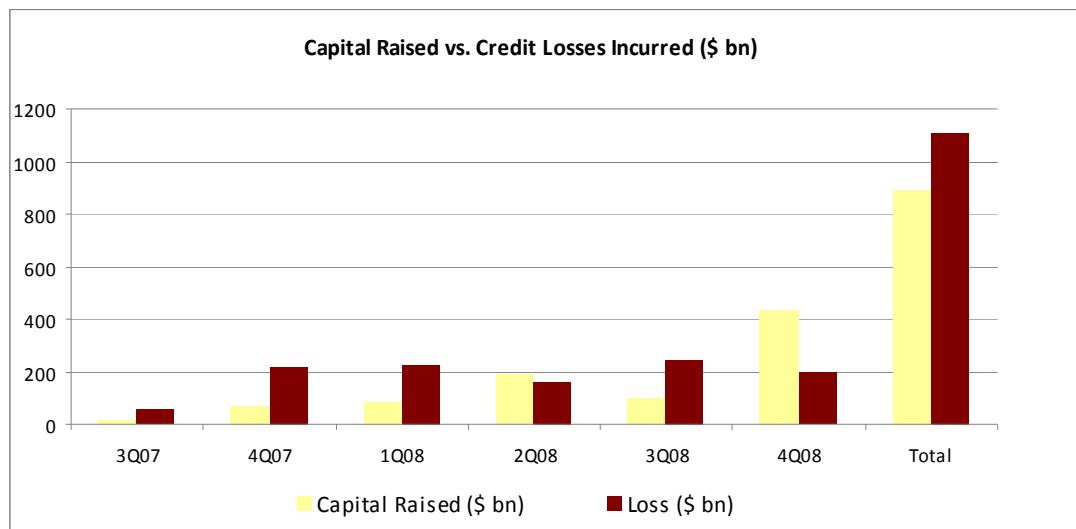


Table 2 – Capital Raised by Type of Capital (for 21 banks) from 2000 – 2008*

(\$ bn)	Geography	Name	Type of Investor			TOTAL CAPITAL RAISED
			Common	Preferred	Debt	
U.S		JP Morgan	22.1	1.6	97.1	120.8
U.S		Wells Fargo	-14.4	2.9	75.8	64.3
U.S		Lehman Brothers	0.8	6.3	102.6	109.7
U.S		Wachovia Corp.	-9.1	9.8	77.9	78.6
U.S		Citigroup	13.1	25.5	179.7	218.4
U.S		Washington Mutual	-10.9	12.3	-9.8	-8.4
U.S		Merrill Lynch	-0.5	13.1	165.9	178.6
U.S		Morgan Stanley	-15.0	3.1	159.1	147.2
U.S		Bank of America	-36.6	23.9	88.6	75.9
U.S		Goldman Sachs	-27.1	3.1	215.1	191.1
U.K		Royal Bank of Scotland	11.0	19.6	21.4	52.0
U.K		HSBC	4.7	7.1	22.8	34.6
U.K		Barclays Plc	-0.5	-0.4	24.3	23.3
U.K		HBOS	1.1	1.5	29.4	32.0
U.K		Lloyds TSB	0.9	0.0	5.1	6.0
Europe		IKB	7.3	13.6	14.5	35.4
Europe		UBS	-2.7	0.0	135.5	132.8
Europe		Credit Suisse	5.7	0.0	75.3	81.0
Europe		Deutsche Bank	2.5	3.0	68.6	74.1
Europe		Fortis Bank	23.5	0.0	93.7	117.2
Europe		BNP Paribas	0.0	0.0	0.0	0.0
		TOTAL	-24.1	145.8	1642.6	1764.4

Source: Annual statements of Banks, SEC Filings and Bloomberg

Note: 2008 numbers are for the 1st three quarters of 2008 only, 4th quarter numbers are not available yet

Figure 2 –Capital Raised, classified by Type of Capital for each Bank

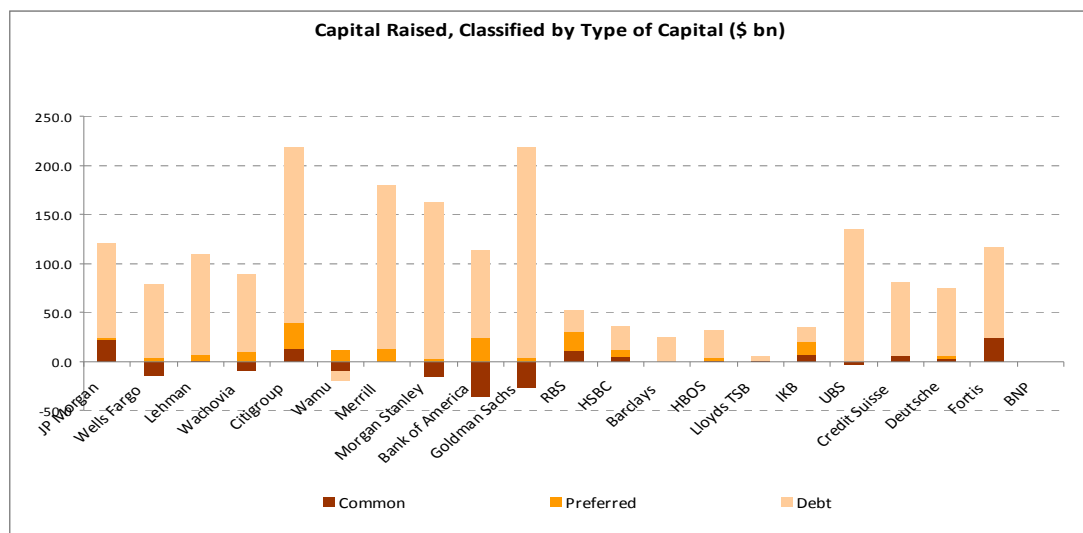


Table 3a – Annual Dividends Paid

Annual dividends paid in cash as reported in the Balance Sheet of the banks

(\$ bn)	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08*
Total Dividend Paid (Flow)	27.0	28.9	32.0	41.3	50.1	61.6	69.2	81.6	55.5
Dividend as % of Assets**	0.35%	0.32%	0.27%	0.29%	0.28%	0.30%	0.28%	0.26%	0.34%
Dividends Cumulative (Stock)	27.0	55.9	87.9	129.1	179.3	240.9	310.1	391.7	447.2

* FY08 is for the 1st three quarters of 2008 only, 4th quarter numbers are not available yet

** Calculated as Total dividends paid by all banks as % of sum of assets of all banks. Other ratios are computed in similar manner in the tables that follow

Figure 3 Dividends Paid out in Cash (Annual and Cumulative over years) vs. Common Equity (Stock)

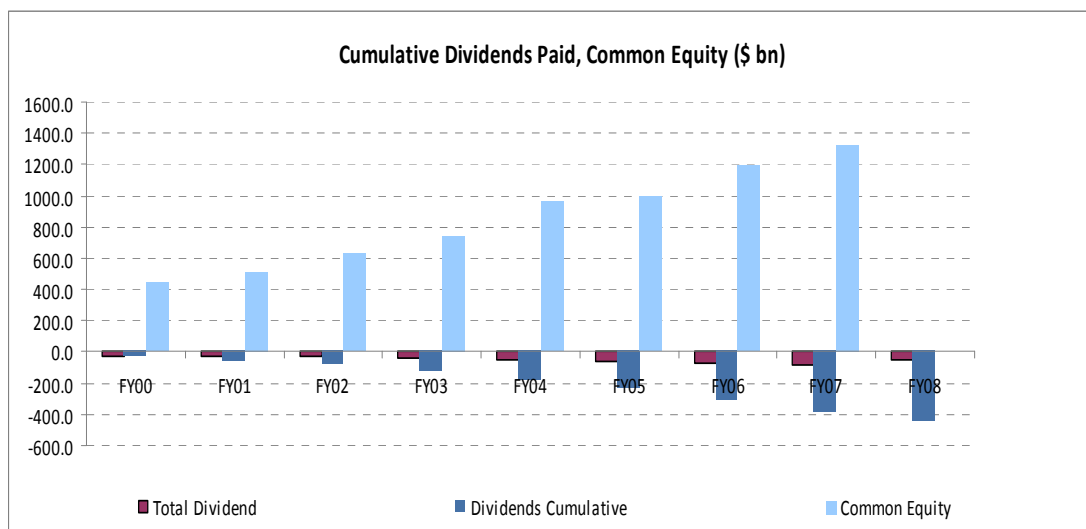


Table 3b – Quarterly / Semi Annual Dividends paid by each Bank (numbers from Balance Sheet)

U.S Banks

(\$mm)	JP Morgan	Wells Fargo	Lehman Brothers	Wachovia Corp.	Citigroup	Washington Mutual	Merrill Lynch	Morgan Stanley	Bank of America	Goldman Sachs
1Q00	530	363	73	478	622	153	113	233	833	54
2Q00	583	357	24	471	616	155	126	231	966	54
3Q00	581	450	40	469	708	156	137	230	680	55
4Q00	588	416	12	470	708	162	139	230	909	54
1Q01	631	416	30	235	740	169	143	263	901	58
2Q01	694	417	16	236	736	195	138	264	945	58
3Q01	695	449	76	237	856	205	152	266	849	58
4Q01	677	442	41	330	853	212	146	247	937	57
1Q02	684	445	58	334	848	245	149	251	926	57
2Q02	690	480	33	334	958	255	148	251	920	56
3Q02	712	477	35	361	932	261	146	250	904	58
4Q02	698	475	39	356	938	265	148	248	959	57
1Q03	696	507	40	354	1053	265	152	249	962	57
2Q03	726	504	40	391	1054	274	162	249	960	56
3Q03	714	756	46	466	1834	359	159	249	1194	118
4Q03	729	763	52	459	1792	308	161	247	1165	119
1Q04	720	765	65	525	2097	367	163	273	1159	125
2Q04	734	761	64	524	2096	372	161	275	1643	123
3Q04	1237	811	64	522	2085	381	159	274	1838	124
4Q04	1236	813	65	735	2097	390	160	274	1828	125
1Q05	1227	815	76	727	2326	402	159	301	1835	128
2Q05	1222	811	79	725	2316	408	205	295	1814	126
3Q05	1220	879	74	793	2301	420	202	293	2023	131
4Q05	1209	870	73	794	2245	479	211	291	2011	126
1Q06	1215	874	87	822	2491	499	277	290	2334	148
2Q06	1213	1818	86	815	2471	486	272	291	2286	192
3Q06	1209	3	85	888	2458	498	286	283	2538	203
4Q06	1209	946	84	1064	2406	503	271	303	2503	211
1Q07	1207	948	106	1071	2698	484	368	305	2548	212
2Q07	1197	937	105	1066	2689	492	381	303	2534	207
3Q07	1331	1034	103	1215	2699	494	375	305	2894	205
4Q07	1316	1036	104	1265	2692	475	381	306	2902	207
1Q08	1319	1024	130	1317	1759	195	538	314	3049	201
2Q08	1344	1026	204	1001	2114	81	598	312	3044	192
3Q08	1364	1128		299	2135	0	729	309	3402	194

Contd...

Non U.S Banks (Europe and UK)

(\$mm)	Royal Bank of Scotland	HSBC	Barclays Plc.	HBOS	Lloyds TSB	IKB	UBS	Credit Suisse	Deutsche Bank	Fortis Bank	BNP Paribas
1Q00						69	0				
2Q00	284	1284	784		1585		1283				
3Q00							0				
4Q00	674	917	443		747		1044	1176	650	754	1032
1Q01						62	0	0	0		
2Q01	775	1889	910	629	1688		0	0	0		
3Q01							0	71	0		
4Q01	1260	1638	550	629	815		0	0	717	1122	1082
1Q02						60	0	0	0		
2Q02	803	1844	1047	621	1886		0	0	0		
3Q02							0	149	0		
4Q02	2009	1765	657	607	931		0	0	754	1173	1246
1Q03						67	0	0	0		
2Q03	863	2625	1267	702	2111		1720	0	858		
3Q03							0	0	0		
4Q03	3261	1617	766	666	989		0	203	0	1381	1741
1Q04						80	0	0	0		
2Q04	2188	3057		1046	2394		2199	0	998		
3Q04							0	485	0		
4Q04	799	1368	2610	492	1103		0	0	0	1460	1638
1Q05						88	0	13	0		
2Q05	2421	4197		1623	2462		2531	1448	1092		
3Q05							0	2	0		
4Q05	1261	1738	3442	876	1058		0	0	0	2493	2195
1Q06						85	0	0	0		
2Q06	3275	3202		1717	2354		2584	1881	1557		
3Q06							0	0	0		
4Q06	1698	2725	4075	1025	1142		0	0	0	2014	2986
1Q07						96	0	0	0	30	
2Q07	4436	3591		2169	2610		0	2037	2703	1239	
3Q07							3563	21	0	1321	
4Q07	2356	2412	5201	1313	1284		0	0	0	114	3956
1Q08							0	29	0	18	
2Q08	5207	3825		2480	2752		0	2697	3554	2136	
3Q08							0	31	3415		

Table 4 – Common Equity at the end of each annual year (Stock)

Value of Common Equity at the end of each annual year, as derived from the Balance Sheet of the banks. It is measured as Shareholder Equity Less Preferred Equity

(\$ bn)	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07
Common Equity	446.9	511.6	627.1	738.8	964.6	991.5	1195.0	1327.9
Common Equity as % of Assets	5.9%	5.7%	5.4%	5.3%	5.4%	4.9%	4.9%	4.2%

Source: Annual statements of Banks, SEC Filings and Bloomberg

Figure 4 – Cumulative Dividends Paid (Stock) and Common Equity (Stock) (scaled by assets)

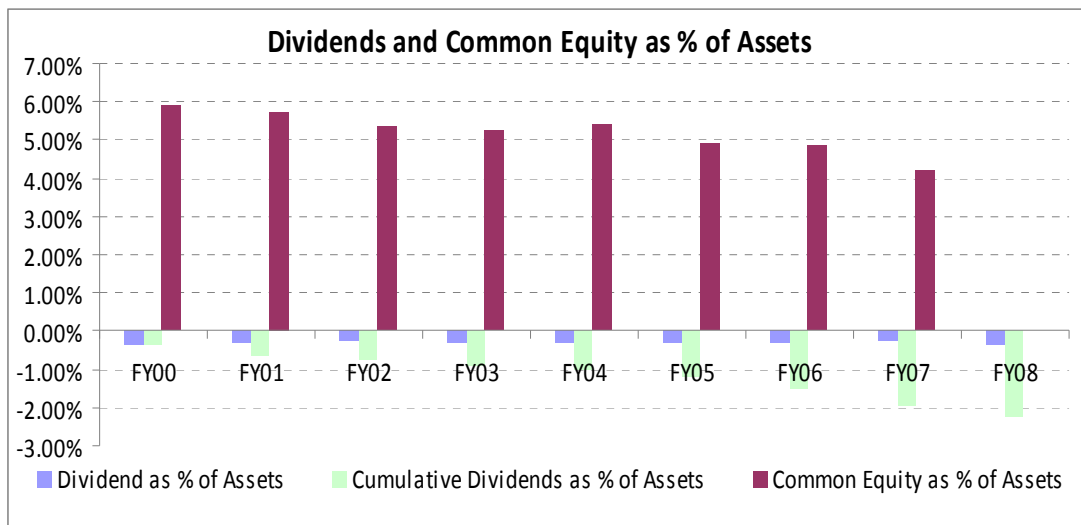


Table 5 – Net Capital Issued (Flow)

Net Capital has been defined as Capital raised by Net issuance of common stock + Net issuance of Preferred Stock + Net issuance of Long Term Debt – Dividends paid (*Source: Cash Flow Statement (Financing Activities) from Annual statements of Banks, SEC Filings and Bloomberg*).

(\$ bn)	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08*
Common	4.4	0.2	-8.5	-7.6	1.0	-16.1	-31.7	3.5	30.7
Preferred	11.1	1.2	1.2	3.9	4.3	10.8	12.0	18.8	82.5
Debt	129.4	38.9	31.1	120.8	239.3	189.8	389.8	476.4	27.2
Total Dividend (-)	27.0	28.9	32.0	41.3	50.1	61.6	69.2	81.6	55.5
Total Net Capital Raised	117.9	11.4	-8.2	75.8	194.5	122.9	300.8	417.1	85.0
Net Capital Raised As % of Assets	1.5%	0.1%	-0.1%	0.5%	1.1%	0.6%	1.2%	1.3%	0.5%

* FY08 is for the 1st three quarters of 2008 only, 4th quarter numbers are not available yet

Figure 5a

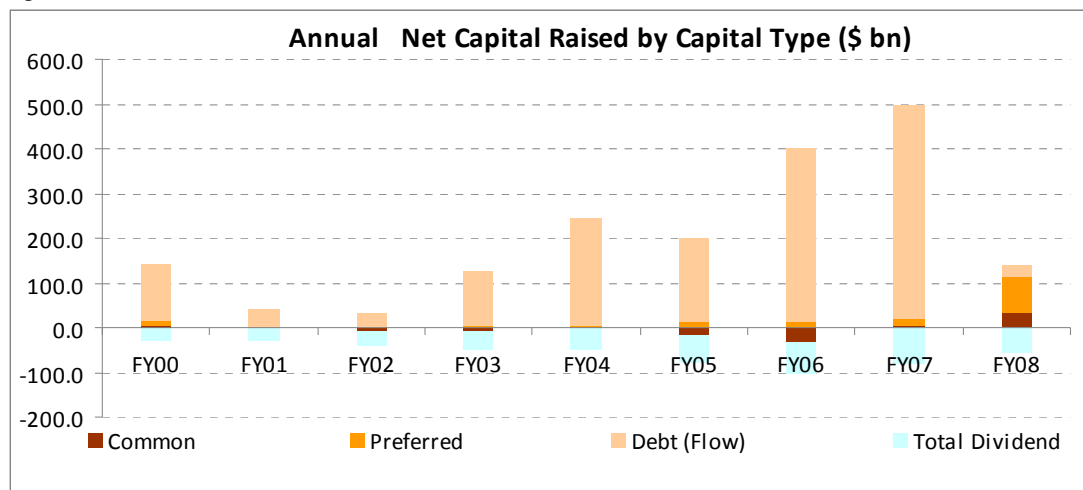


Figure 5b

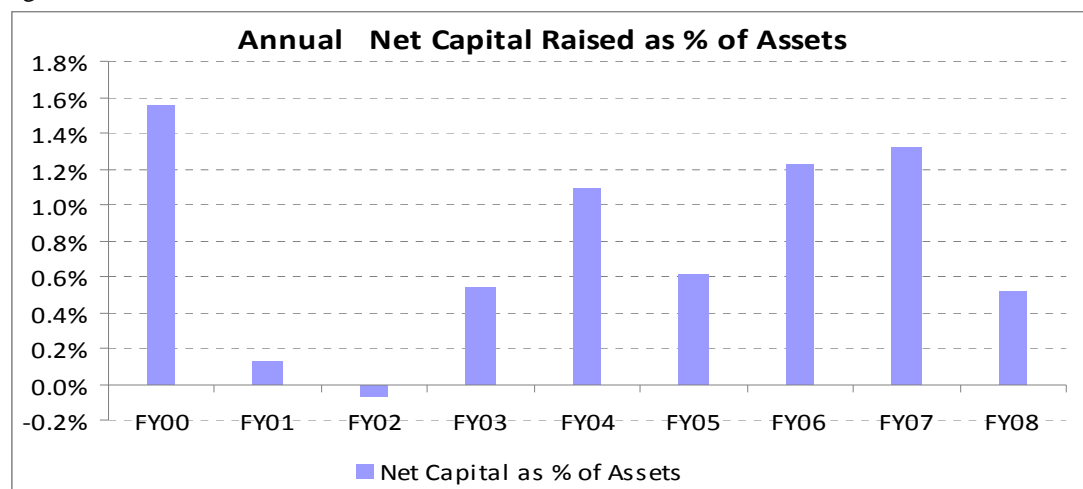


Table 6 – Leverage ratios for all banks in the data set (all numbers are from balance sheets)

Leverage Ratios	Type of Bank	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07
Total Debt* / Total Assets	Commercial	0.33	0.34	0.32	0.32	0.34	0.33	0.34	0.30
	Investment	0.53	0.53	0.53	0.52	0.52	0.56	0.56	0.57
Total Debt / Shareholder Equity	Commercial	5.13	5.34	5.69	5.78	5.77	6.11	6.29	6.51
	Investment	11.29	11.75	12.09	12.22	14.43	15.61	16.47	19.19
Total Liabilities / Total Assets	Commercial	0.99	0.99	0.93	0.92	0.92	0.92	0.92	0.95
	Investment	0.95	0.95	0.96	0.96	0.96	0.96	0.97	0.97
Total Assets/Shareholder Equity	Commercial	15.40	15.87	17.52	17.82	16.89	18.71	18.62	21.65
	Investment	21.18	22.00	22.64	23.29	27.85	28.02	29.28	33.93
Total Assets/Common Equity**	Commercial	15.81	16.22	17.82	18.12	16.95	18.85	18.86	22.07
	Investment	21.55	22.32	22.88	23.56	28.26	29.08	30.72	35.94
Deposits / Total Debt	Commercial	1.39	1.35	1.39	1.32	1.25	1.19	1.13	1.18
	Investment	0.45	0.45	0.42	0.41	0.39	0.35	0.35	0.42
Loans*** / Deposits	Commercial	0.99	0.93	0.94	0.97	0.99	1.02	1.04	1.04
	Investment	0.69	0.57	0.59	0.60	0.60	0.61	0.60	0.55
Commercial Paper / Total Assets	Commercial	0.01	0.01	0.01	0.01	0.02	0.02	0.03	0.03
	Investment	0.03	0.02	0.03	0.01	0.03	0.03	0.02	0.03

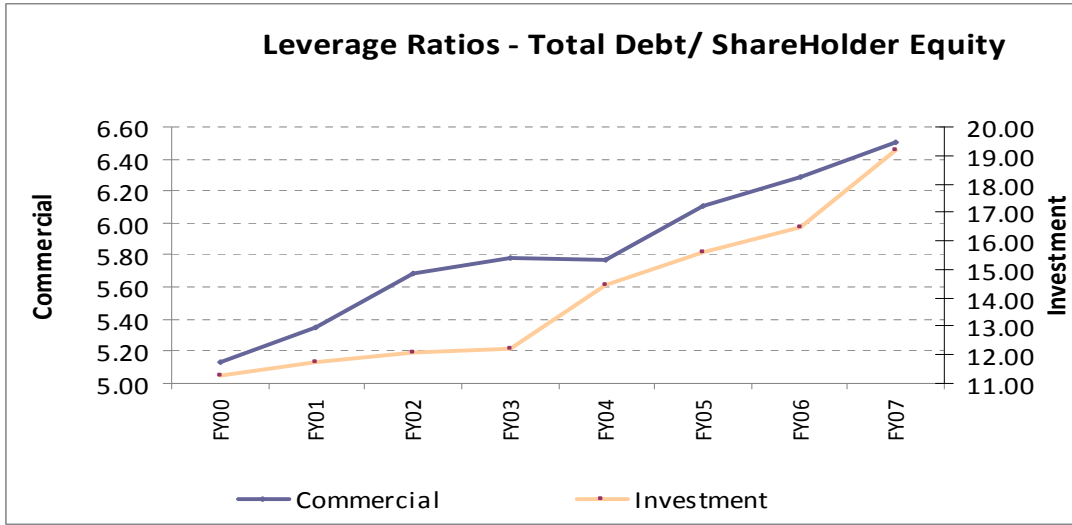
Source: Balance Sheets of all banks, from Bloomberg, SEC filings, Annual reports

* Debt = Short term borrowings + Long Term borrowings. It does not include Deposits held by a bank.

** Common Equity = Shareholder Equity – Preferred Equity as reported in Balance Sheet

*** Loans = Loans + Mortgages as reported in Balance Sheet

Figure 6a – Leverage Ratios – Total Debt/Shareholder Equity



(Debt = Short term borrowings + Long Term borrowings. It does not include Deposits held by a bank.)

Figure 6b – Leverage Ratios – Total Assets/Common Equity

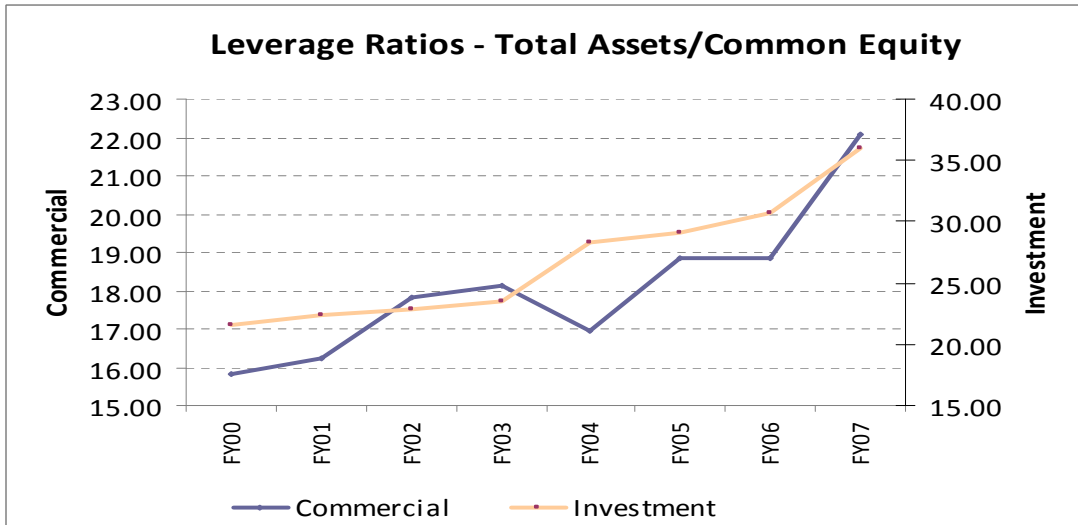


Figure 6c – Leverage Ratios – Deposits/Total Debt

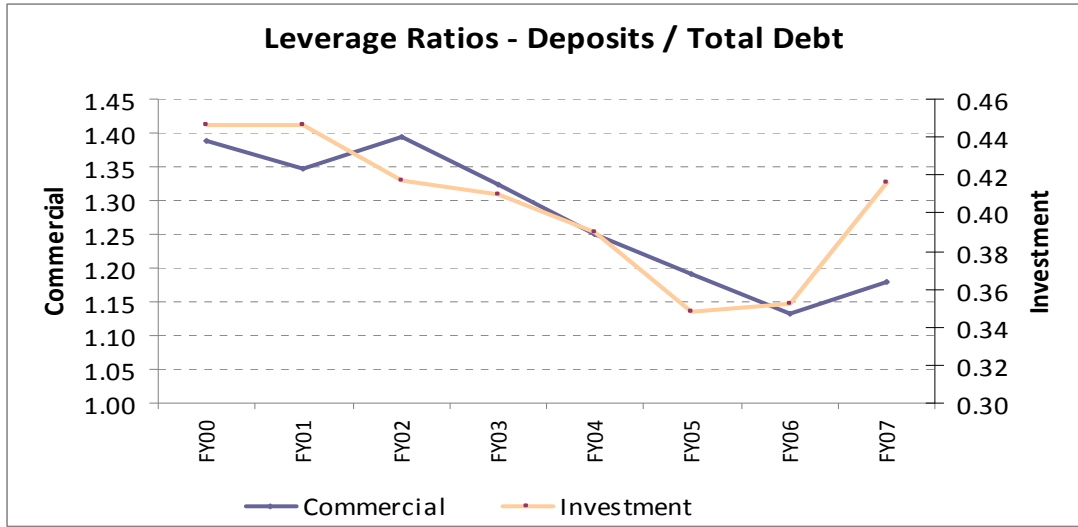


Figure 6d – Leverage Ratios – Loans/Deposits

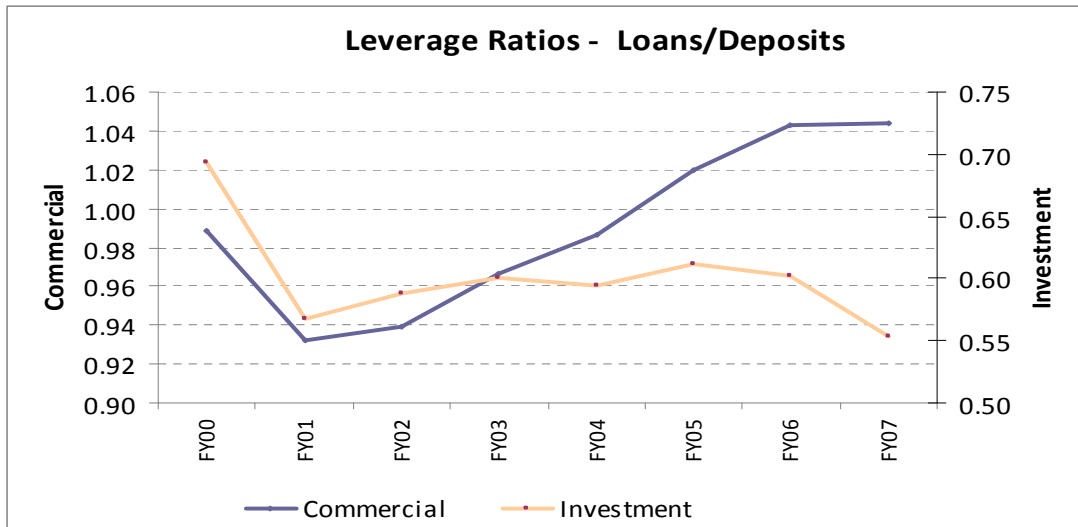


Table 7 – Commercial Paper Worldwide

Quarterly Data for Commercial Paper (\$ Bn)

Year	CP	Year	CP	Year	CP
1Q00	1449.1	1Q03	1349.9	1Q06	1710
2Q00	1517.2	2Q03	1349.8	2Q06	1776.3
3Q00	1560.2	3Q03	1321.4	3Q06	1886
4Q00	1619.3	4Q03	1284.2	4Q06	1983.1
1Q01	1523	1Q04	1323.5	1Q07	2034.7
2Q01	1504.4	2Q04	1323	2Q07	2149.6
3Q01	1457	3Q04	1341.2	3Q07	1871.8
4Q01	1437.4	4Q04	1403.9	4Q07	1780.7
1Q02	1400.2	1Q05	1436.9	1Q08	1821.5
2Q02	1372.6	2Q05	1514.6	2Q08	1741
3Q02	1360.8	3Q05	1597.3	3Q08	1623.8
4Q02	1352.3	4Q05	1662.2	4Q08	1658.8

Source: FCPOTOTS index – Bloomberg
(Commercial Paper Outstanding Seasonally Adjusted)

Figure 7 -

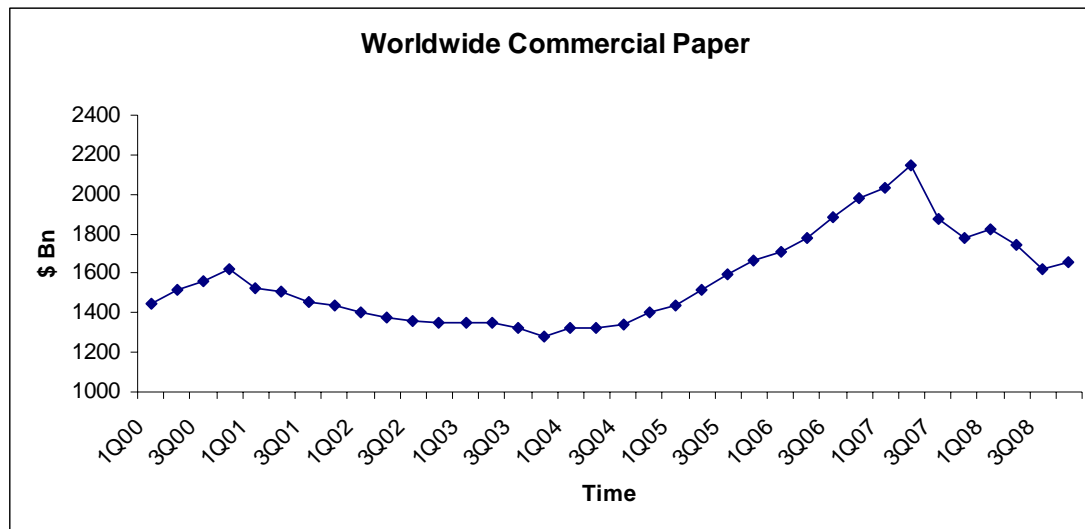


Table 8 – Commercial Paper issued by each bank as reported in Cash Flow Statement of Financial Statements (\$Bn)

Geography	Bank	Type of bank	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07
U.S	JP Morgan	Commercial	24.9	18.5	16.6	14.0	12.6	13.9	18.8	49.6
U.S	Wells Fargo	Commercial	15.8	14.0	11.1	6.7	6.2	4.0	1.1	30.4
U.S	Lehman Brothers	Investment	4.2	1.9	1.6	1.6	1.7	1.8	1.7	3.1
U.S	Wachovia Corp.	Commercial	2.9	2.9	3.1	7.2	12.0	3.9	4.7	6.7
U.S	Citigroup	Commercial	18.7	13.9	18.3	17.6	25.6	34.2	43.7	37.3
U.S	Washington Mutual	Commercial	1.0	0.4	0.7	1.1	4.0	7.1	4.8	2.0
U.S	Merrill Lynch	Investment	13.0	1.9	3.4	3.4	4.0	3.9	6.4	12.9
U.S	Morgan Stanley	Investment	27.8	32.8	50.8	28.4	28.5	23.2	22.4	22.6
U.S	Bank of America	Commercial	7.0	1.6	25.2	42.5	78.6	116.3	141.3	191.1
U.S	Goldman Sachs	Investment	10.7	8.4	9.5	4.8	4.4	5.2	1.5	4.3
U.K	Royal Bank of Scotland	Commercial	1.0	0.4	11.2	6.3	16.1	25.1	24.8	155.9
U.K	HSBC	Commercial								
U.K	Barclays Plc.	Commercial		4.8	8.4	7.9	40.1	50.4	51.9	46.5
U.K	HBOS	Commercial	2.0	11.2	15.0	23.0			33.9	33.5
U.K	Lloyds TSB	Commercial	-*	-	-	-	15.4	18.6	25.6	34.5
Europe	IKB	Commercial	-	-	-	-				
Europe	UBS	Investment	-	-	-	-	69.7	77.8	98.0	133.6
Europe	Credit Suisse	Commercial	-	-	-	-		7.9	12.3	13.0
Europe	Deutsche Bank	Commercial	-	-	-	16.5	13.5	15.9	43.0	42.7
Europe	Fortis Bank	Commercial	-	-	-	-	60.4	78.5	100.4	109.2
Europe	BNP Paribas	Commercial	-	-	-	-				
Total			128.8	112.5	174.7	181.0	392.9	487.3	636.2	928.9

Source: Bloomberg, SEC filings, Annual reports

Note: Commercial paper information could not be found for HSBC, 2004 and 2005 numbers for HBOS, 2000 numbers for Barclays, 2000-2003 for Lloyds PLV, UBS, Credit Suisse, Deutsche Bank and Fortis, IKB and BNP in financial statements available on Bloomberg or SEC filings

* Data is unavailable for this year

Figure 8

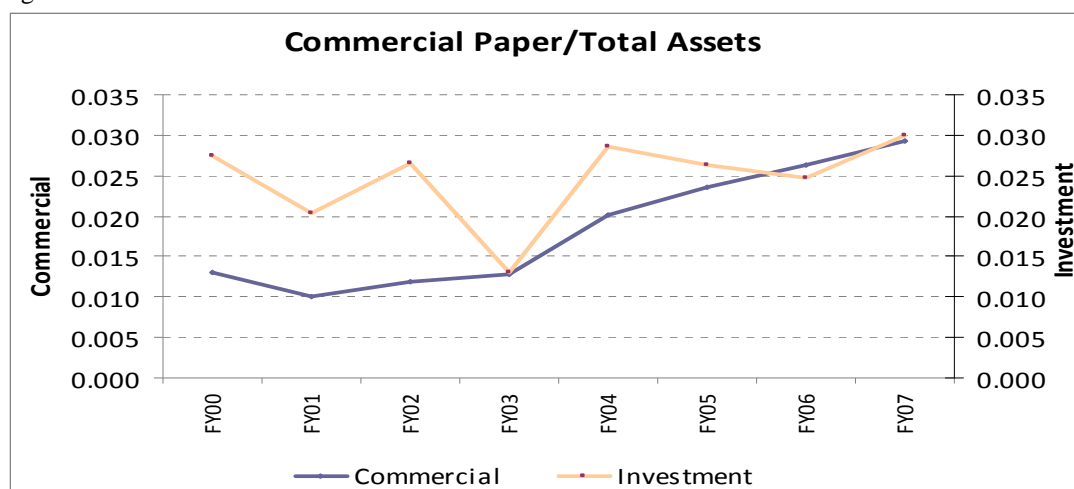


Table 9 - Northern Rock data (£ mm)

Date	Equity	Shareholder equity	Common Equity	Total Liabilities	Leverage on total equity	Leverage on shareholder equity	Leverage on common equity
30-Jun-98	762.40	762.40	762.40	17,401	22.82	22.82	22.82
31-Dec-98	800.30	800.30	800.30	18,215	22.76	22.76	22.76
30-Jun-99	856.10	856.10	856.10	19,274	22.51	22.51	22.51
31-Dec-99	883.50	883.50	883.50	20,691	23.42	23.42	23.42
30-Jun-00	864.70	864.70	864.70	23,126	26.74	26.74	26.74
31-Dec-00	915.50	915.50	915.50	24,850	27.14	27.14	27.14
30-Jun-01	1009.30	1009.30	1009.30	28,034	27.78	27.78	27.78
31-Dec-01	1063.30	1063.30	1063.30	31,116	29.26	29.26	29.26
30-Jun-02	1143.10	1143.10	1143.10	36,015	31.51	31.51	31.51
31-Dec-02	1209.60	1209.60	1209.60	41,920	34.66	34.66	34.66
30-Jun-03	1270.80	1270.80	1270.80	48,454	38.13	38.13	38.13
31-Dec-03	1321.80	1321.80	1321.80	51,949	39.30	39.30	39.30
30-Jun-04	1406.70	1406.70	1406.70	57,092	40.59	40.59	40.59
31-Dec-04	1537.60	1537.60	1537.60	64,881	42.20	42.20	42.20
30-Jun-05	2552.30	1516.50	1516.50	72,460	28.39	47.78	47.78
31-Dec-05	2611.40	1575.60	1575.60	82,709	31.67	52.49	52.49
30-Jun-06	3079.80	2044.00	1647.60	88,821	28.84	43.45	53.91
31-Dec-06	3210.60	2174.80	1778.40	101,011	31.46	46.45	56.80
30-Jun-07	3382.10	2346.30	1949.90	113,506	33.56	48.38	58.21
31-Dec-07	2699.30	1663.50	1267.10	109321.00	40.50	65.72	86.28

Figure 9 (Source: Shin (2009))

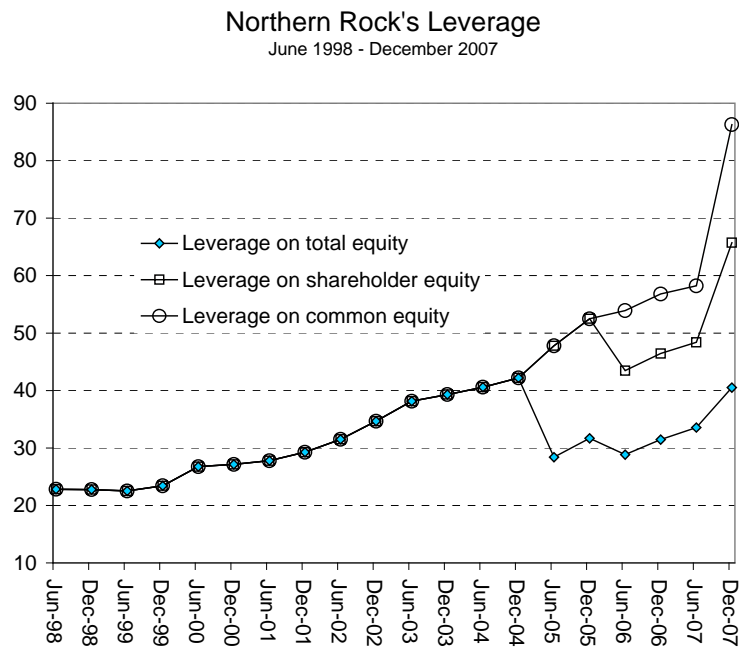
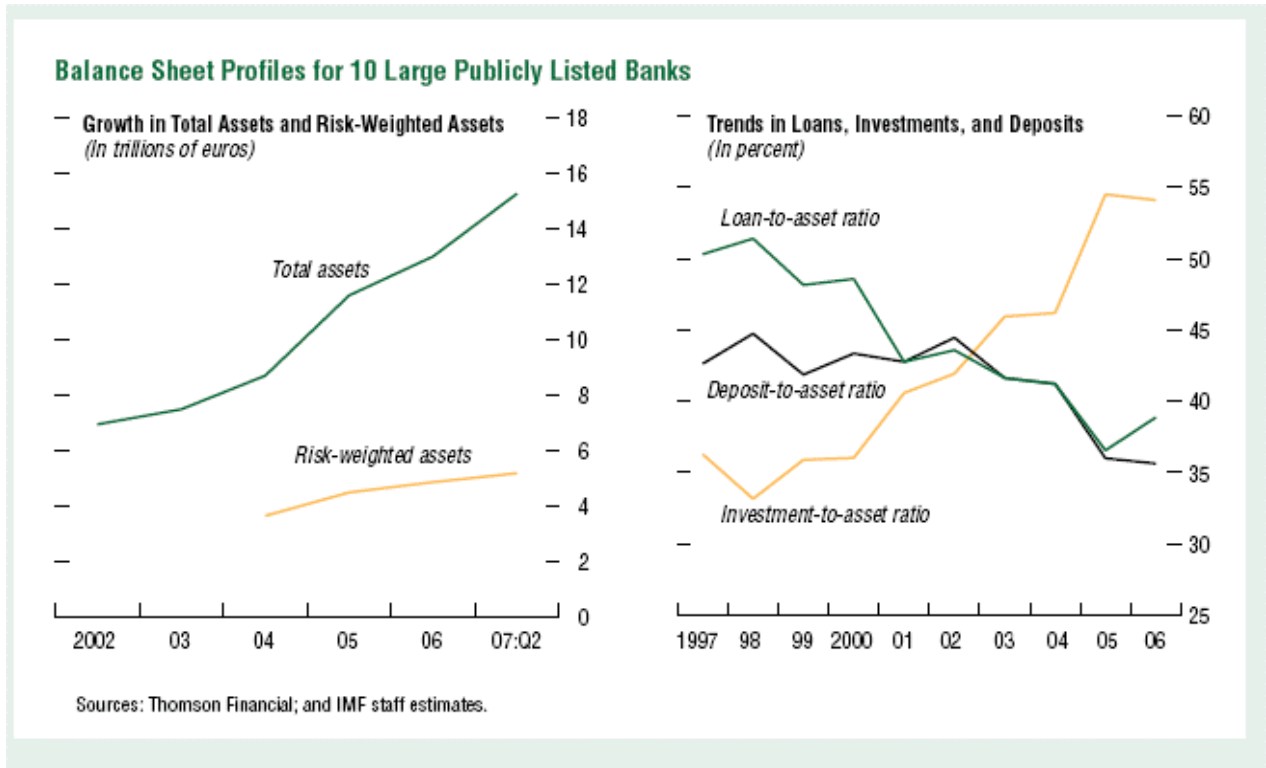


Figure 10 - Trends in asset growth, regulatory risk, leverage and investment ratios for 10 large publicly listed banks

Source: Box 1.3 of IMF, 2008



APPENDIX A. Variable Definitions

Main Variables		Source
Credit Losses & Writedowns	Writedowns include those that directly reduce income, as well as value reductions that only decrease equity and are excluded by the banks from their earnings figures. The values are net of financial hedges the companies use to mitigate losses.	Bloomberg , WDCI function
Capital Raised (WDCI)	Capital infused by all banks, brokers, insurance companies and GSEs by different means.	Bloomberg , WDCI function
Capital Raised	Inlcudes net capital raised by long term borrowings, net common equity issuance and net preferred shares issued	Bloomberg, SEC, annual reports
Net Capital	Inlcudes net capital raised by long term borrowings, net common equity issuance and net preferred shares issued, less dividends	Bloomberg, SEC, annual reports
Dividend	Dividends paid in cash by Banks	Bloomberg, SEC, annual reports
Common Equity	Common Equity was calculated by subtracting Preferred Equity from Total ShareHolders Equity. Both Preferred and ShareHolders Equity numbers were taken from the Balance Sheet	Bloomberg, SEC, annual reports
Profit & Loss	Profit & Loss of the bank as reported on the Income Statement	Bloomberg, SEC, annual reports
Assets	Total Assets of the bank as reported on the Balance Sheet	Bloomberg, SEC, annual reports
Liabilities	Total Liabilities of the bank as reported on the Balance Sheet	Bloomberg, SEC, annual reports
Total Debt (Leverage ratios)	Short Term Borrowings + Long Term borrowings as reported on the Balance Sheet. This does not include deposits held by banks	Bloomberg, SEC, annual reports
Loans	Loans + Mortgages as reported on the Balance Sheet	Bloomberg, SEC, annual reports

Appendix B. Frequency of data

Banks	Frequency	No. of Years
US Banks	Quarterly and Annual information	2000 onwards
European Banks	Quarterly/Semi Annual and Annual information	2000 onwards
UK Banks	Semi Annual and Annual information	2000 onwards

Appendix C – Capital Issuance – detailed data from Bloomberg (WDCI) from 3Q 2007 to 1Q 2009

Bank Name	Total Raised	Date	Currency	Amt. in Bn	Investor /Buyer	Investor Type	Capital Type	Security Type/Asset Sold	Amt. in USD Bn	Qtr	Type of Bank	Bank Region
JP Morgan	44.7	28-Oct-08	USD	25	U.S. Treasury	Govt.	Preferred	Preferred stock	25.0	4Q08	Commercial	U.S
		26-Sep-08	USD	10	Public investors	Public	Common	Common stock at \$40.50 a share	10.0	3Q08	Commercial	U.S
		14-Aug-08	USD	1.8	Public investors	Public	Preferred	8.625% Perpetual securities	1.8	3Q08	Commercial	U.S
		29-Jun-08	USD	0.07	Migdal Insurance	Private	Other	50% stake the capital markets unit of Migdal Insurance Holding Ltd	0.1	2Q08	Commercial	U.S
		05-Jul-08	USD	1.815	Public Investors	Public	Debt	8.0% 40-Year fixed-to-floating rate capital securities	1.8	3Q08	Commercial	U.S
		17-Apr-08	USD	6	Institutional Investors	Private	Preferred	8.125% Perpetual preferred stock	6.0	2Q08	Commercial	U.S
Wells Fargo	41.8	06-Nov-08	USD	11.00	Public Investors	Public	Common	Common shares at \$27/share	11.0	4Q08	Commercial	U.S
		29-Oct-08	USD	25	U.S. Treasury	Govt.	Preferred	Preferred stock and warrants	25.0	4Q08	Commercial	U.S
		03-Sep-08	USD	1.75	Public Investors	Public	Debt	9.75% Perpetual hybrid bonds	1.8	3Q08	Commercial	U.S
		12-May-08	USD	2.5	Public Investors	Public	Debt	7.7% Fixed-to-float perpetual securities	2.5	2Q08	Commercial	U.S
		05-Mar-08	USD	1.55	Public Investors	Public	Preferred	7.875% 60-Year trust preferred securities	1.6	1Q08	Commercial	U.S
Lehman Brothers	13.9	06-Sep-08	USD	4	Public Investors	Public	Common	Common stock at \$28 a share	4.0	3Q08	Investment	U.S
		06-Sep-08	USD	2	Public Investors	Public	Preferred	8.75% Non-cumulative mandatory convertible preferred stock	2.0	3Q08	Investment	U.S
		05-Feb-08	USD	2	Public Investors	Public	Debt	7.5% Subordinated 30-year bonds	2.0	1Q08	Investment	U.S
		04-Jan-08	USD	4	Public Investors	Public	Preferred	7.25% Convertible preferred stock, 32% conversion premium	4.0	1Q08	Investment	U.S
		02-Feb-08	USD	1.897	5	Public Investors	Public	Preferred	7.95% Perpetual preferred shares	1.9	1Q08	Investment
IKB	10.7	13-Feb-08	EUR	2.3	German Govt, German Banks, KfW Group	Govt.	Other	Details not known	2.9	1Q08	Commercial	Europe
		27-Nov-07	EUR	0.35	German Banking Associations	SWF	Other	Details not known	0.4	4Q07	Commercial	Europe
		27-Nov-07	EUR	2.3	KfW Group	Private	Other	Details not known	2.9	4Q07	Commercial	Europe
		02-Aug-07	EUR	1	German Banking Associations	Private	Other	Details not known	1.3	3Q07	Commercial	Europe
		02-Aug-07	EUR	2.5	KfW Group	SWF	Other	Details not known	3.2	3Q07	Commercial	Europe
Royal Bank of Scotland	49.6	19-Jan-09	GBP	5	HMT/Current shareholders	Private	Common	Ordinary shares at 31.75p/share	7.4	1Q09	Commercial	U.K
		13-Jan-09	GBP	0.74	Public investors	Public	Other	10.8bn shares of Bank of China Ltd	1.1	1Q09	Commercial	U.K

		13-Oct-08	GBP	15	Public investors	Public	Common	Common shares at 65.5 pence each	22.2	4Q08	Commercial	U.K
		28-Jul-08	GBP	0.5	Tesco Plc	Private	Other	50% stake in Tesco Personal Finance Group Limit	0.7	3Q08	Commercial	U.K
		22-Apr-08	GBP	12.3	Public Investors	Public	Other	Rights offering (11 shares for 18)	18.2	2Q08	Commercial	U.K
Wachovia Corp.	11.0	14-Apr-08	USD	4.025	Public Investors	Public	Common	Common stock at \$24 a share	4.0	2Q08	Commercial	U.S
		14-Apr-08	USD	3.5	Public Investors	Public	Preferred	7.5% Preferred convertible stock	3.5	2Q08	Commercial	U.S
		02-Jun-08	USD	3.5	80 Domestic Investors (Unidentified)	Private	Preferred	7.98% preferred stock, private placement	3.5	2Q08	Commercial	U.S
Citigroup	136.5	16-Jan-09	USD	10	FDIC	Govt.	Other	capital benefit from asset guarantee	10.0	1Q09	Commercial	U.S
		16-Jan-09	USD	5	U.S. Treasury	Govt.	Other	capital benefit from asset guarantee	5.0	1Q09	Commercial	U.S
		31-Dec-08	USD	20	U.S. Treasury	Govt.	Preferred	Preferred shares	20.0	4Q08	Commercial	U.S
		16-Dec-08	JPY	25	Mitsubishi UFJ Financial Group	Private	Other	Sale in NikkoCiti Trust and Banking corp.	27.6	4Q08	Commercial	U.S
		28-Oct-08	USD	25	U.S. Treasury	Govt.	Preferred	Preferred shares and warrants	25.0	4Q08	Commercial	U.S
		11-Jul-08	USD	4	Credit Mutual Group	Private	Other	German consumer unit (after-tax profit from the asset's sale)	4.0	3Q08	Commercial	U.S
		12-May-08	EUR	0.578	ING Group	Private	Other	CitiStreet (exact profit from the asset's sale not given)	0.7	2Q08	Commercial	U.S
		05-Jun-08	USD	2	Public Investors	Public	Preferred	8.5% Perpetual preferred stock	2.0	2Q08	Commercial	U.S
		29-Apr-08	USD	4.9	Public Investors	Public	Common	Common stock at \$25.27 a share	4.9	2Q08	Commercial	U.S
		21-Apr-08	USD	6	Public Investors	Public	Preferred	8.4% Perpetual preferred stock	6.0	2Q08	Commercial	U.S
		14-Apr-08	USD	0.165	Discover Financial	Private	Other	Diners Club	0.2	2Q08	Commercial	U.S
		15-Jan-08	USD	6.88	Govt. of Singapore Investment Authority	SWF	Preferred	7.0% Convertible preferred stock	6.9	1Q08	Commercial	U.S
		15-Jan-08	USD	5.62	Kuwait Investment Authority	Govt.	Preferred	7.0% Convertible preferred stock	5.6	1Q08	Commercial	U.S
		15-Jan-08	USD	3.187	Public Investors	Public	Preferred	6.5% Convertible preferred stock, 35% conversion premium	3.2	1Q08	Commercial	U.S
		15-Jan-08	USD	3.715	Public Investors	Public	Preferred	8.125% preferred stock	3.7	1Q08	Commercial	U.S
		21-Dec-07	USD	3.5	Public Investors	Public	Preferred	8.3% enhance E trust preferred securities	3.5	4Q07	Commercial	U.S
		27-Nov-07	USD	0.7875	Public Investors	Public	Preferred	7.875% enhance E trust preferred securities	0.8	4Q07	Commercial	U.S
		27-Nov-07	USD	7.5	Abu Dhabi Investment Authority	SWF	Debt	11% Equity units convertible to common stock	7.5	4Q07	Commercial	U.S
Washington Mutual	12.1	31-Mar-08	USD	2	TPG Inc.	Private	Preferred	Common shares & preferred stock	2.0	1Q08	Commercial	U.S
		31-Mar-08	USD	6.05	Institutional Investors	Private	Preferred	Common shares & preferred stock	6.1	1Q08	Commercial	U.S

		12-Nov-07	USD	3	Public Investors	Public	Preferred	7.75% Perpetual convertible preferred shares	3.0	4Q07	Commercial	U.S
		18-Oct-07	USD	1	Public Investors	Public	Preferred	9.75% Perpetual preferred hybrid bonds	1.0	4Q07	Commercial	U.S
Merrill Lynch	29.9	28-Jul-08	USD	6.4	Public Investors	Public	Common	Common stock at \$22.50 a share	6.4	3Q08	Investment	U.S
		28-Jul-08	USD	0.9	Temasek Holdings	SWF	Common	Common stock at \$22.50 a share	0.9	3Q08	Investment	U.S
		17-Jul-08	USD	4.425	Bloomberg LP	Private	Other	20% stake in Bloomberg (pre-tax profit from the asset's sale)	4.4	3Q08	Investment	U.S
		05-Jul-08	USD	1.75	Public Investor	Public	Debt	Unsecured subordinated 30-year bonds	1.8	3Q08	Investment	U.S
		22-Apr-08	USD	2.55	Public Investors	Public	Preferred	8.625% Perpetual preferred stock	2.6	2Q08	Investment	U.S
		24-Feb-08	USD	0.6	Temasek Holdings Pte.	SWF	Common	Common stock at \$48 per share	0.6	1Q08	Investment	U.S
		15-Jan-08	USD	6.6	Korea Invest, Kuwait Investment Authority	SWF	Preferred	9% preferred stock	6.6	1Q08	Investment	U.S
		31-Dec-07	USD	0.316	Aegon N.V	Private	Other	Merrill Lynch Life Insurance Company and ML Life Insurance Company of New York (after-tax profit from asset's sale)	0.3	4Q07	Investment	U.S
		24-Dec-07	USD	4.4	Temasek Holdings Pte.	SWF	Common	Common stock at 14% discount	4.4	4Q07	Investment	U.S
		24-Dec-07	USD	1.2	Davis Selected Advisors LP	Private	Common	Common stock at \$48 per share	1.2	4Q07	Investment	U.S
		13-Aug-07	USD	0.75	Public Investor	Public	Preferred	7.375% preferred stock	0.8	3Q07	Investment	U.S
Morgan Stanley	24.6	26-Oct-08	USD	10	U.S. Treasury	Govt.	Preferred	Preferred stock	10.0	4Q08	Investment	U.S
		14-Oct-08	USD	1.2	Mitsubishi UFJ Financial Group	Private	Preferred	10% Non-convertible preferred shares	1.2	4Q08	Investment	U.S
		14-Oct-08	USD	7.8	Mitsubishi UFJ Financial Group	Private	Preferred	Preferred shares convertible at \$25.25 a share	7.8	4Q08	Investment	U.S
		19-Dec-07	USD	5.579	China Investment Corp.	SWF	Debt	9.0% Units convertible to common stock in Aug. 2010	5.6	4Q07	Investment	U.S
UBS	31.2	31-Dec-08	USD	0.4	Public investor	Public	Other	3.4 billion H-Shares	0.4	4Q08	Investment	Europe
		16-Oct-08	CHF	6	Switzerland Govt	Govt.	Debt	12.5% mandatory convertible notes	5.0	4Q08	Investment	Europe
		13-Jun-08	CHF	15.97	Public Investors	Public	Common	Common stock at 21 francs a share	13.4	2Q08	Investment	Europe
		24-May-08	USD	0.156	Shareholders	Public	Other	24.9% stake in Adam Street Partners LLC (exact profit from asset sales not given)	0.2	2Q08	Investment	Europe
		04-Mar-08	EUR	1	Public Investors	Public	Debt	8.836% Perpetual fix-to-float bonds	1.3	1Q08	Investment	Europe

		12-Oct-07	CHF	11	Govt. of Singapore Investment Corp.	SWF	Debt	9.0% 2-Year bonds convertible to stock	9.2	4Q07	Investment	Europe
		12-Oct-07	CHF	2	Unidentified Mideast investor	Private	Debt	9.0% 2-Year bonds convertible to stock	1.7	4Q07	Investment	Europe
HSBC	4.9	03-Sep-08	GBP	0.65	Public investors	Public	Debt	6.75% subordinated 20-yr bonds	1.0	3Q08	Commercial	U.K
		17-Jun-08	USD	0.439	Global Payments Inc.	Private	Other	51% stake in HSBC Merchant Services (exact profit from asset's sale not given)	0.4	2Q08	Commercial	U.K
		19-May-08	USD	1.5	Public Investors	Public	Debt	6.8% Subordinated 30-year bonds	1.5	2Q08	Commercial	U.K
		02-Apr-08	USD	2	Public Investors	Public	Debt	8.125% Perpetual capital securities	2.0	2Q08	Commercial	U.S
Bank of America	78.5	16-Jan-09	USD	20	U.S. Treasury	Govt.	Preferred	Preferred shares and warrants	20.0	1Q09	Commercial	U.S
		09-Jan-09	USD	10	U.S. Treasury	Govt.	Preferred	Preferred shares and warrants	10.0	1Q09	Commercial	U.S
		07-Jan-09	USD	2.8	Public Investors	Public	Other	13% stake in China Construction Bank	2.8	1Q09	Commercial	U.S
		26-Oct-08	USD	15	U.S. Treasury	Govt.	Preferred	Preferred shares and warrants	15.0	4Q08	Commercial	U.S
		10-Jul-08	USD	10	Public Investors	Public	Common	Common stock at \$22 each	10.0	3Q08	Commercial	U.S
		20-May-08	USD	2.7	Public Investors	Public	Preferred	8.2% Perpetual preferred shares	2.7	2Q08	Commercial	U.S
		24-Apr-08	USD	4	Public Investors	Public	Preferred	8.125% Perpetual hybrid bonds	4.0	2Q08	Commercial	U.S
		24-Jan-08	USD	13	Public Investors	Public	Preferred	8.0% and 7.25% Preferred stock and convertibl	13.0	1Q08	Commercial	U.S
		14-Nov-07	USD	1.035	Public Investors	Public	Preferred	7.25% Perpetual preferred shares	1.0	4Q07	Commercial	U.S
Barclays Plc.	27.3	19-Nov-08	GBP	0.5	Public Investors	Public	Preferred	14% preferred shares and warrants convertible at 197.775p per share	0.7	4Q08	Commercial	U.K
		31-Oct-08	GBP	4.3	Qatar Holding, Challenger Univeresal and HH Sheikh	Private	Preferred	Mandatory convertible notes (9.75% until conversion at 153.6276p on 30/06/09)	6.4	4Q08	Commercial	U.K
		31-Oct-08	GBP	2.5	Qatar Holding	Private	Preferred	14% preferred shares and warrants convertible at 197.775p per share	3.7	4Q08	Commercial	U.K
		18-Sep-08	GBP	0.701	Public investors	Public	Common	Common shares at 301p per share	1.0	3Q08	Commercial	U.K
		05-Aug-08	GBP	0.33	Swiss Reinsurance Co.	Private	Other	U.K. life-insurance unit (after-tax profit from asset's sale)	0.5	3Q08	Commercial	U.K
		25-Jun-08	GBP	0.5	Sumitomo Mitsui Financial	Private	Common	Common stock at 296 pence a share	0.7	2Q08	Commercial	U.K

					Group Inc.							
		25-Jun-08	GBP	0.753	Public investors	Public	Common	Common stock at 282 pence a share	1.1	2Q08	Commercial	U.K
		25-Jun-08	GBP	3.247	Challenger, a company representing Qatar's royal family, Qatar Investment Authority, Temasek Holdings China Development	SWF	Common	Common stock at 282 pence a share	4.8	2Q08	Commercial	U.K
		18-Apr-08	USD	2	Public investors	Public	Debt	7.7% perpetual securities	2.0	2Q08	Commercial	U.K
		08-Apr-08	USD	2.65	Public investors	Public	Debt	8.125% perpetual securities	2.7	2Q08	Commercial	U.K
		25-Jul-07	GBP	1	Temasek Holdings Pte	SWF	Common	Common stock at 740 pence a share	1.5	3Q07	Commercial	U.K
		25-Jul-07	GBP	1.5	China Development Bank	SWF	Common	Common stock at 740 pence a share	2.2	3Q07	Commercial	U.K
Credit Suisse	11.4	16-Oct-08	CHF	10	Public investors	Public	Debt	Treasury shares & bonds	8.4	4Q08	Commercial	Europe
		21-Aug-08	USD	0.3	Public investors	Public	Debt	8.25% Perpetual non-cumulative bonds	0.3	3Q08	Commercial	Europe
		13-Jun-08	USD	1.2	Public investors	Public	Debt	8.25% Perpetual non-cumulative bonds	1.2	2Q08	Commercial	Europe
		25-Mar-08	USD	1.525	Public investors	Public	Debt	7.90% Perpetual capital securities	1.5	1Q08	Commercial	Europe
Deutsche Bank	5.8	22-Sep-08	EUR	2	Institutional investors	Private	Common	Common shares at 55 euros each	2.5	3Q08	Commercial	Europe
		01-May-08	USD	1.265	Public Investors	Public	Preferred	8.05% Perpetual preferred trust securities (cumulative with option of being non-cumulative)	1.3	2Q08	Commercial	Europe
		12-Feb-08	USD	1.975	Public Investors	Public	Preferred	7.6% Perpetual preferred stock	2.0	1Q08	Commercial	Europe
Goldman Sachs	20.5	14-Oct-08	USD	10	U.S. Treasury	Govt.	Preferred	Preferred stock	10.0	4Q08	Investment	U.S
		24-Sep-08	USD	5	Public investors	Public	Common	Common stock at \$123 a share	5.0	3Q08	Investment	U.S
		24-Sep-08	USD	5	Berkshire Hathaway Inc.	Private	Preferred	10% Perpetual preferred stock	5.0	3Q08	Investment	U.S
		01-Oct-08	GBP	0.325	Public Investors	Public	Debt	6.875% Subordinated bonds	0.5	4Q08	Investment	U.S
Fortis Bank	20.4	29-Sep-08	EUR	2.5	Luxembourg Government	Govt.	Debt	Loan convertible into 49% stake in Luxembourg banking division	3.2	3Q08	Commercial	Europe
		29-Sep-08	EUR	4.7	Belgium Government	Govt.	Other	49% stake in Belgian banking unit	6.0	3Q08	Commercial	Europe
		29-Sep-08	EUR	4	Netherlands Government	Govt.	Other	Stake in Dutch business	5.1	3Q08	Commercial	Europe

		02-Jul-08	EUR	0.709	Deutsche Bank	Govt.	Other	Commercial lending units in Netherlands (exact profit from asset sale not given)	0.9	3Q08	Commercial	Europe
		26-Jun-08	EUR	1.5	Public Investors	Public	Common	Common stock at 10 euros a share	1.9	2Q08	Commercial	Europe
		26-Jun-08	EUR	2	Public Investors	Public	Preferred	Preferred stock - no other details given in initial announcement	2.5	2Q08	Commercial	Europe
		23-May-08	EUR	0.625	Public Investors	Public	Debt	8% subordinated bonds	0.8	2Q08	Commercial	Europe
HBOS	22.9	13-Oct-08	GBP	3	Public Investors	Public	Preferred	Preference shares (12% for first five years and 3month Libor +700bps thereafter)	4.4	4Q08	Commercial	U.K
		13-Oct-08	GBP	8.5	Public Investors	Public	Common	Common shares at 113.6 pence each	12.6	4Q08	Commercial	U.K
		21-Jul-08	GBP	2.48	Morgan Stanley, Dresdner Kleinwort Ltd., and o	Private	Common	Common stock, two new shares for every five at 275pence per share	3.7	3Q08	Commercial	U.K
		21-Jul-08	GBP	1.52	Public Investors	Public	Common	Common stock, two new shares for every five at 275pence per share	2.2	3Q08	Commercial	U.K
Lloyds TSB	13.0	17-Oct-08	GBP	0.4	Public investors	Public	Debt	10-year Bonds	0.6	4Q08	Commercial	U.K
		13-Oct-08	GBP	4.5	Public investors	Public	Common	Common shares at 173.3 pence each	6.7	4Q08	Commercial	U.K
		13-Oct-08	GBP	1	Public investors	Public	Preferred	12% Preference shares	1.5	4Q08	Commercial	U.K
		29-May-08	GBP	0.75	Public investors	Public	Debt	Variable subordinated callable bonds	1.1	2Q08	Commercial	U.K
		15-May-08	EUR	0.5	Public investors	Public	Debt	7.875% Perpetual bonds	0.6	2Q08	Commercial	U.K
		15-May-08	USD	1.25	Public investors	Public	Debt	7.875 Perpetual bonds	1.3	2Q08	Commercial	U.K
		26-Feb-08	EUR	1	Public Investors	Public	Debt	Variable subordinated bonds	1.3	1Q08	Commercial	U.K
BNP Paribas	3.2	18-Aug-08	EUR	2.55	French Govt	Govt.	Debt	Subordinated Bonds	3.2	3Q08	Commercial	Europe