Chapter 4  Valuation of Assets and Liabilities

Trying to analyze a credit, without a reasonably clear fix on the value of assets and liabilities of the entity being studied, verges dangerously on lunacy. Yet, this was the frivolous pursuit Moody's, S&P and other credit researchers indulged in, for a long while, when they assigned exotically high credit ratings to certain financial institutions, despite the fact that Level 3 assets constituted in many cases more than 150% of shareholders’ funds. Level 3 assets are assets which cannot be valued based on market quotes but are carried on books at values based on the whims and fancies of management hiding behind the purdah and burqa of financial models. Without a clear idea of asset valuation, one cannot assess the value of shareholder funds left in the business. Hence an analyst cannot assess the cushion available to creditors in case cash generated from operations are inadequate for debt servicing. Likewise, once asset values are known, it is imperative to know the correct value of liabilities so that the credit analyst can assess if the business can support more debt or current levels of indebtedness are too high.

Asset values are not static and change in response to economic conditions and technological progress. The equipment required to make horse carriages must have sharply plunged in value when the automobile industry took off in the early part of the twentieth century. Such an asset is called “impaired” and its value must be written down to the value at which it can generate returns higher than the cost of capital. When such a write down happens, the greater the cushion provided by shareholders’ equity, the less is the creditor impacted.

Assets do not have a unique value- they might have a value A while sitting on the balance sheet of an entity ABC while they might have a value B when parked on the balance sheet of an entity XYZ. That is because a different entity can put the asset to more productive use, rendering it more valuable to that entity. The credit analyst, analyzing a company on a going concern basis,
is more interested in the value of the asset to the entity holding it. Only in a liquidation scenario can the analyst can assign a value to the asset based on its value to other entities.

**Is Liquidity of Assets relevant to a Creditor?**

Assets can be liquid or illiquid. To the credit analyst, liquidity of an entity is not a relevant issue. The solvency issue which gets converted into a liquidity problem is. Many companies in financial trouble like to pretend that they are having a liquidity problem but are in actual fact facing an existential solvency problem. The liquidity issue is usually bunkum, whether for manufacturing companies or for financial institutions. A sound asset generates liquid returns. A financial institution need not worry about systemic liquidity as governments and regulators invariably step in when the financial system as a whole suffers from liquidity issues. More often than not, for a single institution, doubts on the solvency of the intuition linked to questions on asset quality and asset valuation is the cause of liquidity events as depositors and creditors head for the exit at the same time. A management which has a sound grip on the asset quality of its institution and is communicating this clearly to creditors will not face an idiosyncratic liquidity problem. That means not telling creditors stuff such as - the value of our assets, as valued by our proprietary model, is $100 million with a delta of $5 million and a gamma of something else. The sensible creditor in this case might conclude that whatever assets are left on the balance sheet would soon have a sharp “theta decay” and head for the exit, causing the liquidity event. There is no need to do “scenario planning” for 3-sigma or 6-sigma or any sigma events. To summarize,

Liquidity Problem at a company= Perceived Solvency Problem + Poor Investor Communication

What about an institution borrowing short to fund a long dated zero coupon government bond? Or a bank which finances 30 year fixed rate mortgages with overnight borrowing? Unless the
hedge fund or the bank has a serious amount of shareholders’ equity, what the creditor fears, when interest rates start looking up are solvency issues. This precipitates the liquidity event as creditors compete with one another to be the first ones out and not vice-versa of a liquidity problem causing solvency issues.

Once the analyst has a reasonable fix on the value of assets of an entity, he should estimate the balance sheet and off balance liabilities. While IAS 39 (See Accounting Box: IAS 39 and Valuation of Financial Assets and Liabilities) permits the stating of liabilities at market prices on the premise that the entity can buy the liabilities in the open market if its value is below face value, a credit analyst should not analyze liabilities in that light. If the value of the liabilities is sharply lower in the market and the entity has not repurchased the liabilities, chances are the entity does not have the financial flexibility or the wherewithal to buy back the liabilities. The very fact that liabilities are trading at sharply lower prices imply skepticism in the market place of the entity’s ability to refinance the obligations (i.e. the market is betting that the company will not be able to secure financing and does not have internal cash generation ability to buy back the liabilities at reduced prices). Hence, the liabilities will be repaid in full only at maturity and the credit analyst will need to value liabilities at face value. Also, a credit analyst should not be permitting in his analysis profits from fall in value of liabilities, unless the liabilities have been actually purchased at below face value.

Asset liability mismatch risk is usually talked about only for financial institutions. The risk is on account of the interest rate risk due to differing duration of assets and liabilities and on account of differing currencies of assets and liabilities. Such risks also exist for manufacturing companies. In this chapter we look at long term assets and liabilities. In the next chapter we analyze current assets and liabilities which get converted to cash over a cycle of production (the working capital cycle). We first look at valuation of different assets in a typical balance sheet, with more
emphasis on the value of assets of a bank. Then we look at valuing different liabilities of an entity from the creditor standpoint. Finally, we look at the assets and liabilities of insurance and reinsurance companies.

**Valuation of Intangible Assets**

IAS 38 defines an intangible asset as an identifiable non monetary asset without physical substance. This asset includes intellectual property, brand names and trademarks, patents, licenses, franchises etc. Numerous other soft competitive advantages can also be put under this head. But a number of questionable assets of a non monetary nature could also be classified under this category. The credit analyst has to understand the exact nature of the intangible asset and whether he thinks it is a source of real strength or whether it has been used for dressing up the accounts to improve the debt equity ratio. He also needs to know how vulnerable the asset is to impairment and what events can cause impairment. The likely life of the intangible asset and hence the yearly amortization, if any, that is required must also be evaluated. The importance of intangible assets was highlighted during the 2005 acquisition of shaving equipment maker Gillette by consumer goods company Proctor & Gamble (P&G) for $53.4 billion. P&G ascribed $29.7 billion of this purchase price to Gillette’s brands ($25.6 billion), its patents and technology ($2.7 billion) and its customer relationships ($1.4 billion).

Explanations provided by IAS 38 also help a credit analyst to focus his mind in evaluating whether there is anything more than hot air in the intangible asset. According to the accounting standard, an intangible asset must meet three clear conditions. Firstly, it must be identifiable, that is, it is capable of being separated from the entity and sold, transferred or licensed. It could also result from contractual or legal rights that are transferable. Secondly, the entity must control the asset, that is, the entity must have the power to obtain future economic benefits
from the asset. Thirdly, the economic benefits from the intangible asset may materialize in the form of revenues from the sale of products or cost savings from the use of the asset.

Intangible assets can be acquired from another entity. They are to be carried at acquisition costs plus direct costs associated with preparing the asset for use. Intangible assets could also be acquired in an M&A transaction. It must be remembered that any costs associated with creating an intangible asset should be recognized as an asset only once it is certain that there will be economic benefits. Until that point, all costs must be expensed. For instance, expense for research must be expensed as incurred. Only in the development phase, when there is a clear idea of economic benefits, can it be capitalized. After it is recognized as an intangible asset, the asset can be valued using two methods- the cost model wherein it is recognized at cost less accumulated amortization and impairment or by the revaluation model wherein it is carried at fair value less amortization and impairment. If there is no active market for the asset, it has to be carried using the cost model. Any increase in the value of the asset in the revaluation model has to be directly recognized in equity. Losses in the value of the asset, however, have to be run through the income statement. Intangible assets might have a finite or infinite life. The impairment test is what determines, on a continuous basis, any loss in the value of the asset.

**The Intangible Assets of Switzerland’s Pharmaceutical Giants**

Switzerland is the country with the highest proportion of intangible assets on account of its two pharmaceutical giants, Roche and Novartis. At the end of 2008, Novartis had intangible assets of $9.5 billion in addition to goodwill of $11.2 billion (also linked to patents from acquisitions), out of the total assets of $78 billion. In 2007, the company took an impairment charge of $320 million (out of a total impairment charge of $482 million) following generic competition for its antiviral medication Famvir. Israel’s generic giant, Teva (we had talked about the company and
its prospects in Chapter 2), successfully challenged the patent in the US courts before the patent was to expire in 2010. With aggressive firms like Teva on the prowl, intangible assets of pharma companies are not as solid as they used to be—so creditors beware. Ideally, intangible assets should be contributed by a number of drugs with no single drug contributing to more than 5% of total intangible assets. That would ensure that if a patent falls by the wayside, there is adequate cushion left. Roche’s top 20 drugs accounted for 88% of its sales in 2008. A bit worrisome was the fact that two drugs contributed 16% of sales each and yet another drug contributed 14% to sales. Its famous swine flu drug Tamiflu accounted for 5% of its sales. With lots of questions being raised about Tamiflu, credit analysts must factor in a scenario in which Roche not just writes down intangible assets linked to Tamiflu, but is required to pay fines in some countries.

**Krispy Kreme’s “Reacquired Franchisee Rights”: the need to understand the Intangible Asset**

Krispy Kreme, founded as a single donut shop in the United States in 1937, expanded rapidly in the next few decades. The company’s most famous competitor was Dunkin’ Donuts, a company which got a major chunk of its revenue from sale of coffee rather than donuts. After several changes of ownership (including being involved in a leveraged buyout), Krispy Kreme had its public listing in 2000. Being a publicly listed company, there was continuous pressure to report higher earnings every quarter.

One of the company’s important sources of revenues was franchisee royalties and fees. On opening a new store, a franchisee of Krispy Kreme would pay an initial franchisee fee. The franchisee would then pay annually a certain percent of sales as royalty fees and a percent of sales to the corporate advertising fund. Retail food chains occasionally repurchase franchisees from unhappy or underperforming franchisees. However, if the business as a whole was successful, these repurchases would be few.
Successful franchisors get most of their revenue from franchisees in the form of royalty fees. This fully aligns the interests of the franchisors and franchisees - both of whom want to maximize revenues at the store level. Krispy Kreme however relied on profits from sale of equipment and ingredients to franchisees. This incentivizes the franchisor to open as many stores as possible, because, in the short run, it results in increased sale of equipment and ingredients. Obviously, when too many stores are opened at short distances from one another, the franchisees start competing among themselves for sales. When sales and profits suffer, franchisees obviously want to get out and hence the increased repurchase of franchisees.

More than the fact of unhappy franchisees, what was most interesting was the accounting for such franchise repurchases. The company booked most of the purchase price of the franchisee as an intangible asset called “reacquired franchisee rights”. The industry practice was to amortize this head but Krispy Kreme did not do so. In addition, the company made matters worse by agreeing to pay the franchisees a high price so that the struggling franchisees could make interest payments on their past due loans. When the interest payment came in, it was recorded at income, in effect converting its own overpayment for the repurchase into reported profit. All expenses connected with the repurchase of a franchisee, whether cost of closing stores or any other expense were recorded with “reacquired franchise rights”, rather than as costs in the income statement. Added to this, the company was involved in a number of related party transactions, when board members and other insiders, who owned franchises, sold them back to the company at exorbitant prices.

The head “reacquired franchise rights” made its appearance in the fiscal year 2002. That year, this head had a carrying value of $16.6 million in a balance sheet of $255 million. Next year, the head jumped to $49.3 million on a balance sheet of $410 million. That was when creditors should have jumped and asked what was happening. Of course, creditors who understood the
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credit story of the entity would have asked questions the previous year itself. Next year, “reacquired franchisee rights” were carried at $176 million in a balance sheet of $660 million.

Then people started asking the questions they should have asked a couple of years before. The SEC began an enquiry and the CEO and several top executives were out. Another smoking gun was that between 2000 and 2004, the company had four CFOs. That should have caused eyebrows to be raised but apparently it did not.

**British Airways’ trading in Heathrow Landing Rights have no impact on its Credit Quality**

An intangible asset that can loose value at short notice is the so called landing rights possessed by airlines. The right to operate flight services to busy airports such as London’s Heathrow airport can be a valuable one. These rights can sometimes be traded or sold subject to acquiring the requisite permissions. When airlines have encountered financial problems, they have sold the rights to other airlines. For instance, bang at the height of the credit crisis in November 2008, the US’ low cost carrier Southwest Airlines scooped the landing rights at New York’s LaGuardia airport from bankrupt ATA Airlines. In fact, the bankruptcy court, at the middle of a crisis is the best place and time to ensure not overpaying for such an asset. Southwest paid $7.5 million for rights that permitted it 14 landing and take-off slots at the airport.

Obviously, landing rights in an airport situated on an unprofitable route have low value. The value of the asset is linked to the potential excess earning on account of possessing the right. The value of this asset is very fragile and must be tested continuously, like all intangible assets, for impairment. Any change in government policy such as permitting a new airport to come up nearby the existing airport can drastically impact the value of the rights. Governments also have the power to bilaterally negotiate with foreign governments for securing landing rights for their
home country airlines. Of course, this must be accompanied by reciprocity- the airlines of the foreign country must be given landing rights in the home country.

In its annual report of 2008-09, British Airways ascribed a value of £205 million to landing rights it possessed. The airlines carried total intangible assets of £267 million. The company capitalizes landing rights acquired from other airlines at cost or fair value less impairment losses. Landing rights outside the EU are amortized on a straight line basis over a period not exceeding 20 years. In the case of landing rights within the EU, the rights are considered to have an indefinite life because, as per EU norms of October 2008, the landing rights are freely tradable.

British Airways does have a track record of trading landing rights. In 2003, the airline purchased access to 8 slots at Heathrow owned by Swiss Airlines (the successor to bankrupt Swissair) by giving a loan of £22 million to the Swiss company. In the same year it acquired 4 Heathrow slots from the US’ United Airlines for $20 million. The American airlines sold the slots to help it tide over its deep financial problems. In 2004, British Airways sold 4 Heathrow slots to Australian airlines Quantas for $30 million.

Dabbling in trading of landing rights as well as the carrying value of landing rights do not have a material impact on British Airways’ credit quality. The £200 million carried value is a small bit in a balance sheet with a size more than £10 billion. However, in the case of small airlines having planes on operating lease, these landing rights can be an important component of the balance sheet and the fountain of their credit story.

**Valuation of Lease Assets**

Leases are of two types- finance leases and operating leases. A finance lease transfers all the risks and rewards of owning an asset to the lessee. All other leases are operating leases. IAS 17 requires lessees in a finance lease to recognize in their balance sheet, the lower of fair value and
present value of the minimum lease payments discounted at the interest rate implicit to the
lease. All initial direct costs of the lessee are added to the above amount. Typically, in a finance
lease, ownership is passed on to the lessee at the end of the lease term or the lessee has the
option to buy the assets at below fair value. Also, the lease term usually spans the useful life of
the asset. The risks associated with the asset are taken by the lessee- if he decides to cancel the
lease midway, associated losses to the lessor must be borne by the lessee. So, from the point of
credit and equity analysis, there is no difference in the analytical framework from that for asset
ownership. The only issue is how the residual value is handled in the lease agreement. When
manufacturers of assets enter into a lease transaction with a customer, instead of selling the
asset outright, the manufacturer usually takes the residual value risk.

Operating leases bring in financial flexibility to the lessee’s balance sheet. There is a close
correlation between lease rentals and yields on the assets. If the yield on assets goes up, the
lease rental is expected to go up too. So, creditors need not be worried about lease rentals
going up post the term of a lease. Whether the company being analyzed has entered into a
finance lease or an operating lease, its position is definitely never worse than if it had owned the
asset. There are times when there might be a temporary shortage of assets- such as drilling rigs
at the top of the crude oil bubble in 2008. This could have resulted in companies that leased
those assets having to forego opportunities. But that’s a risk creditors can live with, because
assets bought at the height of a bubble never make sense for creditors or shareholders.

Where creditors need to pay close attention is how “sale and lease back” transactions are
handled. Usually, “sale and lease back” would be resorted to by a company under financial
stress which needs to raise short term funds. It is unlikely that the sale would have been carried
out at a price in excess of the carrying amount. If a company managed to secure a profit in such
a transaction, and the lease entered to, post the sale, is a finance lease, the company cannot
book all the profits upfront but is required to amortize the gains over the life of the lease. If the lease entered to post a “sale and lease back” is an operating lease, any profit from the transaction can be recorded upfront.

**Analysts should sharply writedown Airplane Lease Portfolios**

Over the last decade, the value of airplane portfolios of airplane leasing companies rested more on hope than stark facts. Even before the end of the dotcom boom, airlines’ financials across the world had been terrible. Airlines filing for bankruptcy, particularly in the US, did not remove excess capacity from the system. On the contrary, things got worse as the airlines, in the bankruptcy court, drastically renegotiated their airplane lease rentals, sometimes by as much as 50%. At least, in the post dot com phase, there was a whiff of hope based on demand for new planes from countries such as India where a number of newly minted airlines were looking to expand their capacities. In the financial year ending March 2009, Indian airlines collectively had losses of $2 billion, almost a quarter of global airline losses. All the airlines were looking to lease out their planes, in direct competition to airplane lessors.

Among the abundant dose of yucky stuff on General Electric’s balance sheet at the end of 2008 was a $33 billion portfolio of more than 1400 airplanes which the company leased out to airlines. The biggest player in the game was International Lease Finance Corporation, a subsidiary of bailed out insurance company AIG. International Lease Finance was founded in 1973 but the owners sensibly sold it to AIG in 1990 for $1.3 billion. Among the many things carried at questionable value in Australia’s “infrastructure bank” Macquarie’s balance sheet at the end of 2008 was a $3.5 billion airplane portfolio. Babcock and Brown, another Australian bank and a big player in the structured finance game which drove the bank to bankruptcy, did its stakeholders no favor by holding on to a $7 billion airplane portfolio.
Historically airplanes whose useful life had ended were moved to the Mojave Desert in California. Increasingly this place is witnessing newer and newer airplanes being parked there on account of no demand from airlines. And an airline whose shareholder equity has effectively been wiped out can threaten to shred the lease agreements for airplanes in a bankruptcy court.

The lessors forgot one fundamental principle- you can do all the financial structuring in the world you like but if the end customer of a business is not strong financially, the cancer would spread across the whole structure. And in valuing a lease portfolio, that is precisely what a credit analyst should be doing.

The most interesting aspect of the airplane lease business was the securitization of the lease receivables from airlines through issue of enhanced equipment trust certificates (EETCs). The credit risk of these certificates can be tranched through issue of several classes of EETCs, with the holders of the senior tranche (“tranche A”), getting paid before the holders of the junior B, C and D tranches. In a bankruptcy court, the holders of the “tranche A” do not mind working out lower lease rentals as they are not impacted- it is the holders of the B, C and D tranches that get wiped out. Holders of unsecuritized lease agreements will definitely have to write down the value of the leases they carry on their books. Credit analysts would not be too conservative if they record an impairment charge of 50% on newer planes in lease portfolios and 60% to 70% on older planes.

There are just too many airplanes in this world. Just as some airlines built their business model around being “low cost airlines”, it is also possible to build a new airline with airplanes bought at distressed values. Because these airlines operate on a different cost base, chances are they would drive a number of semi bankrupt airlines over the top.
The Real Estate Business might cause trouble for Japan’s Orix Corporation

Orix was established in 1964 in Japan. It started off as a leasing company that branched into a number of activities. The company flourished in the 1960s and 1970s as Japan’s economic miracle was underway. It is one of the finance companies whose assets can be valued within a not-too wide band- Level 3 assets were only 5% of total assets in the year ending March 31st 2009.

Till 2005, the asset quality of the company’s lease portfolio was very good. A big chunk of the lease portfolio consisted of cars leased cars to various companies. From 2005, the company made a major push towards the real estate sector. Between 2005 and 2009, the operating lease portfolio connected with real estate grew by about 140%. The auto portfolio went up by 60%. Of its operating lease portfolio of $12.5 billion, the real estate related portfolio was around $7.5 billion, while the auto linked portfolio was around $4 billion. The real estate push extended beyond leasing to vanilla lending to real estate projects. Real estate related lending portfolio at the end of March 2009 was $6.5 billion, more than twice the level of 2005. Despite this horrid real estate exposure, Orix will survive for several reasons. The most important reason is that the company is conservatively leveraged- so it can write down assets without putting solvency at risk. Secondly, it does have a lot of businesses which generate solid revenue and which can help in the write down of the real estate assets.

Manufacturing Company’s Assets

The biggest item on the asset side of a manufacturing company’s balance sheet is usually under the head “property, plant and equipment”. The manufacturer uses these assets to produce goods. The credit analyst needs to be aware, within a broad range, of the value of the assets so as to estimate the gearing of equity, and the potential recovery in case the company plunges
into liquidation. Manufacturing asset value is a function of location. The same set of assets located in a low labor cost region might produce higher returns than when located in a high cost region. Asset values can suddenly plunge if a radically improved equipment comes into the market which dramatically improves productivity. Such equipment would cause a write down in value of existing assets.

IAS 16 requires property, plant and equipment assets to be carried using either the cost model or the revaluation model. Once a particular model is chosen, a company has to apply that policy to an entire class of property, plant and equipment. When the cost method is used, the company carries the asset at cost less accumulated depreciation and accumulated impairment losses. The revaluation model is used for an item of property, plant and equipment whose fair value can be measured reliably. Revaluations are required to be made regularly to ensure that the carried value does not depart much from fair value. For a manufacturing group it is better to carry the assets at cost less depreciation and impairment. In case, over a cycle of household debt, the earnings of an asset are lower than the cost of capital, an impairment charge needs to be taken to ensure that the asset valuation produces income related to the cost of capital. Fair value of manufacturing assets might induce volatility in their carried value which might not reflect the income producing ability of those assets.

Depreciation of the manufacturing assets must be correctly deducted from revenues. Only then the return on capital employed can be correctly estimated. Also, only then can an analyst estimate the amount of capital expenditure required to sustain the business at current levels. Neglected/delayed capital and maintenance expenditures can disrupt operations and put into question debt servicing ability. The economic reality should reflect whether the written down value method of depreciation should be used or the straight line method. Since, for most assets, the value of a manufacturing asset falls sharply post acquisition and then falls at a moderate
pace, it makes sense for most companies to use the written down value method. Also, since the new equipment is likely to require lower energy costs for operating, it makes sense to take higher depreciation charge initially and levelize life cycle operating expenses.

An important item regarding plant and machinery, not revealed in the financials, is the country of origin of the equipment. Some countries have a reputation of producing low cost equipment of questionable quality. This can lead to costly plant disruptions sometime in the future. So, analysts should keep track of any “penny wise pound foolish” strategy resorted to by the management of a company. Another issue is asset revaluation when assets are revalued upwards. Accounting standards require this upward adjustment to be done directly in the balance sheet so that it does not disrupt the income statement. Analysts have to worry if this upward revision is based on a single year jump in the earnings from the asset, which might not be sustainable. Also, valuing different parts of the property, plant and equipment sections independently can lead to misleading conclusions. So does part revaluation can lead to wrong conclusions. To realize the increased value of land, the plant and machinery might have to be removed and sold- possibly at a lower value than carried in the books and costly layoffs resorted too.

The Kodak Moment was cast aside by Technology change- Impairment Charges followed

Write down in value of plant and equipment usually happens when there is a change in the credit story of an industry on account of introduction of new technology. This new technology changes the manufacturing process and the manufacturing equipment required, causing a write down of the old assets. Another reason could be labor arbitrage- it might make more sense to produce the good elsewhere on account of lower labor costs. It might make sense to put up a new plant at this location rather than ship the old plant brick by brick. When manufacturing
assets are written down, it is accompanied by employee severance costs, inventory write downs and other exit costs.

Founded in 1880, Eastman Kodak successfully exploited the then new technology of the portable camera. Since then, the company was always at the forefront in the imaging space until Polaroid introduced the instant camera in 1976. That was the first hint that the company was no longer a master of all it surveyed. In 1991, the company settled a patent infringement suit with Polaroid by paying $925 million. But it was towards the end of the twentieth century, when the company revealed itself ill prepared for the onset of digital imaging that the company’s credit story came to an end. Once that happened, all that followed were endless restructuring, plant closures, writing down equipment carried value and employee severance costs. The company had two major restructuring programs in the decade between 1996 and 2007. But the plot had been lost earlier. Sensible creditors should have gotten out by the mid to late 1990s. Management was not able to come up with a strategy to recover lost ground.

In 1996, the company recorded a restructuring charge of $358 million and a $387 million charge on the disposal of its office imaging sales and services business. In 1997, the company took a pre-tax charge of $1.45 billion for restructuring and $186 million for write-off of R&D expenses from an acquisition. The charges included costs for inventory write down, severance payments to 16,000 employees, cost of demolition and shutdown of facilities and getting out of lease obligations by paying a penalty. In the next restructuring program, between 2004 and 2007, the company recorded charges of $3.4 billion, again composed of accelerated depreciation of assets, severance packages related to the elimination of 27,650 jobs, impairment charges on value of plants etc. The company even recorded an impairment charge of $238 million related to the sale of a facility in China. At the end of 1997, the company had only $3.2 billion of equity to support $13.1 billion of assets. By the middle of 2009, vultures were flying over the company.
A private equity shop bought its senior notes at a distressed interest rate of 10.5%. Because the credit story ended more than a decade back, the private equity shop also received warrants to convert to 53 million shares of Kodak.

**US Airlines underprovided for Depreciation and overstated Residual Value in the late 1990s**

In the late 1990s the US airline industry was reeling under losses. As in the case of the automobile industry, union contracts and generous pension provisions had made the older generation airlines unviable. When they could not put a lid on operational expenses, they resorted to financial engineering to boost their earnings. The artifice used was increasing the useful life of their airplane fleet and increasing the residual value of the airplanes. Both the measures reduced the annual depreciation expense of the airlines and increased their reported profits. The shenanigans were exposed when some airlines sold aircraft below their carrying value and recorded losses. An analyst who was not alert to this accounting change might have assumed that the credit story of the airline industry had turned for the better. Because airplanes are movable assets, and there is a liquid airplane lease rental market, perhaps it makes sense to carry airplanes at fair value based on airplane type and vintage. Or, to dampen volatility, the residual value could be obtained from the market. The critical point for the credit analyst is if he cannot correctly estimate depreciation costs of an asset, he would not be able to calculate return on capital employed accurately over a business cycle. And if he can’t do that, he cannot estimate if there is an investment story at all.

A similar phenomenon occurred in India in 2008. There was chronic overcapacity in the sector. A brutal fare war had broken out among the airlines. Jet Airways, incorporated in the early 1990s after India liberalized the aviation sector and threw it open to market forces, was a very successful player in the industry till a number of new players entered the sector in first decade
of the twenty first century. What was once a very profitable airline plunged into losses. In the quarter ended June 2008, Jet Airways quietly changed its airplane depreciation method from written down value method to the straight line method for its narrow bodied aircraft. This helped the airline report a profit for that quarter. But the boost from this accounting trick was short lived as the airline sank into deeper losses during the following year.

In an industry where hundreds of unwanted airplanes are parked in a desert, the correct residual value of airplanes post their useful life, is precisely zero. Airlines would find this out the hard way.

**Valuing Impairment of Assets**

Accounting standards require companies to assess at the end of every reporting period whether they are carrying assets on their books at values above what is meaningful in terms of return on capital employed. IAS 36, “Impairment of Assets”, specifies that assets should not be carried at more than their recovery value. The standard states that an asset is carried at more than recoverable amount if the carrying amount exceeds the amount that can be recovered through use or sale of the asset. An asset is defined to be impaired if the carrying amount exceeds the recoverable amount. Impairment of assets such as inventories, employee benefits, property, plant and equipment are governed by the respective accounting standards that deal with those assets. The main focus of IAS 36 is on investments in other companies- whether subsidiaries, associates or joint ventures. The chief reason for the occurrence of impairment here is due to the company having overpaid for those investments. Typically, investment assets bought in the middle of a boom are what result in impaired assets once the good times end. The other reason for such impairment is drastic technology changes in the area where the investments were made, dramatically reducing the likely receipt of cash flows from those assets.
The recoverable amount is defined by IAS 36 to be the greater of the fair value of the assets minus the costs to sell the asset and the value from the use of the asset. The value from the use of the asset is the present value of the expected cash flows from the asset. In the case of damaged equipment that can still function, it is recommended to reduce the useful life of the asset through accelerated depreciation rather than take an impairment charge.

**Impairment Charge by Europe’s Telecom Players on account of overpaying for 3G License Fees**

The fear of being left out when action is on during a bubble induces corporations to do foolish things. In the midst of a bubble, shareholders might enquire of management why their firm is lying low when supernormal returns are to be had. Unable to withstand the pressure from shareholders and other stakeholders, management overbids for assets. The asset could be a company. The most egregious example of this was AOL Time Warner taking a $54 billion impairment charge on account of Time Warner overpaying for AOL in 2000 at the height of the dot com boom. Since this acquisition involved share issuance and not usage of cash, creditors were not affected, but there was a massive transfer of value from the shareholders of Time Warner to the shareholders of AOL. Likewise, Qwest Communication took a $41 billion charge in 2002 on account of overpaying for US West and other companies.

The fear of being left out caused Europe’s telecom operators to overbid for 3G licenses. Each country was auctioning only a certain number of licenses. This gave rise to the thought that those who lost the bid would be wiped out from the telecom map. Somehow, the thought never occurred that overpaying for the licenses would put tremendous pressure on the financials of the competitors, greatly reducing their operational and financial flexibility. In fact, if those companies headed for bankruptcy, their assets could have been acquired cheaply once the bubble was over. But the pressure from the markets was just too much. One by one, the
big telecom operators fell to the temptation of overbidding for the license fees. The worst aspect of this sorry episode was that this fee was paid out by taking on oodles of debt. The fruits of their sins were evident quite soon. In 2002, Deutsche Telekom posted a loss of €24.6 billion while France Telecom had a loss of €20.7 billion. This was chiefly because of the impairment charges taken by the telecom companies on the value of their license asset. In 2005 and 2006, UK telecom operator Vodafone took a charge of £10 billion and £28 billion to writedown the value of its business in Italy and Germany respectively which it had obtained through acquisitions. Vodafone, at the height of the dot com boom bought German telecom operator Mannesmann for £101 billion. The company paid £13 billion for 3G licenses in 2001 and 2002. Dutch telecom group KPN quit its 3G venture with Hong Kong’s Hutchison group. It took an impairment charge of €9 billion. Finland’s Sonera and Spain’s Telefonica took multibillion Euro impairment charges too.

As an aside, in 2009, Virgin Mobile bid €240 million for the fourth French 3G license. The existing 3G operators such as Orange paid €619 million in 2001 and 2002 for the same license. The fundamental lesson that shareholders and creditors have to imbue is if they wait for some time, assets will be available at prices which yield at least the required return on capital employed, if not at lower prices. Hurrying to acquire assets at any price merely causes impairment charges. And for the creditors, who get absolutely nothing from bidding for such assets, the way to keep things under control is to refuse to finance such ventures. Else, the company can get into trouble and default on its debt. In fact, covenants should be provided in loan agreements that prevent expenditures beyond certain level without creditor approval. The temptation to overpay for assets can afflict even the most disciplined of investors. At the height of the crude oil bubble in 2008, Warren Buffett overpaid for a stake in oil exploration firm
Conocco Phillips, the error of which the great man promptly acknowledged in his 2008 letter to shareholders of Berkshire Hathaway.

Assessing the value of a Bank’s Assets

Rating agencies look askance at a bank’s creditworthiness once its asset quality weakens. However, the point of bank credit analysis is to predict the likelihood of asset quality deterioration – not wait for the deterioration to occur and then pronounce judgment. In short, rating agencies should have been downgrading the US and European banks from 2005, when impending trouble could have been easily spotted by a) rise in loans to retail customers with zero or negative equity b) debt financing of buyouts at crazy leverage levels c) insane increase in the size of the trading book d) increase in level of illiquid investments- the only illiquid asset on a bank’s books should be its loans e) sharp increase in the holding of assets whose values were based on “model” output and f) sharp increase in societal debt ratio (SDR). The rating agencies however failed to discern the sign of the times. Downgrading banks in 2007 and 2008 could have been done even by a stunningly mediocre orangutan.

The asset side of a bank’s balance sheet comprises of three parts- the loan book, the investment book and the trading book. If the trading book is larger than 10% of the total asset book, a creditor has no reason to be around that institution in any form or shape. For instance, if you looked at the annual report of Deutsche Bank for 2007, you would find that the trading book overwhelms the loan book. One wonders why German regulators consider it prudent to allow the bank to gamble with depositors’ money (and tax payers’ money if the whole structure collapses and needs a bailout). For calculating the size of the trading book one should not consider the absolute amount of trading assets but subtract the category “Financial liabilities at fair value through profit and loss” from the category “Financial assets at fair value through profit
and loss”. That is because international accounting standards require you to show the assets and liabilities of a derivative transaction separately, and not on a net basis at marked to market value. The accounting treatment makes a lot of sense because the liabilities and assets might have differential credit risk. But for calculating the size of the trading book, calculating on a net basis suffices. Banks claim that the large size of the trading book does not reflect proprietary trading but includes trading on client account. Even if that is true (which is not the case with many institutions), the phenomenal amount of credit risk if the client is speculating or improperly hedging, does not make the pursuit worthwhile for anyone except the employees involved.

A sizeable proportion of a bank’s assets should be loans that it originates under very tightly managed underwriting principles. The lower the percentage of bank loans as a percentage of total assets, the higher the credit risk of the bank. A much smaller percentage of a bank’s assets could be investments. Investments in debt securities of a corporation or asset backed pools of retail loans originated by other entities should not be a high percentage of the investment book, as unlike the loans the bank originates, it does not have a close and ongoing relationship with the borrower to assess the borrower’s creditworthiness. For a discussion on bank risk capital estimation, see the Text Box: Basel II and Bank Asset & Liability.

**Loan Book Valuation**

IAS 39 requires banks to carry loans on their books at values calculated from discounting the loan cash flows at the effective interest rate of the loan (for definition of the effective interest rate see Accounting Box: IAS 39 and the Valuation of Financial Assets and Liabilities). Now, this presents a true and fair view of the loan values as they currently stand but not very informative to a financial analyst. General provisions are created for potential bad loans, the moment a
bank makes a loan, based on the knowledge that a certain percentage of loans that are now performing might cease to perform in the future. Specific provisions are made once a specific loan turns bad. Since general provisions are created based on past loss experience (or regulatory specification), it might be inadequate if there has been a change in the loan approval standards or if a bank has made modifications to the loan products offered to customers. Loss experience can also go up due to external factors such as sharp increase in SDR.

In early 2007 both Wells Fargo and Washington Mutual (WaMu) were carrying home loans at face value on their respective balance sheets- however the former was originating home loans to creditworthy borrowers, with the borrowers making down payments, while WaMu was originating loans with no down payment. Two issues spring to mind when comparing the mortgage loan book of WaMu and Wells Fargo. Firstly, the probability of default (PD) of Wells Fargo’s home loans was lower than that of WaMu’s because the former clearly looked at the income and credit profile of the borrower. Also, the very fact that the Wells Fargo borrower could afford to make a down payment while WaMu’s could not, implied lower expected delinquencies on Wells Fargo’s home loan book. Secondly, if a default did occur, because the Wells Fargo borrower had equity in the house, the recovery on the defaulted loan would be much higher than WaMu’s. Hence the loss to Wells Fargo from a defaulted loan, referred to as loss given default (LGD) would also be lower. So, the expected loss from the loan portfolio, given by the product of the PD and LGD, would also be lower. That would not be evident if one looked at the home loan portfolio of the two lenders in their respective balance sheets. Only much later, when the loans start getting seasoned and the defaults start to occur would it be known whether the carrying amounts in the balance sheet was correct. Obviously, if the loans were priced so as to incorporate the expected defaults there would be no problem. But what if a lender was mispricing loans (on the lower side) or he had no idea of expected defaults as he
had entered a new line of business or was beginning to run his current business under more lax loan underwriting standards?

This is where the other elements of credit analysis – following the credit story (change in the industry practices such as the entry of negative amortization home loans etc) and management interaction (to understand loan growth strategy, entering new business lines etc) come in. If you see a bank entering a new line of business and the management plans to expand the business very slowly so that it can price loans correctly and tweak the loan conditions after analyzing the delinquency experience, the credit analyst need not be too bothered. On the other hand, if you were a lender to mortgage financier Countrywide, when the management got into sub-prime lending and decided to expand at breakneck pace, you should have known that you needed to get out really fast.

This is one of the places where rating agencies fared really poorly. They merely looked at the quanta of assets on the loan book and calculated an assorted collection of ratios while not gleaning the credit story. And the credit story of US and European bank balance sheets was changing rapidly in the early part of the 21st century. For instance, both loans to an industrial company and a leveraged loan for buyout of an industrial company might be disclosed as loans to the industrial sector. However, while the former loan might be used to expand a company’s business and thus generate returns to pay off the loan taken, the latter would merely lever the balance sheet of the company bought out. In addition, it would give the acquired company the benefit of the wisdom of the private equity managers, managers whose resumes would be light on actual engineering experience while heavy on financial engineering “expertise”. You don’t need a spreadsheet or stochastic calculus to glean that loan write downs were around the corner.
In short, a balance sheet reveals the amount of non performing loans after they have turned non-performing as well as the general provisions for loans expected to turn non-performing based on past experience. However, general provisions are counted as part of Tier II capital (see Text Box: Debt Capital Instruments of Banks). The role of the credit analyst is to anticipate what quanta of loans will turn non-performing before they do so and not rely, beyond a point, on past experience. Rating agencies fail here because they rely entirely on past experience (though they profess not to do so). In new lines of businesses, where the rating analysts neither have sufficient data nor sufficient intellectual wherewithal, they give the benefit of doubt entirely to the bank management.

**Did Standard Chartered Bank harvest its Loan Loss Provisions to report higher Earnings in 2009?**

Standard Chartered Bank came into existence in 1869 through the merger between two banks. The bank operates in 70 countries. In 2008, 70% of the group’s income and 80% of operating profits came from Asia. The holding company is regulated by the UK’s Financial Services Authority.

Provisioning ratio for bad loans is defined as the ratio of the sum of gross provisions at the portfolio level (referred to as general provisions earlier) and specific provision for individual bad loan to the total amount of bad loans. Obviously, the higher the provisioning, the more conservative is the asset valuation displayed on the balance sheet. But more importantly, irrespective of where you are in the business cycle, this ratio should not fluctuate much. Any sharp decrease in the loan loss coverage ratio is an indication of possible harvesting of provisions for reporting higher earnings through under provisioning. It can be argued that at the bottom of the cycle you can have a lower coverage ratio than at the top because at the bottom
of the cycle recoveries from the bad loan will improve as the economy recovers. That is acceptable to some extent if the hypothesis of the economy about to improve holds water.

Standard Chartered bank had a loan loss coverage ratio of 78% for the period ending June 2008 on its consumer banking portfolio. This fell to 72% a year later. The consumer banking loans were predominantly mortgage and SME loans. Reduction in coverage was not called for. Home prices in the countries that the bank lends to looked vulnerable and relied for support on government stimulus programs of those countries. But it is in the area of wholesale banking that there was a sharp reduction in coverage, which is quite inexplicable. The loan loss coverage ratio fell from 84% for the period ending June 2008 to 59% a year later, a full 25 percentage points lower. The impact of this was not insubstantial. Standard Chartered is disproportionately exposed to countries that rely on exports. If the loans are to exporters who export goods to countries with high household debt, the reduction in coverage ratio during 2009 was questionable. If provisioning had been done in the first half of 2009 at the same rate as done in 2008, it would have required additional provisioning of $628 million in the wholesale banking side and $93 million in the consumer banking group, giving it a total requirement for additional provisioning of $721 million. To get an idea of the scale of this number, the bank’s net reported comprehensive income for the first half of 2009 was around $1.6 billion. Of course, the management could have a perfectly innocent explanation for the lower loan loss coverage, but any creditor analyzing Standard Chartered for potential investment should have known the answer before he took the plunge.

**Accounting Box: IAS 39 and Valuation of Financial Assets and Liabilities**

*Please note this standard has been replaced by IFRS 9 since the completion of this book. However, the broad contours of what has been mentioned below remains current*

Understanding IAS 39 titled “Financial Instruments: Recognition and Measurement” is the key to understanding reported values of financial instruments, chiefly derivative instruments and the
limitations inherent in such valuations. Financial assets and liabilities are of the following four types: 1) assets/liabilities held for trading 2) held to maturity investments 3) loans and receivables and 4) available for sale financial assets. IAS 39 explains how financial assets can be categorized into these four categories.

Assets and liabilities held for trading must be carried at fair value, with profits and losses run through the income statement. Held to maturity investments are non derivative instruments that along with loans and receivables are required to be valued at amortized cost using the effective interest method. The effective interest rate is the rate at which if all the future cash flows from a loan are discounted and added post discounting, the resultant value is equal to the loan amount net of any upfront fees. The effective interest rate ensures amortization of upfront fees over the life of an asset/liability. Any impairment in the value of these assets has to be recognized through the income statement and the carrying values reduced by that extent.

Impairment in the value of “available for sale” financial assets has to be recognized in other comprehensive income and the cumulative loss has to be deducted from equity.

Hand in hand with IAS 39 goes IAS 32, titled “Financial Instruments: Disclosure and Presentation” which tells the story that can't be put into the numbers that IAS 39 requires. For each class of financial asset, IAS 32 requires the disclosure of significant terms and conditions, impairment recognition conditions, accounting policies adopted, repricing dates of assets exposed to interest rate risk and credit risk exposures categorized by risk categories. It also requires disclosure of details such as offsetting financial asset and liability, netting arrangements with counterparties etc.

When a derivative instrument is used to hedge the change in value of a financial instrument, the accounting for the gain/loss in the value of the financial instrument and the hedging instrument
are handled together. This is referred to as hedge accounting. A fair value hedge is a hedge that covers the risk in the movement in the fair value of an asset/liability. A cash flow hedge is used to hedge the risk of variability of cash flows from an asset/liability or the cash flow of a highly probable forecasted transaction. A hedge is said to be highly effective if it substantially covers the risk of variability of fair value of an asset/liability. The gain/loss of the hedging instrument and the hedged asset are both recognized in the income statement. In the case of cash flow hedges, the portion of the gain/loss on the hedging instrument that is determined to be an effective hedge is recognized in other comprehensive income. The ineffective portion is directly recognized in the income statement immediately. Currency hedges of a net investment in a foreign operation are accounted for in a similar way to a cash flow hedge.

When a derivative instrument is a component of a non-derivative host contract, thus impacting the likely cash flows of the host contract vis-à-vis had the derivative component not existed, it is referred to as an embedded derivative contract. IAS 39 requires the embedded derivative to be separated from the host contract and accounted for separately if the economic characteristics and risks of the derivative contract are not closely related to those of the host contract. If the embedded derivative is separated from the host contract, it has to be accounted for at fair value just like any financial instrument. For example, in the case of a mortgage backed security, the prepayment option is closely tied to the underlying home loan (the host contract) and hence cannot be separated from the host contract for valuation purposes.

**Corporate Unsecured Loans**

It is difficult for a credit analyst to value the unsecured loan portfolio of a bank from the disclosed information in an annual report. In interactions with bank management, the credit analyst should try to glean if there has been any change in the loan underwriting philosophy of
the bank. Is the bank going to lend to borrower types it has never lent in the past? Has there been any change in the way the bank assesses credit risk? Banks have internal processes for grading potential borrowers into different risk categories (typically on a 5 point scale or a 10 point scale). One needs to know if the process of risk evaluation has changed. Most banks disclose what percentage of their loans belong to category 1, category 2...category 5 etc. One needs to see, from year to year, that the percentage has not changed appreciably for the worse, adjusted for business cycle effects. The other worry for a creditor is if there has been a sharp growth in the loan disbursal rate. If there has been a sharp growth in loans, assessing credit quality from the distribution of risk categories of the loans can be misleading. The new loans are unseasoned, and if they have been poorly underwritten, the deleterious effect will be evident only much later. If there has been no sharp growth in loan disbursement rate and no sharp change in the distribution of credit risk by risk category, a credit analyst can value the loans on the books of a bank at face value.

If there is a sharp change in the lending model, a credit analyst should be ready to factor in increased delinquencies. If he cannot quantify the worst case scenario and its impact on the ability of the bank to service debt, he has to back down and plead inability to take a credit call.

**Text Box: Basel II & Bank Asset & Liability Estimate**

In 1988, the Basel I bank capital norms came into existence when the regulators of banks of developed countries agreed to those standards. Over the next few years, most countries implemented those standards. Broadly speaking, it required banks to set aside capital linked to the credit risk of their banking book. Corporate Loans were assigned a risk weight of 100%. Sovereign backed exposures of OECD countries had a risk weight of 0%. If a bank gave a loan of $100 million to a corporate, its risk weighted assets, calculated as the product of the risk weight
and the amount of exposure would be $100 million \times 100\% = $100 million. If the $100 million exposures was to an OECD sovereign, the risk weighted exposure would have been $100 million \times 0\% = 0$. There were various other risk weights between 0% and 100% for other exposures. For instance, the risk weight for exposures to OECD banks was 20%. Banks were required to keep 8% of the risk weighted asset as capital. So, for the $100 million corporate exposure, the bank had to set aside capital of $100 million \times 8\% = $8 million. Obviously, for the sovereign exposure, the bank did not have to set aside any capital.

The main weakness of the Basel I norms was that all corporate exposures were treated alike. A $10 million exposure to Berkshire Hathaway required the same capital as a similar exposure to General Motors. The other weaknesses, such as no capital requirements for market risk etc were rectified in the early to mid 1990s. Because for a bank (not the perverted use of the word by glorified hedge funds) credit risk is the most important risk, having the same capital requirements for all corporate exposures was a flaw that encouraged the banks to take on the highest possible credit risk to improve their return on equity, if all went off well.

The main task of Basel II was to remove this anomaly. Of course, there were a host of other issues that were dealt with such as capital requirements for the trading book, capital for operational risk, supervisory role, market disclosures etc. Those interested in the evolution of bank capital norms since 1988 as well as the Basel II norms in detail can read the relevant working papers in the website of the Bank for International Settlements – www.bis.org.

Basel II provided two possible paths for bank capital calculation for credit risk- the Standardized Approach and the Internal Ratings Based (IRB) approach. The Standardized approach specified risk weights for exposures linked to the external credit rating of the borrower. This was an enormous improvement over Basel I. It is better to rely even on rating agencies rather than
have the same risk weight for all corporate exposures. Of course, when there is a change in the
corporate credit story, rating agencies will be found wanting.

Under the IRB approach, capital requirements are calculated as per a bank’s internal assessment
of credit risk. Done correctly, this is the best way to estimate credit risk of the banking book.
This is how it works - whenever a new borrower approaches a bank for a line of credit, the bank
branch’s credit team assigns the borrower an internal credit score. In chapter 10 we point out
the weakness of using cluster analysis in the case of corporate credit. Nonetheless, this method
of calculating capital requirements is superior to having the same capital requirements for all
exposures. In some banks this is on a scale of 1 to 5 (with 1 being the best credit quality and 5
the worst credit quality) while in others it is on a scale of 1 to 10. The chief usage of credit
scoring is to price the loan - so a corporate rated 1 will be able to borrow cheaper than a
corporate rated 5. Standard Chartered bank has a bizarre internal rating system that puts
borrowers into 14 risk categories from 1 to 14. Within each category, there are 3 sub categories
A, B and C. Grades from 1A to 12 C are for performing assets. Grade 13 and 14 are non
performing assets. This grading of performing assets in to 36 categories is overdoing it. You just
can’t measure credit prospects that finely, unless you doubled up as an astrologer. Overdoing
estimation of credit risk might seem like a harmless pursuit but it reveals a mindset of focusing
on the micro while ignoring the macro issues.

At the end of every financial year, the bank can re-score the borrowers on its books based on
the latest financial statements. Because the branch manager usually is in close contact with the
borrower, he would be also aware of the non financial changes in the borrower’s credit quality
(the “change in the credit story”). So, at the end of every financial year, the bank’s central
credit risk management team can calculate what percentage of borrowers rated 1 migrated to
credit categories 2, 3, 4 or even defaulted. This can be done for all rating categories. From this
“rating transition matrix”, the bank can estimate the probability of default (PD) of rating categories 1, 2, 3 etc. For instance, of the 300 borrowers of a bank rated 3, if 10 defaulted, the bank can estimate that the PD of rating category 3 as 10/300 = 3.33%. That’s a valuable input for future credit decisions. However, we reiterate, this “rating transition matrix” framework has certain weaknesses which we will discuss in chapter 10. Keeping the weakness of the system at the back of one’s mind helps the risk management team to be aware of the ground reality that there is a lot of prose involved in the risk assessment process. One should not get carried away merely because something can be calculated to the fifth decimal place.

A bank takes different types of collateral for its lending facilities. The collateral could include commercial real estate, plant and machinery and other securities of varying liquidity. Based on past experience the bank can estimate the recoveries from different types of collateral. Say from past experience the bank knows that from a $10 million worth of commercial real estate provided as collateral, considering legal expenses and the time value of money, it would recover $6 million. So, the recovery from the commercial real estate collateral, once the loan defaulted was 60%. Or, the loss given default (LGD) was 40%. The bank’s experience of LGD for different types of collateral would be different.

If a bank uses the IRB approach for estimating capital requirements, PD and LGD are the two most important parameters for that purpose. PDs can be calculated for different categories of corporate borrowers, retail borrowers for home loans, credit cards etc. Retail loans such as credit card loans are unsecured loans, so LGD of this facility tend to be very high.

When can a bank go wrong? Let us say a bank had a policy of giving home loans only to homeowners who make a minimum down payment of 20%. Based on this, it would have a value of PD for this line of business which would not fluctuate much from year to year over the course
of a business cycle. The bank can price its loans accordingly. What if competitors start giving loans to borrowers who bring in just 5% of the home cost to the table? The bank, not to loose market share, might decide to follow suit. The PD and LGD profile of the loan has changed completely. Because, a lower down payment is acceptable, less credit worthy borrowers, who are more likely to default on their loans, enter the picture. Plus, once the default occurs, since the down payment was lower, the LGD would be much higher. Similar bad things can happen in the corporate loan book. And if a bank enters a new business, it would probably have very limited idea of the PD and LGD behavior of that line of business.

When the Basel I norms for capital adequacy were agreed upon in 1988, banks were vastly different animals. Credit Risk in a bank came predominantly from its lending operations and not so much from counterparty risk on account of derivative transactions. Proprietary Trading was not yet fashionable. The Basel II norms that came into effect in various countries, starting 2005 and later, aimed to ensure that the capital requirements of the banking system itself did not change- individual banks would be required to provide higher or lower amount of capital depending on their risk profile. Because the nature of banks had changed between 1988 and 2005, having the same capital requirements for the system at large might not have been prudent. Counterparty risk is a lending transaction and a derivatives transaction are both classified as credit risk, but their nature is different. In a lending transaction, the bank had a close relationship with its borrower and knew (or should have known) all matters about the company’s operations. Counterparty credit risk emanating from a derivatives transaction with another bank is a different beast altogether.

(Submitted for publication: The financial crisis of 2008 revealed the weaknesses of Basel II. Since this book was completed, the Basel III norms were published in 2010. For details of this, please see BIS’ document “Basel III: A global regulatory framework for more resilient banks and banking systems” published in December 2010. There were two welcome changes in the new standards. The quanta and quality of bank capital will go up from 2013. Many debt like instruments (such as Tier III instruments) masquerading as capital will be done away
with. Though some element of debt will continue to be there in a bank’s Tier I capital, in times of crisis, this must be written down or converted to equity. This makes banks Tier I bonds even less attractive for a debt investor. But the successful issue of contingent capital instruments (so called co-co bonds) by Credit Suisse in January 2011 that get converted into equity in times of trouble means suckers can always be found. The second change that will come into effect in the near term is the so called leverage ratio. This will ensure that the extent of deleterious leveraging of a bank’s balance sheet, based on the devious practice of valuing junk assets with models will be curbed. We have some reservations about one change. The attempt to liquefy a bank’s balance sheet through metrics such as the liquidity coverage ratio is unnecessary. If a solvent bank has all its assets in high quality illiquid loans, why worry? Also, rather than discourage banks from using short term whole sale funding through maintenance of a “Net Stable Funding Ratio”, it might have been better to specify that a certain percentage of a bank’s consolidated liabilities must be public deposits (not corporate deposits which is big for Chinese banks.)

**Corporate Secured Loans**

Corporate loans are secured usually by plant and machinery, property or against shares.

Working capital loans, discussed in the next chapter, could be secured against current assets.

Typically, loans for general corporate purposes are secured by the first two categories while loans for M&A transactions tend to be secured by shares.

**Valuing Loans secured by Property**

In many countries, loans secured by commercial property constitute a big chunk of the loan book. In Japan, at the peak of the property bubble, loans secured by property were a sizeable percentage of all loans. Over long periods of time, rise in property prices in an economy usually keeps pace with inflation. That does not mean property prices go up smoothly- they have a tendency to rise sharply and correct sharply. After each price correction, there is a period of quiet. Loans secured by property during this phase are most secure. Loans secured by property after two years of the commencement of the up cycle start getting risky. Of course, no one knows what the length of the up cycle will be- it predominantly depends on the looseness of monetary policy. Thanks to very loose monetary policy during the 1990s and up to 2006, the United States had a very long property up cycle.
Lenders have a tendency to be pro-cyclical in their loans secured by property. After a couple of years of the up cycle, lenders get more and more aggressive in their property sector lending, which provides a further fuel for the up cycle. That is when a credit analyst should start getting cautious and lenders should be withdrawing from the property sector. They should also get cautious about considering property as a sound collateral type. But that calls for a strong management to communicate to shareholders their policy—else there will be tremendous pressure on the management to generate outsized returns from risky loans.

The problems with providing loans secured by commercial property later in the cycle are manifold. Firstly, the security cover gets less when the property cycle reverses. The situation gets more acute if the loan is highly leveraged. Secondly, loans made later in the cycle would have more outlandish assumptions on the return from the property. When those assumptions do not turn out to be true, the loans head for default. Finally, when the property cycle corrects, there will be many loans that would be defaulting across the economy. So, the recoveries from foreclosed property would be sharply lower. The extent of potential damages can be seen from the example of Stuyvesant Town and Peter Cooper Village apartment complex development in Manhattan. Developers Tishman Speyer and Blackrock Realty paid $5.4 billion in 2006 at the height of the real estate bubble. Three years later, when the value of the property had plunged to $1.8 billion, the developers dumped the property on the lenders and walked out. Because the purchase of the property was overwhelmingly financed with debt, the lenders were left holding the baby when the property market soured.

**Leveraged Loans to General Growth Properties - a serious Lapse of Lenders’ Judgment**

General Growth Properties commenced operations in 1954 as a private company. During that year the company opened its first shopping center. In 1970, the company changed its name to
General Growth Properties. A couple of years later it started being publicly traded. During the 1990s the company started expanding its portfolio rapidly, using debt as a fuel for acquisitions. In 2004, the company acquired The Rouse Company in the largest real estate merger in the US till then. By 2009, it had become one of the US’ largest mall real estate investment trusts (REITs) (see Text Box: The REIT Business and the Lenders’ Proper Role in REITs). In the spring of 2009, General Growth Properties filed for bankruptcy in the largest real estate bankruptcy till that time. Entities linked to the company’s commercial mortgage backed securities (CMBS) also filed for bankruptcy- so bang went the notion that securitized malls are bankruptcy remote SPEs, designed to prevent consolidation in the event the parent declares bankruptcy.

There was a role for the lender in the post bankruptcy world of General Growth Properties. Farallon Capital, a hedge fund provided $ 400 million of debtor in possession (DIP) financing. As per the US laws, the DIP financing ranks senior to loans provided in the pre-bankruptcy period. DIP financing to property backed entities almost always makes sense. The fluff present in the asset prices is taken off during the bankruptcy process when equity gets written off and loans from the pre-bankruptcy phase get written down. Also, lenders to real estate entities during bankruptcy should always take a portion of their returns as equity so as to participate in the inevitable up cycle. Farallon structured the financing in a way that would almost certainly make money- it got 8% of the company’s stock and a 3.75% exit fee.

In its 2004 Annual Report, General growth Properties mentioned “it has always been our strategy to use short term debt for acquisition”. Apparently, that did not perturb the lenders. By then, the consolidated financials revealed scary levels of leverage – total debt of $20.3 billion supported by total assets of $25.7 billion. Unsecured debt amounted to $ 8.3 billion. The cover provided by operating earnings for interest payout was less than 1.6 times. There was little room for error- no room for vacancies in the properties leased out, no room for delays in
re-leasing. If there was a clear signal to lenders to pare down exposures, the 2004 financials were it- what happened during the next four years was pure momentum into which lenders also got sucked into.

The leverage at General Growth Properties kept increasing over the next few years. By December 2008, total debt of about $25 billion was supported by $27.5 billion in assets. Clearly doomsday was around the corner- the freeze in the credit markets during the winter of 2008 merely hastened matters. During the last quarter of 2008, when General Growth was already defaulting on repayments, the company started cost reduction programs and sale of certain non-mall assets. There was little the management could do in an environment in which the credit markets and real estate markets were hostile. The game was up in 2004- what happened next was merely the employees of the REIT transferring wealth from shareholders and creditors to themselves.

The lessons for lenders in the real estate based lending business are a) the leverage should be tolerable so that the whole edifice does not come crashing down. When market liquidity is tight, credit will be taken away from leveraged institutions and from institutions which do a poor job of communicating and disclosing their risk b) the ratio of real estate earnings minus fixed real estate operating expenses to interest payouts must be tolerable so that the structure does not collapse if vacancy rates rise to 20%. Also, it is practically essential that the interest rates of the loans be fixed rate so that the interest coverage ratios can be calculated without looking at the external environment.

**Valuation of Exposures to Commercial Mortgage Backed Securities (CMBS)**

The commercial mortgage backed securities (CMBS) market always worked on fragile assumptions, particularly for the junior tranches. Critical to evaluation of the credit quality of a
tranche is property valuation and extent of subordination of the tranche in question. For instance, a CMBS tranche which has 20% of the face value of the underlying loans junior to it (and if only loans were used to buy the properties), has a 20% cushion for fall in value of the collateral properties before the tranche ceases to have full asset cover. There is a big difference if the loans backing the tranche were made in a real estate bull market or a bear market. If the properties were acquired at the height of a bull market, the 20% cushion can get quickly wiped out when real estate prices correct. Additional risk in the CMBS structure comes from difference between the maturity of the underlying loans and the CMBS securities issued backed by those loans. The assumption is that this maturity mismatch can be taken care by issue of new CMBS securities to pay off the old CMBS. If refinancing cannot happen, asset sales would have to be resorted to, which is usually difficult without taking a haircut in an environment in which refinancing is hard. In summary, from a CMBS tranche valuation point of view, the creditor can value the tranche at face value provided there is adequate cushion for fall in real estate prices. What is an adequate cushion depends on where one is on the real estate cycle and where societal debt ratios are headed.

Between 2005 and 2007, S&P merrily assigned AAA and other high ratings to CMBS transactions. CMBS delinquencies in the United States were 0.27% in March 2007. Towards the end of 2009, the percentage had risen to 4.5%, and the peak in delinquencies is at least a few years away. S&P’s methodology for rating CMBS assumed that refinancing can easily be done- it ignored the maturity mismatches and interest rate mismatches (and even currency mismatches) between the original commercial property loans and the CMBS issued secured by those loans. True, there were some hedges in place, but these were of questionable value. S&P also ignored the dangers of rising real estate prices in the backdrop of ever increasing societal debt ratio.

Suddenly, in April 2008, S&P implicitly declared that it had overrated the CMBS sector and
placed 40% of the AAA ratings assigned in 2005, 70% assigned in 2006 and 90% assigned in 2007 under watch for possible downgrade. It was hardly surprising that a far bigger chunk of issues rated in 2007 were at risk than those rated in 2005, because the real estate bubble had inflated further. 100% of issued assigned a single B rating between 2005 and 2007 were listed for possible downgrade. The agency made a jackass of itself in July 2009. On the 14th, S&P downgraded some CMBS issues originated by Goldman Sachs, Credit Suisse and others – some as drastically as from triple-A to junk. Within a week, the agency reinstated many ratings back to triple-A on the back of a “revised methodology”. We wonder where the pressure came from. Fitch, after rapidly downgrading several issues, said there was nothing wrong with its methodology causing one commentator to remark that Fitch was eager to claim the title of CMBS court jester from S&P.

**Text Box: The REIT Business and Lenders’ proper role in REITs**

A real estate investment trust (REIT) is a company that manages income generating real estate. An investor in a REIT can participate in the risks and rewards of the real estate business just like an investor in any company participates in that industry. Income is realized through lease rentals and sale of property, hopefully at a profit. In many countries, REITS are exempt from income tax provided they invest a certain percentage of their funds in real estate, draw a certain percentage of revenue from that business and agree to a high dividend payout ratio. Because REITS are run to advance the interests of the REIT shareholders, often REITs borrow money so as to increase shareholder returns. Most REIT investors are institutions such as pension funds and endowments.

REITS are of three types- equity REITs which own and operate real estate; mortgage REITs which make loans against assets secured by real estate and hybrid REITs which have characteristics of
equity REITs and mortgage REITs. Creditors to REITs should be aware of the different structure of REITs because that determines their recovery if a REIT runs into trouble. A traditional REIT owns its assets directly through an operating partnership. An Umbrella REIT is one where properties are held by different property partnerships. This facilitates the participation of individuals or companies that own land but give it to the REIT for development in return for shares of the REIT. A Down REIT is a structure which combines features of the Traditional REIT and the Umbrella REIT.

Most REITs invest in commercial real estate property such as hotels, health care property, retail facilities such as malls, office spaces etc. As with any asset class, returns are determined by the entry price and the state of the real estate market at exit.

Creditors should remember that REITs have very little retained earnings on account of the requirement of high dividend payouts. So, the credit analyst has to rely on the valuation of the properties (the analyst must check and see that there are no overstated values). Also, earnings of REITs can drastically fall in value whenever the economy tanks and real estate vacancies rise. And, if too many variable interest rate loans are present in the REIT capital structure, it increases the likelihood of problems with debt servicing. The creditor also has to pay close attention to the asset management company that manages the REIT, its tendency to over-expense, the incentive structure for employees and the performance agreements. REITs may borrow non-recourse-recourse only to the property which is funded or full recourse. The creditor should not draw too much comfort from the NAV quoted, particularly when a credit funded real estate bubble is underway.
Project Finance Loans

It was discussed in chapter 1 that lending to one off projects is a venture, which lenders should participate in at their own peril. We are not talking here about new projects executed by a strong company, the size of whose assets are much larger than the project to be executed and with the company in question having a strong balance sheet.

The following are the project loans which can be financed by debt and whose value we would consider equal to their face value:

- Government infrastructure projects with a strong sovereign backing in the event of project failure
- Loans to loss making state owned entities for executing projects based on the expectation of sovereign bail out
- Full recourse loan to a corporate for executing an expansion project
- Full recourse loan to a corporate for executing a new project, based on the clear understanding that the corporate should not have problem servicing debt if the project does not pan out as planned
- Non recourse loans to a corporation for executing projects (not one off project) with strong contracts with credit worthy entities for construction, operation and maintenance, off take of goods produced by the project at a certain fixed price for a certain volume (say a power purchase agreement with a creditworthy utility, which agrees, during the tenancy of the loan, to purchase daily a certain number of units of power at a fixed price).
China’s ICBC- Creditors’ delight, Shareholders’ agony

The Industrial and Commercial Bank of China Ltd. (ICBC) was founded in 1984. Historically, the bank has had a high level of NPAs- chiefly on account of loans to loss making state owned enterprises. In 2006 the bank had its IPO and it became the bank with the highest market capitalization in the world.

In China, creditors to banks can breathe easy- most of the loans have been made to loss making State Owned Enterprises (SOEs), but the state always ensures that the bank does not have solvency problems by infusing capital periodically for write downs. Why shareholders (particularly international ones) participate in the charade called Chinese banking is an abiding mystery unless they are playing the game “passing the parcel” and expect a greater fool to be always around the corner to off-take their shareholding.

ICBC, per its 2008 annual report, had some pretty impressive statistics- 3.1 million corporate banking clients and 190 million personal banking customers. For some uncertain reason, Moody’s has rated this bank two notches higher than S&P. In 2006, S&P rated the bank BBB+ while Moody’s rated it A2. In 2008, S&P rated it A- while Moody’s rated it A1. Perhaps it is due to their “Joint Default Analysis” methodology wherein expectation of state support in the event of distress is accorded due weight age. Hence Moody’s assigned ICBC the same credit rating as the People’s Republic of China. Moody’s methodology is the right one, particularly where large institutions in China are concerned. What can puzzle one is why Moody’s does not carry its reasoning forward and assess the impact on sovereign rating from such a bailout. Rating of the banking system (systemically important banks) and the sovereign rating are closely intertwined.

If a banking system is indulging in foolish speculation or lending to non viable entities/projects as directed by the state, the credit analyst should first add the expected quanta of resources
required for the bailout to the sovereign’s debt before assigning the sovereign its rating. Then all the top banks of the country should be assigned the same rating as the sovereign. It does not matter if the leading banks are owned by the state or are privately owned. One should use this principle only for senior debt and not for debt capital instruments of banks.

ICBC has a very healthy Loan to Deposit Ratio, unlike its western counterparts. At the end of 2008, the ratio was 56.4%. Very high loan to deposit ratio implies excessive reliance on the wholesale funding market for short term liabilities. Loans to the top 10 customers were 20.4% of total loans in 2008 (they constituted 21.7% of total loans in 2006). Normally, such concentration would be a cause for intense concern, since if these loans turn bad, the capital base can be severely impacted. In the case of ICBC, the loans were to SoEs, so that mitigates the risk.

At the end of 2008, 52% of the loan book comprised of project loans. The nature of the project loans was not too much of an issue- most had indirect sovereign linkage. What is of concern is that 10.6% of the loans were for property development- China’s property markets were red hot when the loans were made.

Net investment in securities was 31.2% of the bank’s assets at the end of 2008. The investment book was really solid- government securities constituted 20.5%, policy bank loans 29.1%, central bank bills 38.6% and other bonds constituted 11.8%. Cash and balance with the central bank was 17.4% of total assets. The bank had a very negligible exposure to the US sub-prime market.

Clearly, from a credit viewpoint, this was a solid bank. Most of the assets have the long shadow of the state engulfing it in a warm embrace, thus lending it comfort and credit standing. But will shareholders ever make money out of this bank? Other than taking advantage of periodic ramp
up of share prices, over the long term returns from this bank and most Chinese banks will prove more fruitful in the realm of hope than reason and actuality.

**Leveraged Loan Valuation**

M&A financing seldom make sense, particularly those deals which require the application of tons of debt and which are secured by shares of the acquired company. We would adopt a two stage valuation process for valuing the loans. Obviously, one can’t value the loans, loan by loan, but consider the valuation of the biggest three or four such loans and use the same scaling factor for the other loans in the portfolio. Firstly, we would remove the takeover premium from the purchase price and arrive at the adjusted value without the premium. Next we would calculate the ratio of the loans for the takeover to the adjusted value. If this ratio is greater than 85%, we would value the loan at LGD, because at that elevated ratio, it is no longer a credit instrument one in valuing. If the ratio is less than 60%, we would consider the full face value of the loan. In between these two, we would apply a sliding scale. Obviously, the percentages, 60% and 85%, are not sacrosanct- judgment, as always, has to be used to determine the apt values depending on where one is on the credit cycle.

The perils of LBO financing were best revealed by the fate of KKR Financial Holdings, the debt financing arm of private equity shop KKR. In March 2009, the company reported a loss of $1.2 billion, mainly on account of write down in value of loans provided for LBO transactions- mostly transactions where KKR was the firm doing the buyout. During that quarter, the company wrote down 80% of the value of the loan provided for the takeover of semiconductor company NXP and 88% of the value of the loan for the Capmark Financial acquisition. The company had also financed the takeovers of newspaper company Tribune and chemical company Lyondellbasell, both of which subsequently filed for bankruptcy.
At the height of the LBO boom in 2007, KKR bought payment processing firm First Data for $28 billion. The company paid a 26% premium to an already elevated share prices. The takeover was financed by a consortium of banks lead by Citigroup, all salivating at the $600 million of fees the deal generated. However, by the time the deal closed in the autumn of 2007, credit markets had soured. The banks sold the loans at a loss or wrote down their values. KKR Financial also provided loans for the deal.

**Valuation of Retail Loans**

Retail loans can be unsecured like credit card and personal loans or secured such as car loans and home loans. From a valuation standpoint, except during periods of very high household debt, delinquencies tend to be fairly stable. And if those delinquencies have been priced into the loan, the value of the loans is the same as book value. In times of high household debt, one needs to clearly separate out the valuation of unsecured and secured debt portions of the retail loan portfolio.

**Credit Card and Consumer Loan Portfolio**

There is no easy way of mass producing retail loans through a risk score such as the FICO score. The old fashioned way of a banker examining salary slips and bank accounts is the only way out. Let us say a bank relies on FICO scores for apportioning credit cards and consumer loans to retail borrowers. If the quantum of such loans is small, the credit analyst can ignore those loans and look at other parts of the asset side of the bank’s balance sheet. What if the amount of such loans is a large portion of total assets? In that case, unlike a rating analyst who would assume all is hunky dory, a credit analyst must declare that he does not have the requisite information for valuing the loans and hence not in a position to judge credit quality. But is not the default data over the last business cycle an adequate starting point to estimate the likely losses over a
cycle from the credit card portfolio? Yes, the data from the previous cycle would be useful if you had used a driver of credit quality to apportion credit during the previous cycle. For instance, if the bank had a particular salary threshold for giving a certain amount of unsecured/semi-secured (consumer loan), and it follows the same criteria all along, one would get roughly the same default experience—magnified or diminished by the extent of the current down turn in comparison to the previous down turn. The whole principle breaks down when credit was handed out, not based on the drivers of credit quality (we explain in chapter 10 why the FICO score is not based on causality of credit quality). Then one cannot predict delinquency experience based on past data. For analytical purposes, one is better off using economy wide data rather than try to extrapolate based on past data, if flawed methodologies for assessing credit risk had been employed in the past.

One suitable proxy data for assessing the quality of credit card and consumer loan portfolio and hence the valuation of the portfolio is the household debt to GDP ratio. One might argue that the unemployment rate in an economy would also serve as a proxy, but we argue that the unemployment rate is a lagging indicator and there would not be too much time to react to take corrective measures on the portfolio and for giving out fresh loans. If one sees household debt to GDP climbing precipitously in the previous few years, one can foresee impairment in credit quality of the portfolio round the corner. The same would be true about secured loans such as residential mortgages and car loans—but the impact is dimmed considerably by the borrower’s equity in the asset. If household debt is under control, one can assume that the portfolio carried at fair value is the correct value (from the creditor standpoint).
Credit Cards and the Capital One Story

Capital One Financial Corporation is going to be one of the most impacted credits in the United States as the country adjusts to the new normal of lower household debt, increased savings, lower consumption and more prudent household behavior all around.

Capital One is a big credit card issuer- in 2009 the company was the fourth largest issuer of Visa and Master Cards in the United States. This unsecured loan book was a wonderful high yielding asset as consumers rolled over their monthly payments by paying only the minimum amount due. No body raised a question on the quality of the borrower who chose to keep a high cost loan outstanding instead of paying it off in full at the end of the month. Perhaps, neither was Capital One, as it kept securitizing receivables of its credit card portfolio. The institution did retain risk in the portfolio but when income was poring in and delinquencies were low (unemployment rate was very low in the US during the credit/construction boom years and customers could tap their home for home equity loans). The more consumers consumed, the higher the income for Capital One.

Capital One’s reliance on securitization (something that has to come down in the new normal), meant that the company could have a credit deposit ratio of 135%. A credit deposit ratio higher than 70% exposes a company to fluctuations in the wholesale credit markets. The bank’s overall credit deposit ratio has only one direction to go- southwards. That is one reason that profits will take a severe beating in the long run. In the short run, thanks to low interest rates, the cost of funding is artificially low.

During the first two quarters of 2009, the financial institution did take a net charge-off of $2 billion per quarter. The percentage of non performing credit cards rose to 9.5%. The charge-offs were not only from its credit card portfolio, but also from its consumer loan, small business
loan and auto loan portfolios. Loans to consumers were $62 billion at the end of 2008 out of total loans of $101 billion- not a sweet spot when one considered the fact that the consumer was going to retrench in a big way. The only way the company can change its bleak story is by changing its business model- always a risky thing for creditors.

Valuation of Residential Mortgage Portfolios

Mortgage portfolios need to be separated between conventional mortgages (fixed or floating rate loans with a down payment by the borrower of at least 15% and hence a loan to value (LTV) of not more than 85%) and unconventional mortgages which includes all mortgages that do not fall in the conventional category. Unlike many countries, in several states of the United States, residential mortgages have a non recourse flavor- that is, should the borrower default, the lender does not have any recourse to the other assets of the borrower.

Conventional Residential Mortgages

The most suitable mortgage product, for all concerned- borrowers, lenders and even governments – is the conventional long dated fixed rate levelized mortgage with a sizeable down payment. The down payment must be made from savings and not through borrowings from a second lien loan. Then the lender is assured of a few facts. Firstly, he knows that the borrower does have a tendency to savings and not reckless and insatiable consumption. The down payment serves more to judge character than assuring the lender of a lower LTV loan and concomitant cushion against fall in value of the home.

Secondly, because the monthly installment is fixed through the tenure of the loan, the lender can assess the size of the monthly payout vis-à-vis the borrower’s monthly income. The borrower might be out of a job for a few months due to factors beyond his control such as layoffs etc. Because the down payment assures that the borrower is not a deadbeat, the
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lender can be reasonably sure that the borrower will be employed in a few months. The moment such an unforeseen event such as a job loss occurs, the lender should help out the borrower, in the sound knowledge that his money is ultimately safe. In countries where unemployment benefits are substantial, the lender can insist on monthly interest payments but stop the amortization of principal. That freezes the principal outstanding on the loan. Once the borrower gets employed again, the new equated monthly installment can be worked out through a combination of increasing loan tenure and increasing monthly payment (if it does not put undue pressure on the borrower). In countries without unemployment benefits, the lender should freeze all payment requirements and add the interest accrued to the principal outstanding. Individuals in such countries tend to be more aggressive in their job search efforts. Once the borrower is re-employed the monthly payments and tenure can be reworked as earlier.

For all loans with an LTV of less than 80%, regulators must show more wisdom in how these otherwise sound loans should be shown on the books of the lenders if there is a temporary non-conformance to loan repayment conditions. In countries where interest can be serviced out of unemployment benefits, such loans should not be classified as non-performing, provided interest is being serviced, for a period up to 1 year. In other countries, the loan should not be classified as non-performing as long as the lender has a process for checking delinquent borrowers to see if they are making an honest attempt to get re-employed and have not cast their burdens, on a permanent basis, on long suffering relatives or the state. Of course, a lender could always get the borrower to take out unemployment insurance when he sanctioned the loan, or he could provide such a cover to the borrower through suitable pricing of the loan.

Merely because regulators are smart enough to understand the simple mortgage product, they should not over regulate this sound market and products for non-performing loan categorization as well as capital adequacy standards. Regulators should worry only if this sound mortgage
product mutates into something virulent (such as zero down payment loans, negative amortization loans etc). Else, the regulators’ time could be more productively spent in trying (and perhaps occasionally succeeding) in understanding the “weapons of mass destruction” in the banks’ trading books. Anyway, creditors (and shareholders) who rely exclusively on the thesis that regulators know what is going on have only themselves to blame for taking their eye of the ball and the ball knocks their outstanding principal off. One is not dismissing the need for common sense based regulations but the theory that bureaucratic institutions can keep an eye on slicker individuals through elaborate dos and don’ts can work only in the inner recess of Alice’s wonderland. So, instead of relying on pointless agencies which merely lull everyone into a fall sense of security, it is the role of creditors to keep bank management honest through ceaseless vigilance and covenants in loan agreements.

A risk that lenders must factor in is the death of the borrower when a home loan is outstanding. Of course the lenders, particularly in low LTV loans would be able to recover their principal through foreclosure- but that is not a good idea. Besides the fact that it can be a bit repugnant to put the family of an honest borrower onto the streets, it does not serve to enhance the franchise value of the lender. It is far better that lenders have an insurance cover for such an eventuality and price this in the loan. Or, the lenders could get the borrower to get the insurance done separately.

How does a lender to a bank value the conventional mortgage portfolio? It is safe for the creditor to assume that the value shown in the balance sheet represents a true and fair view of portfolio value. The only things that should worry a lender are if the portfolio grows too rapidly of if there has been a relaxation of loan underwriting standards.
Valuing Pools of unconventional Mortgages

Any mortgage product which has zero down payment should be valued very cautiously and the valuation depends on where one is in the property cycle. If property prices are on a downward trend for more than the past two years, or are on an uptrend for less than two years, one can expect a high level of recovery in case the loan defaults. Based on the understanding that in a zero down payment loan the overwhelming reliance is on LGD, if the loans are made in the 2 year down to two year up period (remember this period is usually more than four years because after a down cycle, there can be an extended period when property prices do not move), as in the case of conventional mortgages, one can assume that the carrying value is a reasonable value for a creditor to assume. Valuation of zero down payment loans made in the up cycle two years after the commencement of an up cycle can be assumed at home values two years after the up cycle commenced.

Negative amortization loans should be valued at the point in time when the loans were given. For all subsequent periods, one ignores accumulated interest in the valuation. The subsequent increase in outstanding principal of the loan should be deducted from shareholders’ equity. At the point of grant of the loan, the loan should be valued like a zero down payment loan.

Buy to Let Loans and the end of Bradford & Bingley

Bradford & Bingley (B&B), the UK based financial services provider, was set up in 1851 as a building society focused on mortgages. B&B was the UK’s biggest buy to let mortgage lender. It was also a big player in the UK’s “self-cert” mortgage market where the borrower certifies his own income without producing documentary proof. The self-congratulatory 2007 annual report was a case study of pride and ignorance going before the downfall.
The buy to let mortgage product is one where a homeowner buys a house with a mortgage and with the express purpose of letting it out on rent. The income required to cover mortgage payments was derived from the rent generated from the property rather than from the borrower’s salary/income. Like the US sub-prime mortgage where the lender relied on rising home prices rather than borrower income, the UK buy to let loan relied on property rentals rather than borrower profile. If interest rates went up, requiring higher monthly payments on the loan or rentals fell, the edifice of the loan would collapse. The driver of the buy to let market was the private rental sector. The argument justifying the product was that a growth in population and reduction in average household size would cause a perpetual growth in rentals.

In its 2007 annual report, the institution described self-cert loans as lending to customers “with non standard employment,” whatever that meant. The director’s report was convinced that this was an attractive product.

Besides this exotic loan book, B&B also had a weird investment book. It held £125 million in SIVs, of which £64.2 million were impaired. It held £140 million investments in CDOs of which £30.2 million were impaired. Clearly, this was a management hell bent on doing foolish things, not mitigated by anything that could be explained rationally.

All seemed hunky dory in 2007, if you looked only at the income statement. The cost to income ratio had plunged from 60.7% in 2004 to 42.8% in 2007. The net interest margin at 1.1% in 2007 was not much lower than the 1.26% in 2004. The return on equity had jumped from 16.1% in 2004 to 19.1% in 2007. Superficially, the loan portfolio looked good- the average LTV of the portfolio was only 55%. Buy to Let loans constituted 45% of the total loans while self-cert loans were 16%. Average loans in arrears during 2007 were only 1.63% of the total book. In 2008, the UK economy wobbled, the rentals were dropping and the amateur buy to let landlords and self
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certified borrowers were experiencing financial difficulties. By June 2009, 5% of the total loans were defaulting. Hard equity at the end of 2007 in B&B’s books was only £1.2 billion. At the end of 2007, the residential mortgage portfolio was £39.4 billion. So, when 5% of the loans defaulted, the foolish game was up.

Handling of Venture Loans

In the very first chapter, it was stated that it is not the creditor’s business to get into venturesome activities. Loans for ventures, not guaranteed by creditworthy entities are venturesome activities. If the loans are unsecured or collateralized by shares of the entity lent to, the value of the loans needs to be assumed to be zero, for credit analysis. Secured loans should be valued at recovery values of the assets securing the loan.

Analyzing the Trading Book

Running a trading book is like running a venture, with negligible certainty of outcome. It is crazy for lenders, who shriek with horror at lending to a corporation at debt to capital ratios beyond 2, to merrily participate in financing trading pursuits at gearing ratios greater than 20. The assumption that trading book assets will not lose substantial value in the short time that they are held in the books, when backed by strong risk management systems and processes, has not been borne by facts and past events. The hope of the lender is, should the assets lose value, the bank can always pay up margin calls from government guaranteed deposits. Trading is a zero sum game— for every smart guy making money in a trade, there is a smart guy who lost an equal amount (some argue that for every moron making money on a trade, there is a moron who lost money— you take your pick). That is, unless the trading asset is a Level 3 asset/liability when both the entities can merrily show a profit aided and abetted by the valuation models of the two entities. In fact, as an extension of this argument, governments should invest in level 3
assets with both the counterparties and create value rather than invest in R&D labs and funding of universities.

The only trading a creditor should encourage is trading backed by inside information (where it is no longer a venture). Alas that is illegal – so the creditor has to do the next best thing- keeping away from trading all together. The only conditions under which trading is tolerable to the creditor is if the size of the trading book is a small fraction of shareholder’s equity, which can be written off without causing too much collateral damage.

**Derivatives – Assets, Liabilities and Trading**

Derivative instruments are held at fair value in the asset and liability sides of a balance sheet with marked to market profit and losses recognized through the income statement. The problem is that unless the derivative instruments are exchange traded, one needs to know the credit risk emanating from the marked to market profit in a contract with a counterparty. And, the credit analyst needs not only current value of the assets and liabilities and the current financial strength of the counterparties but also how the change in the value of assets and liabilities can impact the credit quality of the counterparties. Looking at VaR (see Text Box: A Horse called VaR) as a measure of how derivative asset and liability values can move in future is less than useless.

The truth is that financial institutions having a debt equity ratio beyond 8 (at least as far as the trading book is concerned) just do not have a credit story, irrespective of the risk weights of those assets and associated capital adequacy. A bank might proudly state that its Tier I capital adequacy is 12%, but that can horribly misstate the capital requirements by underestimating counterparty credit risk and rapidity of change in market values of assets. So, if a financial institution has a debt equity ratio beyond 8 for its trading book (so called capital instruments
such as hybrid Tier I and Tier II debt should be counted with debt), there is inadequate cushion available for creditors and such an institution should be outright rejected by credit counterparties. The argument that by that metric, many big financial institutions would be unsuitable for credit financing is neither here nor there.

For a traditional home loan, it is said that any loan with an LTV beyond 80% is imprudent. A variation of that metric has to be applied by lenders to the bank itself. Just like home loan borrowers with very little equity in the game are not suitable for credit, banks with debt equity ratios beyond 10 on the lending book and beyond 8 on the trading book do not afford creditors any cushion for things going wrong. The trading book requires lower debt equity ratios because in addition to credit risk that it shares with the lending book, it also has market risk emanating from the fall in the fair value of an asset or increase in the fair value of a liability.

Let us say a bank has a debt equity ratio of below 8 on its trading book. Should the analyst declare that all is well and there are no risks from the trading portfolio? No, it merely means that the bank is not foolishly leveraged, but not necessarily bankable. Obviously it is impossible for a creditor to value each derivative contract that the bank takes on because he cannot know the details of each contract and associated counterparty. There is no alternative to relying on fair value valuation, provided the quanta of Level 2 and Level 3 assets are small. Banks with high level of Level 3 assets on their trading book are simply unbankable.

How about assets that cannot be valued based on market prices but are valued based on “valuation techniques” as IAS 39 euphemistically refers to them? Credit analysts would do well to ascribe a value of zero to assets that are valued based on some model unless they have been provided considerable details on the asset and they can approximately value the asset based on common sense considerations (for instance, we would value the third to default tranche of a
CDO using common sense methods (as discussed in Chapter 10) rather than so called correlation models, which can permit both counterparties to a derivative contract to carry a contract at a profit on their books) and own risk tolerance.

Likewise for Level 3 assets, classified thus using SFAS 157 : Fair Value Measurements, unless a great deal of detail is available, it is optimistic to ascribe a positive value to the asset (in fact, for all you know, what has been presented as an asset might actually be a liability). Following the crowd, because everyone else is dealing with such counterparties is foolish. Had it not been for the US government bailout of entities such as AIG, several counterparties holding a high level of Level 3 assets, or counterparties with high level of Level 3 assets would have gone to Hades. Creditors should not expect a similar outcome next time because debt levels of the US and European governments are hitting unmanageable levels. Also tax payers are increasingly hostile to frivolous use of their money under the questionable thesis that banks cannot be allowed to fail like manufacturing companies.

**Was Deutsche Bank an investment Grade Risk in 2009?**

On December 31st 2007, Deutsche Bank had loans carried at € 198.9 billion on its balance sheet. Its net trading assets amounted to €441.4 billion. Its deposits were to € 457.9 billion. In short, the depositors’ money was recklessly being used for trading purposes. In the winter of 2007, any resemblance between Deutsche Bank and a bank was purely coincidental. If you removed the deposits from the liability side of the balance sheet, the set-up was no different from a hedge fund. Why this did not shock German banking regulators is beyond any thoughtful analyst. German politicians have a disdain for hedge funds and private equity funds using colorful phrases such as “locusts” while referring to them. However, they were not perturbed
that a hedge fund was using funds from their country’s depositors to speculate on exotic derivatives.

Rating agencies, wholly immune from frailties such as irritating a good fee paying client, thought it fit to ignore what was going on in the trading book, choosing to soothe themselves and the world with statements on how good the risk management systems were and how the VaR (refer to Text Box: A Horse Called VaR) was extremely tolerable. In fact, in May 2007, Moody’s upgraded Deutsche’s senior unsecured rating to Aa1. In August, preferring to be a bit more cautious, S&P upgraded Deutsche Bank from AA- to AA. The outlook was stable, which S&P said meant that additional rating change was not anticipated in the next one or two years. In August 2008, after Deutsche announced a massive write down of assets, S&P downgraded its credit rating to AA-. For the edification of S&P, the role of an analytical agency is to predict the likelihood of write downs, not to announce credit downgrades after a bank announces write downs.

In December 2008, after having been downgraded to A+ by S&P, Deutsche’s balance sheet was actually looking better. True, the asset quality of its loan book, particularly of its leveraged loan portfolio was deteriorating rapidly. Deutsche Bank had loans with a face value of € 269.3 billion on its balance sheet. Its net trading assets amounted to € 222 billion. Its deposits amounted to € 395 billion. So, if any downgrade was to have been done, it should have been in 2007. Instead, there were rating upgrades. To get a feel of the size of the trading book, Deutsche’s shareholder equity at the end of December 2008 was €30.7 billion.

Now Deutsche Bank might claim that they have superhuman trading prowess. Even if it does have the best trading team (if such a beast does exist), what is there in it for the creditor? The most alarming statements in the 2008 annual report, pertaining chiefly to the trading book, was
“in reaching estimates of fair value management judgment needs to be exercised. ...The specialist model validation and valuation groups focus attention on the key areas of subjectivity and judgment”. These statements should be the cue to the creditor to log out. To the creditor, that implies that most of the assets could be unspeakable junk, whose values are what management wishes them to be. For roughly €87 billion of financial assets held at fair value (whatever that meant in that context) the management confessed it did not even have from the market the value of the underlying driver of the contract, much less the value of the contract. For example, if a bank had an option to buy the Zimbabwean dollar, how does one price that option, when even the value of the Zimbabwean currency was not available in the market? Does one use the black market value? Does one use the grey market value? Or is it best to use a value assigned to it by a management model, management whose bonus depends on that value? Go figure that out. After all, one moment Merrill Lynch was carrying $31 billion of mortgages in an investment portfolio (the rating agencies went merrily with that valuation), the next moment the portfolio was sold to investment fund Lone Star for 22 cents to the dollar. Not only that, but Merrill provided financing for 75% of the purchase price- implying that the true sale price was much lower than 22 cents to the dollar.

It would not be surprising if Deutsche’s counterparties to derivative transactions also think, thanks to the models their managements fiddle with, they are in the money to the same extent that Deutsche is. Alas, trading is a zero sum game and not a pursuit where value is created. In fact, for the shareholders and creditors of both counterparties, it is a negative sum game, thanks to trader entropy (bonuses and other paraphernalia incurred before the actual returns are known). So, it is not possible for both counterparties to be in the money. The only way a semblance of realism can be arrived at is if the auditor gets to see both legs of the transaction. Or, if the auditors of the two firms can have a short chat over the telephone. However, it is not
in the interest of either counterparty to display such vulgar transparency. In this world of fearful uncertainty, where values of assets are ascribed based on wishful management thinking, where credit analysts would fear to tread, rush the rating agencies to give their 2 cents of opinion and collect their million dollar fees. The CDS market of course had a vastly different view on Deutsche Bank’s credit quality at the end of 2009. Granted CDS markets overprice risk during times of turmoil- but Deutsche bonds should definitely not have been in the portfolio of a widow or a orphan or anyone else who wanted his money back with reasonable certainty.

**Prime Brokerage- Lending for Trading is worse than Proprietary Trading itself**

A prime broker provides a centralized securities clearing facility for hedge funds. The hedge funds’ collateral requirements are netted across deals handled by the broker. A prime broker, who is usually a commercial bank or an investment bank, also provides financing by taking the hedge fund assets as collateral. And he collects a brokerage whenever the hedge buys and sells assets.

The prime brokerage business should definitely be carried out of a bank’s equity. The merit of the prime brokerage business depends on how much brokerage the business generates- not from how much net interest income is generated from lending to the hedge funds. The credit analyst should subtract the following amount from the bank’s capital in his analysis –

Amount to be deducted from capital = Loans to hedge funds- estimated brokerage income from prime brokerage

50% of this amount should be deducted from Tier I capital and 50% from Tier II. Prime brokers analyze the risk of their financing positions using VAR and we know that’s not the smartest thing to do.
In fact, a credit analyst should be more favorably inclined to proprietary trading than prime brokerage. At least in proprietary trading, there is as much potential for upside as there is for downside. The risks and rewards are more skewed in the case of loans to hedge funds. Even the brokerage income generated without deploying capital does not compensate for this. In addition, there is the possibility of double leverage from the prime brokerage business through re-pledging of client assets to secure funding.

**Text Box: a Horse called VaR**

VaR, as Value at Risk is affectionately referred to by its practitioners, is a measure of how much money a trading institution can loose. VaR is quoted in terms of two parameters- time period over which the losses can occur and a probability fraction with which you state that trading losses in the time period will not exceed that amount. For instance, if a bank states that its 10-day 99% VAR is $100 million, the bank, from its internal models, is estimating that 99% of the time, an adverse change in its trading portfolio will not result in losses more than $100 million in a 10 day period. You could also have a 1 day 99.99% VAR or other variations.

Anyone who lived through 2007 and 2008 would have empirically known that VaR’s claims were bogus. We will not go into bank CEOs making statements to their gullible stakeholders (perhaps they were fooling themselves too) regarding VaR of their trading books. These CEOs were later to prove to be embarrassments to themselves and to the institutions they headed. What we, as credit analysts (or equity analysts who want the truth and not those who want to do a short-term pumping up of a stock), would need to ascertain is whether the theoretical underpinnings of VaR are justified and if yes, can the weaknesses noticed empirically over the last few years be rectified through tweaking.
Engineers who build airplanes and nuclear reactors deal with complex and intractable equations, those that in the years prior to cheap computing could not be readily solved. The engineer had to make those equations more tractable- so he made simplifying assumptions. One must remember a few things here- firstly the engineer was dealing with the unchanging laws of nature- the relationship between the left hand side and the right hand side of a physics equation can be split asunder, like Moses parting the Red Sea, only under divine intervention. Secondly, when the engineer ignores terms of equations to make the equation solvable, he knows exactly the order of magnitude of the terms he is ignoring. Only when a person solving an equation knows the order of magnitude of the terms he is ignoring, he can tweak the final results by multiplying his findings with a factor for safety. If he was multiplying his findings with a factor of safety without a clear and timeless understanding (i.e. the magnitude of the assumptions made doesn’t change with time) of the impact of the assumptions made, an airplane thus built will be flying less on a wing and more on a prayer.

To calculate VaR of a trading book, the bank first establishes the relationship between the value of an asset and a driver of value such as interest rates, exchange rates etc. Now, this relationship does not change. So, if the value of a 10 year zero coupon government security held in the portfolio is worth $100 today when the 10 year rate is 8%, he can calculate what the value of the asset would be if the rate changes to 8.1%. Also, if the portfolio has a call option on Euros to be settled in US Dollars, a bank can estimate is value today. But an analyst is not only interested in the value of the two assets today. A financial analyst would be interested in knowing the worst case drop in value of the two assets over a particular time period. What is the likelihood that the ten year interest rates would rise to 8.3% in 10 days? What would be the likelihood of the Euro/USD exchange rates moving to a particular level in that period? And most important, what is the correlation in the movement of the 10 year rates and the exchange
rates between Euros and USD. Alas, while the relationship between the movements in the value of the 10 year bond with 10 year rates is invariant, the movement in the 10 year rates is not governed by immutable laws. Likewise, while one can estimate the value of the call option in response to currency movements, the movement in the exchange rate does not move in an immutable manner like the laws of gravitation or electromagnetism. And the correlation between the two underlying (the 10 year rate and the exchange rate) factors never stays constant.

To get around the fact that the value of exchange rate and the 10 year rate tomorrow is an unknown today, the VaR methodology ascribes a probability distribution for the exchange rate and the 10 year rate based on past volatility of such values and based on past correlation between the two parameters. There is no underlying reason why the parameters should follow the chosen distribution even if they did in the past (which actually they would not have). The distribution was chosen based on ease of computation- not because it reflected the underlying phenomenon. Worst of all, there is no earthly reason why the correlation between interest rates and exchange rates should have the same value as in the past. Exchange rate changes would reflect deep structural relationships between two economies- which drastically changes with time.

The absurdity of the VaR framework is evident even when one uses only two parameters. In the real world, a bank would consider correlations among several parameters such as several exchange rates, commodity prices, and interest rates. That compounds the absurdity. In April 2008, S&P finally came to the conclusion that the losses posted by banks in 2007 and 2008 were much higher than what could be explained by VaR. As usual, they came up with the wrong thesis- “VaR is not a measure of losses in times of stress but rather of large losses under normal trading conditions”. VaR does not work because the building blocks do not reflect the
underlying phenomenon of movement in market prices, a phenomenon which unlike the laws of physics is not uninfringeable. So what does S&P do- they decided to scale up regulatory VaR capital by a factor of 3 to reflect “fat tail” outlying risks and other risks. Remember, when the engineer did a scaling up using a factor of safety, he understood the dynamics of the underlying phenomenon and he knew the bounds of error of his model in reflecting the underlying phenomenon. Neither is true for financial markets. So applying a factor merely compounds the absurdity called VaR. In 2008, the Goldman Sachs CEO referred to several days of 25 σ happenings, when even a single day should not occur if the modeling had any resemblance to reality. The terrible truth was that emperor VaR had no clothes on.

VaR, in short, was, is and never will be ready for prime time and needs to be junked- at least by credit analysts. But academically discredited techniques such as technical analysis still survive, and even create a bit of self fulfilling prophecy in the short run. Astrology has survived thousands of years by masquerading as a science. Sensible people know that just because an astrologer gazes at stars like an astronomer, it does not make astrology less of a mumbo jumbo. Sensible financial analysts know that just because VaR uses techniques from mathematics and physics, it does not make it less gibberish. Only in the climate controlled environment described by quantitative finance did VaR ever make sense. To raise VaR to an elevated status in a bank’s risk management pantheon is no different from Roman emperor Caligula elevating his horse to a consul.

**Valuation of a Bank’s Investment Book**

Fixed income instruments in a bank’s investment book need to be valued exactly like the way one values loans. Bonds are no different from loans- whether the bonds are corporate loans or securitized products backed by retail loans. The only point a credit analyst must keep in mind is
that because bonds are freely traded, during times of excesses or panic, the bonds tend to be overvalued or undervalued.

In the case of equity investments in entities other than subsidiaries, the valuation gets tricky. In case the acquisitions were made during a bear market one can value those acquisitions at current market value. If the acquisitions were made during a bull market, suitable scaling down of the values has to be done. Considerable judgment has to be used and we would not recommend blindly using any valuation method.

Sometimes, a bank might have in its investment portfolio, assets originated by it that were meant to have been sold to third party investors but continue to languish in the bank’s investment book on account of not being able to find buyers. Also can be found in the investment book are investment units issued by the bank’s asset management business. Historically, asset management businesses linked to middle men such as investment banks have underperformed on account of stuffing of portfolios with equity and debt paper underwritten by the middle man himself. Analysts should be very judicious in valuing these investment assets.

In their disclosures, banks sometimes mention the weighted average rating of their fixed income investment portfolio. Weighted average rating/credit quality measures are of limited use- what one needs is the distribution of ratings/credit quality metrics. For instance, if all the securities in the portfolio had a credit rating of A, the risk is very different from if a part of the portfolio was in AAA securities and part in BB to yield a weighted average credit rating of A.

**Valuation of Financial Liabilities and adjustments to Shareholder Equity**

IAS 39 permits banks to value their liabilities at market value. So, if a bank’s credit quality falls, the value of the bank’s liabilities in the market would fall. The bank is even allowed to book profits on account of the fall in value of its liabilities. As credit analysts analyzing a firm, we
can’t value the liabilities at anything other than face value. The only time one can assign a value to a liability less than face value and consider the profits from the fall in value is if the bank is able to take advantage of the fall in the value of its liabilities and buys back the liabilities in the secondary market. If the bank had the resources, it would surely take advantage of the fall in prices. And if it does not have the resources, any fall in value is of no use. It should merely be a source of worry for creditors if the market starts assigns a probability to the event that the liabilities would not be met in full.

Another argument is that one can assign a lesser value than face value to instruments that are subordinate to the instrument one is investing in. For example, if one is looking to invest in the Tier II instrument of a bank and is valuing the liabilities of the bank for credit analysis, one can assign the market value to the Tier I instruments. We would not recommend this approach for the analytical framework. The fall in the value of any liability below face value is not a promising sign, unless it is due to a general panic. So, we would value all liabilities, whether deposits, senior debt, Tier II debt, Tier III debt or Hybrid Tier I debt at face value.

The consolidated financials typically consolidate off balance sheet liabilities such as guarantees to wholly owned subsidiaries. But indirect off balance sheet liabilities must also be kept in mind. These include items such as providing liquidity support or partial guarantees for structures such as SIVs, which have the appearance of not being credit exposures, but actually become credit exposures when trouble hits the SIVs. That is because the banks setting up SIVs have a reputational exposure to those entities- not supporting such entities will cause the franchise value to take a beating.

If an analyst feels that the value of any asset (as discussed in all the sections above) is overstated, the adjustments to that value needs to be done by writing down the value of equity
to balance the balance sheet. One must also remember to deduct from shareholder equity any profits shown on account of fall in the value of liabilities. It is post these adjustments that one has a clear idea of the assets and liabilities of a firm and one can assess if there is adequate cover for the creditor should operating earnings be insufficient for debt servicing. The rating agencies have their own methodology for rating banks - for details see Text Box: Rating Agency Methodology for Rating Banks

**Text Box: Debt Capital Instruments of Banks**

One of the off shoots of liberalization in the banking sector over the last two decades is the permission given for the use of long dated debt instruments as forms of bank capital. The increasing use of these instruments implied that banks and insurers had to set aside lesser and lesser amount of hard equity for absorbing losses emanating from credit, market and operational risk.

As per international banking norms (Basel II), banks are required to have a capital adequacy ratio of at least 8%. This capital could be of three forms - Tier 1, Tier 2 and Tier 3. Tier 1 capital consists of shareholders’ equity and perpetual non cumulative preferred stock. The Tier 1 preferreds are debt instruments and in a bank’s capital structure, they are senior only to equity. However, on instruction from the regulator, the coupons are deferrable and non cumulative. Typically, these instruments have a call option after the tenth anniversary of the issue. There is an unwritten compact with the investor that the preferreds would be called, unless prevented by the regulator from doing so. If a bank operates at the minimum capital adequacy required, at least 50% of its total capital must be Tier 1 capital. And typically, hard equity should constitute at least 85% of Tier 1 capital. Tier 2 capital is of two types - Upper Tier 2 and Lower Tier 2. Upper Tier 2 bonds are perpetual instruments that are senior only to Tier 1 preferreds and
equity. The coupon payment is deferrable, but unlike Tier 1 instruments, the interest payment is cumulative. These instruments typically have a maturity of 15 years after issue (in some countries they are perpetual) and are callable after 10 years from issue date. In the case of Lower Tier 2 debt, these instruments are junior only to senior debt and must have a residual maturity of at least 5 years. General provisions of a bank can also be a part of Tier 2 capital. Tier 3 instruments have a minimum tenure at issue of two years and rank pari-passu with Lower Tier 2 instruments. Tier 3 capital instruments can be used to support market risk in the trading book. What is of interest to the creditor is the quality of a bank’s capital—too much reliance on debt instruments and less reliance on hard equity is not a happy state of affairs.

During the credit crisis of 2008, several banks broke their compact with the markets and did not call their capital instruments at the first call date. These institutions included big banks like Deutsche bank. RBS, tethering on the edge of bankruptcy and Canadian bank Toronto Dominion also did not call their capital instruments at the first opportunity. Spain’s Santander was one of the few banks that took advantage of the crisis and bought back €16 billion of bonds at below par value.

Since the completion of this book, Basel III norms are beginning to take shape. This norm would require phasing out of Tier I preferreds and their replacement with instruments that can be written down/converted to equity in times of crisis. The distinction between Upper and Lower Tier II would be phased out. Tier III instruments would be history

**Text Box: Rating Agency Methodology for Rating Banks**

At its core, with some minor variation, all the rating agencies use the CARMELS (capital adequacy, asset quality, resource raising ability, management, earnings potential, liquidity and systems and controls) framework for assessing the credit quality of debt instruments of a bank. For instance, Moody’s calls a variation of this the seven pillar approach. Fundamentally, there is
nothing wrong with the framework. So, it was not the use of flawed methodology that prevented the rating agencies from spotting trouble at banks in the run up to the credit crisis of 2007. Rather, the erroneous conclusions on bank credit quality occurred because they accepted as gospel truth whatever was stated in the balance sheet, a task, we are sure an untrained monkey could have performed admirably. For instance, consider the value of assets. We know that Level 3 assets were a sizeable chunk of a typical large western bank’s balance sheet. Once the value of Level 3 assets was a big fraction of capital, there were only two honest courses open to the rating agencies. One, do a common sense based drilling down of the different classes of the bank’s Level 3 assets. Then, based on the credit story of the borrowing entities and common sense, come up with an indicative value of the assets, which though only approximately correct, would not have been precisely wrong. Rating agencies were uniquely placed to do this because banks give rating agencies an inordinate amount of confidential information, should the agency ask for, something that is not available to the credit analyst sitting outside the portals of a rating agency. The second course open to the rating agency was to state that on account of the humongous quanta of Level 3 assets, they cannot estimate the value of the assets, and hence would not be able to provide a meaningful assessment of credit quality. Obviously, it is too much to expect a fee earning agency to plead ignorance and forego fees. So, critical analysis was the only viable option.

Once you can’t get an accurate fix on the value of the assets, you can’t calculate the capital adequacy ratio and you can’t judge whether the capital available is sufficient to absorb losses. So, the stated capital adequacy ratios of banks like Citigroup in the fall of 2006 were quite meaningless. Next comes earnings. If you have not understood the dynamics of how earnings are realized, you can’t estimate the quality of the earnings. You don’t know if the earnings are recurrent or if they have been procured by pushing bad news into the future. The inadequacy of
estimation of capital, earnings and assets flowed from the agencies’ inability to understand the credit story and assess the competence of bank senior management in minding the ship. So, though the CARMELS framework is an adequate one for assessing the credit quality of a bank, the framework assumes that the analyst using it is intellectually capable of fleshing up the framework using a bank’s credit story.

**Duration and Currency mismatch between Assets and Liabilities**

A bank is in the business of borrowing short duration and lending long duration. During most periods, the upward sloping yield curve ensures profits from borrowing short and lending long. The steeper the yield curve, the more the profits. But if the bank takes on big duration bets— that is a big difference between the duration of assets and liabilities, it can easily put its solvency at risk. For most banks, the duration mismatch risk is not a terrible one because the weighted average duration of assets stays within acceptable levels. This is on account of the duration of long duration fixed rate mortgage products more than adequately compensated by the short duration of working capital financing and other short term products.

The risk of mismatch between duration of assets and liabilities really sits on the balance sheets of dedicated institutions such as mortgage financiers and primary dealers who fund the purchase of dated government securities with short term funds. The savings and loan crisis in the US provides an example of what can happen when you fund long term assets with short tenured liabilities. In 1989, 534 savings and loan institutions went belly up in the United States, as compared to 140 banks landing in the ditch in 2009. Of course, the total assets of bankrupt institutions in 2009 were more than the assets of failed institutions in 1989 because most savings and loan institutions were quite small.
The First Pennsylvania bank of the United States, which failed in 1980, was an example of an institution that went bust by buying long dated government securities with short term deposits. In 1980, the bank had $8 billion of assets and $5.3 billion of deposits. The bank used the short term deposits to build a $1 billion portfolio of government securities. About 50% of the securities had residual maturities more than 10 years and were yielding around 8%. But in 1980, short term rates in the United States climbed up sharply to 15.5%. That finished off the bank.

Currency mismatches between assets and liabilities of a bank, beyond miniscule levels, should be broadly unacceptable to creditors. Yes, once in a while it might make sense to borrow opportunistically in a foreign currency or deploy funds in foreign assets. But on most occasions, it is an unacceptable risk. When the Indonesian Rupiah sharply fell during the Asian crisis, many borrowers who had borrowed from foreign banks in foreign currencies defaulted and the banks had to write-off loans. Banks and non banks of the East Asian countries also got into trouble by contracting liabilities heavily in foreign currencies.

**Liabilities emanating from Employee Benefits- Retirement & Healthcare**

Pensions, health care and miscellaneous employee benefits, when not fully funded, should worry creditors everywhere, especially those of companies in developed countries. Such benefits have sunk or are on the verge of sinking many companies, causing considerable pain to lenders. Even in bankruptcy, these liabilities come back and haunt the creditors as shameless politicians are showing a propensity to steal from creditors to payoff unions. The recent bankruptcies of Chrysler and General Motors clearly imply that creditors would be wise to consider themselves subordinate to employee benefits when pricing loan recoveries in the event of default. Pension deficits have either destroyed big companies such as Trans Word
Airlines, Canadian telecom equipment maker Nortel Networks or are posing big problems as in the case of Germany’s industrial conglomerate ThyssenKrupp.

Employee pensions are of two types- defined benefits (DB) and defined contributions (DC). A DB pension plan promises to pay retired employees a specific amount every month, linked to their years of service and last drawn salary, irrespective of returns from the debt and equity markets. The employee has in this case passed on the investment return risk to the shareholders and perhaps the creditors of the employer. It is DB pensions, which was the norm in developed countries until recently that has caused profound damage to corporate balance sheets. Increasingly companies are moving away from the DB system to the DC system where the company contributes a certain amount to the employees’ retirement account and does not worry about investment returns as that risk is passed on to the employee. In many countries the company does not get involved in employee pensions- so that is one less risk that shareholders and creditors need to worry about.

Despite the fact that the pernicious DB system is on its way out, its potential for harm to creditors is going to be around for some more time. In a technical paper by actuarial firm Watson Wyatt in November 2007, the firm estimated that even if all the UK DB schemes were closed, DB liabilities would show a growing trend till 2017, reaching a maximum of 39% above the liabilities of 2007, and returning to current levels around 2035. In early 2009, UK corporate pensions had a £220 billion shortfall forcing companies such as British Telecom to cut their dividend payout. Around the same time, the pension watchdog claimed that the UK’s 7000 defined benefit schemes linked to final salary had a deficit of £240 billion.

The situation is as alarming in the United States. There is a good chance that companies unable to fund their pensions in a globalized and competitive environment, will file for bankruptcy and
dump their pension liabilities on to the government guarantor of pensions - the Pension Benefit Guaranty Corporation (PBGC). The PBGC, which funds itself by charging a premium to the companies whose pensions it guarantees, had a surplus of $10 billion in December 2001. By the end of 2008, this got converted into a deficit, which further tripled in the first 6 months of 2009 to $33.5 billion. Obviously, this expanded deficit should be a part of the consolidated financials for any analysis of the United States’ sovereign credit rating.

**Pension assessment before detailed Credit Analysis**

Before doing a full fledged appraisal of a company’s assets and liabilities, the credit analyst should look at the pension deficit to ponder if it is worth looking at the company in greater detail. In most countries, the accounting standards require the deficit in pension funding to be stated explicitly in the liabilities column (see Accounting Box: Estimating Non Current Employee Liabilities). The stated numbers should not be accepted as gospel truth because several assumptions go behind arriving at the value of pension assets, pension liabilities and hence the pension deficit. These include:

- Actuarial estimation of the gross pension liabilities. This is estimated by actuaries and analysts would do well to take those values at face value, because there is very little extra value they can add by subjecting those values to sensitivity analysis. For instance, if one thinks that longevity is going to increase causing the stated liabilities to be understated, it should not perturb the analyst as those liabilities would become evident many moons down the line, before which a creditor has adequate time to get out. Yes, if you are going to invest in the 30-year bonds of a corporation, it should matter, but investing in a 30 year bond (other than a sovereign bond in the currency of the issuing country) falls in the domain outside credit investing. Anything beyond 10 years, for most borrowers, is outside the credit realm.
-Investment returns assumed from the assets kept aside for employee benefits. Companies which are using aggressively high investment return assumptions can get caught out fairly soon by regulators. The regulators might force the company to restate its pension hole in the balance sheet, which might cause the balance sheet to look shocking. Obviously what is a sensible return will vary from country to country. It is better to just get the current fair value of the assets invested in the pension. If one asks the company about the under funded nature of its pension liabilities, the company might snap back that high returns will ensue in future to wipe out the hole. It is better not to go down that lane. After knowing the current market value of the pension assets, an analyst needs to get the split between debt and equity in the pension fund. Then he can use his own judgment as to whether current valuations of the assets are way out of whack because of unusual market conditions. We fully appreciate the fact that long dated assets should not be seen too much through the prism of current market values. But unless you are witnessing severe market dislocations as during the fall on 2008, they provide a starting point, beyond which minor tinkering should suffice.

**Surrendering to the Unions killed General Motors in 1990 (not 2009)**

Though General Motors (GM), founded in 1908 reached the peak of its glory in the late 1950s, the company’s’ downfall started since the strike of 1945-46, when the management, under duress from successive Democratic Party led governments, was forced to concede the unreasonable demands of the United Automobile Workers (UAW) union. Though there was less labor unrest in the following decade, unreasonable principles, which would erode the corporation’s long term health had been conceded. Because S&P went by the historical prowess of GM and not its worsening unfunded healthcare and pension liabilities and the deteriorating quality of its products, it continued to rate GM triple-A till 1981. The agency had an investment
grade rating on the company for a further 24 years, when the signals of impending doom had long been confirmed.

Creditors had no business being in General Motors post the total surrender to unions in the 1990s. And for those who did, the saying of Thomas Fuller comes to mind- “if you leap into a well, providence is not bound to fetch you out”. The company’s pact with the unions required it to pay 95% of base salary to idle workers. This and other terrible concessions increased the company’s fixed costs appreciably. The company, to divide this deadweight cost amongst the maximum possible number of units, kept production at unreasonably high levels. Sales of these units could be achieved only through costly dealer incentives, cheap credit and heavily discounted sales to fleet operators. This killed the residual value of GM’s cars and damaged the brand permanently. A proactive credit analyst would have recommended getting out of the GM credit in the early 1990s and not waited for the impending poor earnings and weakening capital structure to follow. Throughout the 1990s GM had a single A credit rating from S&P. The transfer of value from the corporation to the unions and burgeoning unfunded medical and pension liabilities were all too evident. At the end of 2008, GM’s pension plan was under funded to the extent of $13 billion. Unfunded healthcare costs were extra. Bankruptcy put this once proud company out of misery on June 1, 2009. The single most important message for the credit analyst is to know when to get away from companies which have adverse employee relationships. These adversarial relationships result in managements trying to pass the problems to another day by agreeing to unsound employee benefits that would remain unfunded in the near future.
Greedy Workers and Executives sink Bethlehem Steel

Carol Loomis’ account of the demise of Bethlehem Steel in a 2004 issue of Fortune Magazine is a thriller of how a great company went to the dogs thanks to serial mismanagement. Chief among the reasons for the company’s demise were its prohibitive employee benefits – first, current payments to greedy executives and then the promise of generous retirement payouts to workers, sometime in the distant future when the executives did not expect to be around to face the music.

Bethlehem Steel, which filed for bankruptcy in 2001, was founded in 1904. The company had built US national landmarks such as the Golden Gate Bridge. In 1943, at the peak of the Second World War, the company’s CEO promised the government to build one ship a day and went on to improve on that promise. At its peak during the war, the company had 300,000 employees. When it filed for bankruptcy, it had only 12,000 workers at its plant near Philadelphia.

Signs of the management loosing control over the company’s strategy were evident by the mid 1960s. For 16 years from 1958, the company’s return on equity was a full 400 basis points lower than other Fortune 500 companies. Its average return to shareholders of 7.5% was lower than its cost of capital. Greedy executives were rewarding themselves generously at great cost to shareholders and creditors (so creditors who came of age during the “decade of greedy bankers”, starting from the mid 1990s might be surprised at such rampant greed during the golden age of American industry). In the Business Week’s Survey of pay for 1957, 9 of the 12 top paid executives belonged to Bethlehem Steel. While executive costs were spinning out of control, the company was forced to accede to the greed of the United Steelworkers of America.

Wages of steel workers went up by 900% in between 1954 to 2003, a period during which steel prices went up by a mere 220%. While management was giving itself cash goodies, it promised
the workers non cash benefits such as enhanced healthcare and pension benefits, which did not have an immediate impact on the income statement. Lax accounting standards prevalent then allowed this charade. So, pension plans were funded, but not fully, while healthcare plans were completely unfunded.

Because the greedy executives were focused on short term returns, they did not pay attention to the fact that they could have lowered their tax bills by deducting expenses for funding the pension plans. Competitors such as US Steel aggressively funded their pension plan to lower their tax bills- but not Bethlehem Steel.

Instead of funding their pension promises, the company when for a big debt funded capital expenditure program. One wonders why the creditors dug themselves deeper into this bottomless hole. The consequences started being felt from 1977. During that year, the company took a $ 791 million non recurring charge for plant closures- plunging the company to its first loss since 1933. $ 483 million of this was for pension costs for the terminated employees. Every time Bethlehem Steel shut a plant, it accelerated retirement payouts for long time workers and shutdown benefits, which put more burden on the pension plan. In the 1980’s headcount was down to 35,000. By 2001, there were 120,000 retirees supported by 13,000 active workers. By the time the Pension Benefit Guaranty Corporation (PBGC) took over the company’s pension obligations after bankruptcy, it had ballooned to $ 4.3 billion. This ignored health care benefits promised as these were effectively written off. Wilbur Ross’ International Steel Corp bought the company from bankruptcy without the liabilities that sank the company.

The lessons for creditors from the Bethlehem Steel episode were - a) Beware of companies where executives pay themselves way out of industry standards- chances are they do not have the long term interests of the company at heart and creditors might be left holding the basket.
b) Unless you have a clear idea of unfunded or under funded employee benefits, do not even think of participating in the company’s destiny as a long term lender.

**Was IBM a single-A Credit in 2009?**

The history of IBM is too illustrious to need repeating. However, at the end of 2008, the company’s balance sheet was positively shocking when viewed through the eyes of a creditor. On a balance sheet size of $109 billion, the company merely had a shareholder equity base of $13.5 billion. Repeated share buy backs had enfeebled the equity foundation of the company. $26 billion was deployed in financing of customers. For its US pension assets, the company assumed future returns of 8%, when 10 year treasuries were yielding around 2.5%. Even with that fantasy like investment return assumption, the hole under its pension head amounted to $19 billion. The total debt outstanding at the end of 2008 was $33.9 billion (to be fair, the company had almost $12 billion of cash). So, despite the company’s profitability ($12.3 billion in 2008), its crazily leveraged balance sheet should startle a creditor. IBM’s creditor has to base his analysis on likely continuance of current profitability and the quality of financing receivables being good, because, should the company run into problems, the recoveries are like to be awful.

**Credit Financing of Japan Airlines in 2009 did not make sense without a Pension Solution**

Japan’s national carrier, Japan Airlines is a horrible company in a horrible sector. The airline started operations in 1951, giving it sufficient number of years to accrue a pension problem. It was privatized in 1987, but politicians continued to meddle in the functioning of the airline. They forced the airline to operate in unviable sectors so that there could be flights to their political constituencies. In the case of domestic operations, besides operating in unviable sectors, the airline industry was inherently at a disadvantage competing against a very efficient
The high-speed railway system. To compound its woes, its biggest domestic competitor, All Nippon Airways was less incompetent than it.

By the middle of 2009 it became clear that Japan Airlines could not push its problems to another day. From 2001, the company had received three bailouts and was on course to receiving a fourth one. Its liabilities exceeded its assets by a considerable amount. The outstanding debt was $15 billion. Its biggest creditor was state-owned Development Bank of Japan. But the big private sector banks, Mitsubishi UFJ, Mizuho and Sumitomo Mitsui also had huge exposures to the company. There was talk of American airlines such as Delta and American buying stake in Japan airlines to take advantage of Japan Airlines’ extensive network across Asia. Another possible solution was existing lenders swapping their debt for equity. Irrespective of what shape the restructuring takes, creditors should not get involved unless the more than $3.4 billion pension hole on Japan Airlines’ balance sheet was filled. With Japan having a new government that owes a lot to the unions, it is unlikely that this liability will be cut or restructured beyond a point. So, it continues to hang like Damocles’ sword over the airlines’ head.

**Accounting Box: Estimating Non Current Employee Liabilities**

IAS 19 on Employee Benefits provides analysts with guidance on how expenses and liabilities from such a source have to be accounted for. Any understatement of future benefits already promised to employees implies overstatement of revenues on account of understated expenses. There are of course no problems on account of current payments such as wages, paid annual leave etc. Problems and disputes occur over post employment benefits such as pensions, post employment health care and termination benefits. Unpaid expenses from the benefits accrued in the current period are recorded as liabilities in the balance sheet.
The most important issues for an analyst are the actuarial assumptions that are used for estimating future liabilities. For instance, for the whole decade from 1999, many companies had been assuming that their pension assets would yield more than 8% annual returns. For the whole decade, in reality, the S&P 500 yielded a negative return. When the optimistic assumption is followed by several years of the forecast not coming true, the compounding effect ensures that the liability becomes a monster. At some point, some company assets such as real estate, which unsecured creditors might have been banking on for recoveries in case the company got into trouble, could be transferred to the pension fund.

Another area where assumptions can haunt a company is the discount rate used to value pension liabilities. Using government bond yield is reasonably conservative, but if pension liabilities are a significant part of a company’s liabilities, credit analysts would do well to calculate the liabilities under a scenario of lower government bond yields (in a country like Japan with high savings, in spite of high government debt, yields on government securities might be temporarily low- that might not persist forever). Other actuarial assumptions such as estimated future salary increases and any other estimates must pass the test of reasonableness and conservatism. Close attention should be paid to any actuarial gains and losses reported in the financial statements.

An extension of IAS 19 is IAS 26- Accounting and Reporting by Retirement Benefit Plans. Most new companies have defined contribution pension plans, where the employees take the risk of investment returns not yielding what was expected. The credit analyst should be more worried about defined benefit plans of the older companies, which has driven several of them into bankruptcy. The analyst should also check the frequency of actuarial valuations.
Valuation of Assets and Liabilities of an Insurance Company

The procedure for valuing insurance company assets is similar to that for valuing bank assets. Of course, the composition of the asset side of a bank’s balance sheet is somewhat different from that of an insurance company’s balance sheet (see Text Box: The Insurance Business in Brief). The liability side of an insurance company is mostly comprised of technical reserves for paying off claims and is of an actuarial nature as opposed to the more deterministic nature of a bank’s liabilities.

Insurance companies are not big borrowers in the debt market. Their core operations, if run properly, generate float cash flows that need to be invested prudently and sensibly. In fact, one needs to be wary of insurance companies with anything more than a negligible amount of debt on their balance sheet, because it either reflects a desire of management to secure leveraged returns or the fact that the management has an orientation towards the M&A circuit. The debt does not include the debt like capital instruments such as Tier I and Tier II bonds.

What then is the role of credit analysis in an insurance company? The role is to assess the insurance company as a counterparty for various transactions such as insurance services. A corporate, before it offloads its insurance risk onto an insurer needs to assess the ability of the insurer in making good its obligations should the need arise. Likewise, an insurance company needs to assess the counterparty credit risk of a reinsurer before entering into a reinsurance contract - else the reinsurance premium would have been spent in vain and credit support would not be unavailable when the insurance company needs it.

When assessing an insurance company’s counterparty risk, if you want to be proactive rather than reactive, you are better off following the method given below rather than paying heed to the rating agencies. The wisdom on insurance company operations gleaned from Berkshire
Hathaway’s annual reports is very useful for understanding this business. Credit rating agencies have a very dangerous function in the working of insurance companies, which insurance and reinsurance companies and their counterparties would do well to remove in their collective interest- the maintenance of a particular minimum level of credit rating from an agency. If the rating fell below that, it would cause an insurance contract to become void. There could be the contractual requirement for the insurance company to return unearned premiums. This merely serves to drive the insurance company further into trouble.

While paying lip service to a number of factors, some rating agencies (particularly S&P) use mechanical risk models to assess the counterparty credit risk of insurance companies. Obviously, these models, not being intelligent, will not be able to capture the narration and story of what is going on beneath the numbers. The failure to grasp the narration (“the credit story”) is the cause of such well known rating failures as AIG and monoline insurers in 2007-2008.

**Asset Valuation**

The first step in the assessment of an insurance company is valuing its assets. When this is compared with current value of liabilities, it helps to assess if the company is currently solvent. Post the valuation of assets and liabilities, one needs to assess if current reported earnings require adjustment. The likelihood of future earnings being adequate to ensure continued solvency also needs to be evaluated.

The three main types of investments of an insurance company include fixed income securities (including those that look and feel like equity such as junior tranches of securitization transactions and ultra low quality bonds), equity securities and real estate assets. Since the insurance counterparty does not get any upside in the insurance companies’ investments
(unless it is a with profit life insurance policy), it makes sense to be involved only with insurance companies that invest most of their assets in high quality assets.

Of course, persistently low earnings on assets is also not in the interests of the counterparty- it might force a company to do rash things on the underwriting side to boost short term profits, while putting long term solvency at peril. But it is usually poor underwriting results that drive an insurance company to do foolish things on the investment side- so persistently poor underwriting results should worry policy holders more. Japan’s Yamato Life Insurance Company, a company founded in 1911 filed for bankruptcy in 2008. The company had 30% of its investment portfolio in alternate assets- a surefire recipe for disaster. Post bankruptcy, the company was taken over by Prudential Financial. Japan’s Life Insurance Policy Holder Protection Group had to provide support to wipe out the company’s negative networth. Weird stuff like alternate investments should not be more than a few percentage points of an insurer’s portfolio, unless the insurer is substantially overcapitalized.

Equity holdings can be high only if the company has a track record of sound underwriting such as most insurance companies of the Berkshire Hathaway stable. When a company is running a sound underwriting book, there is low likelihood of policy holders canceling their policies (which result in lesser premium flow and claims that would have to be settled by liquidating assets). For most insurance companies, this criterion is not satisfied- so they should have most of their portfolio in bonds. Real estate assets, whether in the equity form such as REIT investments or in the debt format like CMBS also make sense only if purchased after a substantial fall in asset values. Real estate assets bought during other periods should be fairly low.

One does not like outright bloomers on the asset side. An insurance company investing in a group company is not a happy state of affairs. For instance, Korean insurance company
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Samsung Life Insurance, investing in Samsung Electronics is not a welcome occurrence for counterparties.

Reliance Corp Holdings’ Investments in Junk Bonds finishes off an Insurance Company

The Steinberg family had run property and casualty insurance company Reliance (a company which traces its roots to 1817) since 1968. The company filed for bankruptcy in 2001. Saul Steinberg acquired Reliance through a leveraged buyout. He then used Reliance’s cash flows as a base for corporate raiding. Steinberg took Reliance private in 1986 and took it public again. Investors were available, giving testimony to the fact that there is one born every minute. Many factors were responsible for Reliance’s ultimate demise- all of which a counterparty to an insurance company must assess.

Firstly, the company was involved in workers’ compensation policies at extremely low rates (any insurance company offering rates lower than market rates must have a very clear explanation on how it expects to make money). Since the losses hit much later, the premium cash flows provided Saul Steinberg with cash for his leveraged buyout activities. When the pool started getting hit by losses, the reserves vanished really fast. Of course, when customers of an insurance company spy early signs of trouble, they have a tendency to accelerate their demands. Secondly Saul Steinberg used the company to support a lavish lifestyle. Cash flows were diverted for heavy dividend payouts, which were necessary for the king-size life style. Thirdly, the company’s asset book in the 1980s was simply shocking for a company that was holding other’s people’s money temporarily before paying off insurance losses. During the 1980s, Reliance became a big client of junk bond issuer Drexel Burnham.

The whole structure of the Reliance Group was very interesting. Reliance Group Holdings owned 100% of Reliance Financial Services, which in turn owned 100% of Reliance Insurance. In
1990, Reliance Insurance paid $140 million in dividends to its parent. The holding company, in September 1991, had $990 million debt. The only source of debt servicing was the dividends received from Reliance Insurance. In 1988, 45% of Reliance Insurance’s fixed income investment portfolio was made up of junk bonds or unrated securities. As the trouble began in the junk bond market, Reliance gradually brought the junk bond portfolio down to 20% of the fixed income portfolio. Another horrific aspect of Reliance Insurance’s investment portfolio in 1991 was that it held $68 million par value of bonds of Reliance Group Holdings. Reliance Insurance Company, at that time owned 34.9% of Zenith National Insurance, which in turn owned 23.88% of Reliance Insurance Company’s preferred shares. These cross transactions should have been the final signal for policy holders and debt holders to scoot- funnily, the company survived for a whole decade after this.

Rating agencies, as usual, were behind the curve. AM Best downgraded Reliance Insurance from A+ in 1986 to A- in 1991. The company had the same rating on till June 2000, when AM Best rapidly downgraded the company to C. With so many red flags visible for more than two decades before ultimate bankruptcy, it is a real surprise that debt investors and policy holders felt comfortable with the ride.

**AIG’s Investment Strategies and Consolidated Financials**

Insurance is an exception to our broad premise that you need to look at the consolidated financials of a group. Since insurance companies are regulated by different regulators at the operating company level, a policy holder needs to look at the financials of the operating company only. Only a creditor to an insurance holding company, holding equity stakes in various insurance companies needs to look at the holding company level. Different regulators,
regulating different entities would not permit the flow of cash from one operating company to another, save in the form of dividends after having complied with all solvency requirements.

Most of the insurance companies of the AIG group are fairly sound despite the parent being under financial strain due to the activities of the company AIG Financial Products. AIG Financial Products, by writing foolish credit default swaps put at peril shareholders and bondholders of the parent company, but not the policy holders. At the operating company level, if you are a policy holder in a sound company of the AIG group, you would not have been affected even if AIG was not bailed out. All that would have happened (and might still happen), is the ownership of the operating company would shift from AIG to another company that would have bought AIG’s shareholding. In this case, the policyholders get exposed to the risk of the operating policies of the new equity owners- what type of assets they would invest in, how conservative their loss reserving is, what their reinsurance policies are etc. But insurance regulators would not permit an unsound company from buying out another insurance company (unless they were busy watching porn during working hours like the US SEC employees).

**Approximate estimation of Required Insurance Reserves**

Getting an approximate fix of the insurance liabilities, post the estimation of assets would help an insurance counterparty assess if his insurance contract is worth the paper it is written on and help creditors at the holding company level assess their likelihood of being repaid. One might argue that the very fact that the regulator has not shutted the doors of the company implies it is solvent, but there is a possibility that the regulators are going by the company assessment of asset values, particularly the weirder types of assets. Also, the regulator might be going by the company’s estimation of loss reserves which might prove to be inadequate. Warren Buffet points out in his annual reports that investors and policyholders should be wary of insurance
companies which use words like “reserve strengthening” too often. True, insurance reserves by their stochastic nature cannot be correctly estimated beyond a point, but the presented reserves should have a 50% chance of being higher than required to pay off claims and a 50% chance of being lower (but not too much lower). So, “reserve strengthening” should happen 50% of the time and “reserve weakening” should happen 50% of the time.

Unfortunately, that is not the case and underestimation of reserves in order to overstate earnings is a fact of life. When a company underestimates its reserves, it effectively causes it to understate the cost of doing business. This in turn results in wrong estimation of the premium required to be charged for future business. So, not only does underestimating reserves threaten the “here and now”, it also puts a question mark on the company’s future businesses.

Actuaries use several techniques to estimate loss reserves. The problems with stated reserves have nothing to do with the statistically sound methods of reserving which have stood the test of time, but everything to do with the fact that actuaries are frail human beings like everyone else, who would not bite the hand of the company management that feeds them. Techniques for loss reserving include Loss Ratio method, Loss Development method, Bornhuetter Fergusson (a combination of the above two methods) and several other methods. A credit analyst needs to look only at the loss ratio method - which is fairly simple besides being sound in its statistical underpinning.

In the Loss Ratio Method, for every line of insurance business that a company writes, one calculates loss ratios for each year of operation. Let us say, Auto Third Party Liability is one of the insurance lines a company underwrites. Also, lets say, typically these claims are fully settled in four years after the policies are written. In that case, loss experience for any year older than four years is not likely to see further claim payouts- the claims are likely to have been
fully settled. Let us say, 10 years ago, in a single calendar, the company got $100 million in premiums from this line of business. On the policies written that year, the company paid $75 million in claims (the “loss ratio” is 75%) and incurred expenses for settling the claims of $20 million (“expense ratio” of 20%). So, the total cost to the company, the sum of the loss ratio and the expense ratio called the combined ratio had a value of 95%.

Let us say, nothing has changed in 10 years, in terms of inflation in cost of settling the claims (juries not handing out higher settlements, wages not going up etc), and this year the company brought in $200 million in premium in this line of business. Assume further, that the company did not cut its premiums or increase the premiums during the last 10 years. In that case, based on the experience 10 years ago, you can estimate that the company would ultimately pay out $190 million despite the fact that it has paid out only $40 million so far. Let us say, the company created reserves of $100 million for the policies written this year, giving a total loss expectation by the company of $140 million ($40 million paid plus $100 million in reserves). Clearly this is below what commonsense says the reserves should be- the reserves for the current year should be $150 million so that there are enough resources for the payout over the next 3 years. In this case, the company has under reserved by $50 million. Since claims take 4 years to settle, the claims of the previous three years would not have fully developed and must be estimated in the above fashion.

One weakness in our simplistic calculations above is we considered the loss ratio of a single year 10 years ago as sacrosanct – obviously the combined ratio every year is not going to be precisely 95%. So, one should look at the combined ratios for all the fully developed years and take the average of those combined ratios for use in estimating reserves in the non-fully settled years. The variation in the combined ratios of the fully settled years provides the analyst with some idea on the volatility of the business. For instance, combined ratios of super catastrophic
insurance policies can be very low in years of few disasters and high in other years – the
premium charged every year should cover loss expectations over a cycle. Likewise loss ratios of
areas such as product liabilities can be very volatile and take a long time to settle (”long tailed
businesses”).

Another weakness of our simple loss ratio method was it failed to incorporate premium
increases and decreases. If premium is cut by an insurer due to competitive pressures, claims
are not going to fall, and the combined ratio would go up. And if an insurer cuts premium in
isolation he is likely to capture a lot of loss making business from competitors which is likely to
accelerate his path to ruin. Since, in the short run, this translates into increased cash flow from
premiums, it masks the insolvency of the company. Adjustments to loss ratio expectation
should also be made for increased expenses over time, and other factors that change over time.
When this reserve estimation is summed over all lines of businesses the reserves that the
company needs for meeting all future claims can be estimated. The necessary reserves when
compared with actual reserves tells the analyst if the company is correctly reserving and if it is
under reserving, the analyst needs to know if the equity cushion is adequate. Remember, the
equity cushion is not only required for policies written earlier and which have been under
reserved, but also for future policies where the premium is undercharged.

Getting loss ratio at the group level, without knowing how the business mix has changed makes
it less useful. Loss ratio analysis has to be done business by business. The dynamics of the
different lines of business are different. Credit analysts, who need to be approximately right
than precisely wrong, should have no time for fancy techniques for estimating loss reserves.
This calls for dollops of common sense and some basic mathematics. The analyst has a problem
when a company enters a new line of business, whose loss experience is not available.

Counterparties should be wary of companies that are growing rapidly in a new line of business-
collecting premiums by making promises of future payment of losses without knowing whether the premiums charged are adequate is a risky proposition.

In the life insurance business, there is less ability to under reserve since this business is more predictable and less volatile. Life insurance policies come in various shapes- the analyst needs to look at each class of business separately.

**Relationship between Insurance Assets, Liabilities and their Liquidity**

Insurance companies get into trouble when they, instead of treating the two sides of the insurance balance sheet separately, start pricing premiums based on investment return expectation and not based on loss experience. Only in very rare circumstances does that make sense. For instance, in the United States in the early 1980s, when interest rates were very high, the high return from risk free securities made it sensible to acquire as much premiums as possible, even for a small underwriting loss, so as to get the high investment returns risk free. The small losses from the underwriting side can be compensated by high returns on the investment side.

The above example does not hold when the asset income is secured by taking huge asset side investment risk. For instance, life insurance company First Executive sold “vanishing premium” life insurance policies. The company claimed that the premium would be invested in such a manner that the policy holder would not have to pay premiums in later years. Junk bonds constituted two-third of the firm’s assets, whose high yield was supposedly to make premium requirements go away. Executive Life was actually an innovative firm- it had introduced retirement annuities in 1975. Its foray into junk bonds and mis-pricing of premiums based on asset returns killed the company in 1991.
Another way life insurers get into trouble is by promising their policyholders a guaranteed minimum return. When interest rates fall and high yields can be secured only by taking on high risk, the insurance company runs aground. Equitable Life, a UK based entity ran into trouble promising its policy holders a guaranteed investment return.

**Text Box: The Insurance Business in brief**

An insurance transaction commences when an individual or company (the “insured”) seeks to offload some risk on to an insurance company by paying a “premium”, so that the individual or company is not put in position of financial distress should the insured risk actually materialize. Insurance companies are broadly of two types- life insurance and non-life insurance.

Life insurance companies, besides insuring the life of the insured are involved in activities such as health insurance and pensions. The tenure of each such contract can be quite long. Every unit of premium collected by the company is not only used for paying out claims when the insured event occurs but also for creating reserves for future payouts. For example, consider a single premium life insurance contract where the insurance company receives a single premium payment for insuring a life for 20 years. Let us say the company has written 1000 such policies. Obviously, it cannot, in its income statement, show as revenue the entire premium collected from the 1000 policies. The premiums need to be earned over 20 years. The risk is not uniformly spread over the 20 years. As time passes, the risk of mortality keeps increasing as the insured grow older. So, in the first year, only a small portion of the premium collected is “earned” as only a small portion of the risks assumed by the insurance company has expired. On the expense side, the company has to consider the cost of the claims paid as well as the expenses required for keeping the lights on at the insurance company. Because there is a risk that the number of claims do not go as per the script of mortality tables (i.e mortality tables
might imply a certain probability of a 35 year old meeting his creator the following year, but the actual death rate of 35 year olds insured by the company might be higher), an insurance company needs to keep capital to cushion the policy holders against adverse loss experienced by the insurance company. The minimum amount of capital required is set by national regulators. To run a viable insurance operation, the company must price its premiums such that there is adequate cash for paying claims, for running its operations and for ensuring that the providers of capital get an adequate return. If the company is not pricing its premium thus, at some point it will not have adequate cash to pay the different claimants.

Because the premium is paid upfront but the claims have to be paid over a twenty year period, the insurance company can invest the money in various asset classes to secure returns. In some cases, the gains accruing from the investments need to be shared with policy holders. If policy holders do not get a share in the pie, it is the prerogative of the insurer to invest in assets as he pleases. This exposes the policy holders to the risk that the investment assets would have to be written down in value and adequate cash might not be available to meet claim payments. Depending on the latitude permitted by regulators on the investment front, the insured should seek insurance companies which have adequate capital, not only for meeting unexpectedly high loss payments, but also for cushioning the policyholders from investments gone awry.

Non Life insurance companies, also called property and casualty (P&C) insurers, cover the risk of damage to property such as homes, factories, offices and cars as well as liabilities such as compensation to workers on account of accidents at work and liabilities such as medical malpractice. Again, premiums are collected and earned over a period of time. An interesting notion used by P&C insurers is the concept of an “accident year”. Accident year refers to all accidents that occur to the insured in that year and result in claims. In the case of some lines of business such as product liability insurance to pharmaceutical companies, the insured
themselves might not be aware for a long time about the damage their products are causing their customers. Let us say, a pharmaceutical company took out a 1 year product liability contract on January 1, 2001 to cover the risk of financial losses in case any of its products cause health problems to customers. The customers of the pharmaceutical company using product X became aware of the health problems caused by the drug in 2005 and sue the pharma company for damages. The pharma company in turn notifies the insurance company of the claim. Despite the fact that the claim was made 3 years after the policy expired, the insurance company is liable to pay because the “accident” occurred in 2001, when the policy was current. 2005, in insurance parlance is the “Reported Year” while 2001 was the “Accident Year”. An extreme example of this type of delay in claiming damages occurred in losses connected with the harmful effects of the use of asbestos. Several decades elapsed since the policies expired before the damage lawsuits were filed.

A ratio used by P&C insurers to judge the efficacy of pricing of their policies of a particular business line is the “Loss Ratio”. It is defined, for a particular Accident Year, as the ratio of “claims incurred” for that accident year to the premiums earned. Notice, the item in the numerator is “claims incurred” and not “claims paid”. That is the cue to explain another aspect of the insurance business. The moment a claim occurs, say from a hurricane, the claims adjustor in an insurance company, from his past experience, immediately realizes that the total losses from the claim would not be limited to what is paid immediately to the insured but additional payouts would be required once the homeowner whose property is covered realizes that the damages are more than the claims he had originally filed for. For the future claims, the claims adjuster creates a reserve, which is gradually brought down to zero as more payments are made. The reserves could also be revised upwards if the adjuster, on getting more information about the claim, feels the claim would ultimately settle for a higher amount. So, for a particular claim
that has not yet been settled, the claims incurred on balance sheet date is the sum of the amount paid to date and the reserves outstanding on that date. The reserves sit on the liability side of an insurer’s balance sheet and form part of “technical reserves”. Unearned premiums also form a part of the “technical reserves”. As mentioned earlier, not all claims are reported immediately to the insurer. From the claim development pattern of prior accident years, whose claims have been fully settled, actuaries estimate the amount of reserves required for claims that have been incurred but not yet reported. The reserve created for such unreported claims is, in insurance parlance, referred to as “incurred but not reported reserves” (IBNR reserves). In lines of businesses such as product liability, IBNR can form a substantial chunk of total reserves as claims take a long while before they are adequately reported. The lines of business where reserves run off quickly to zero as claims are paid off are referred to as “short tailed businesses”. The liability lines of businesses take a long time to run-off and are referred to as “long tailed business”

A third type of insurance company is the reinsurance company. It is the insurer of insurance companies. Primary insurers, who deal with individuals and companies, might choose to offload a portion of their risks to reinsurance companies. The primary insurer is said to have ceded risk to the reinsurer. Hence the primary insurer is also called the cedant. The motive is risk management. A primary insurer might not like the exposure emanating from catastrophic losses and might want to offload losses beyond a threshold to the reinsurer, who might be better suited to handle “low frequency, high severity” catastrophic events. Of course, the primary insurer must worry about the credit standing of the reinsurer – else the premiums paid in anticipation of support would have been in vain and the receivables from the reinsurer would be uncollectible. We feel that separate rules need to be framed for reinsurance exposures to reinsurance companies where the primary insurance company has substantial shareholding (say
more than 25%). We would recommend not treating such reinsurance as reinsurance for accounting purposes but pretend as if the company has set aside the premium it paid to the reinsurer for meeting future liabilities.

A reinsurance contract is one where the reinsurer indemnifies the ceding company against all or portions of the primary insurance risks taken by the ceding company. There are two basic types of reinsurance contracts- Treaty and Facultative. In Treaty reinsurance, the ceding company is contractually required to cede and the reinsurer bound to assume a specified portion of risks from a line of business (say motor liability). The reinsurer does not evaluate each risk assumed by the ceding company. He merely reviews the underwriting policy of the ceding company and estimates the reinsurance premium. In Facultative reinsurance, reinsurance premium is negotiated for each reinsurance contract. Facultative reinsurance is purchased by ceding companies for contracts not covered by Treaty reinsurance. Both Treaty and Facultative insurance can be written on a proportional basis or a non proportional basis. In a proportional reinsurance contract, the ceding company pays a pre-determined premium to protect itself against a certain percentage of losses. Excess of Loss (XOL) reinsurance cover is the most important type of non proportional reinsurance. In this contract, the reinsurer company protects the ceding company from losses exceeding a certain pre-determined amount emanating from a line of business or from a certain event such as a catastrophe.

To acquire new multi year insurance business, an insurance company incurs acquisition costs. IFRS 4, “Insurance Contracts” requires these costs to be expensed as soon as incurred. A portion of the premium which represents recovery of the acquisition costs can be booked as revenue. In the case of US accounting standards, the acquisition costs are recorded as a liability in the balance sheet under the head “deferred acquisition costs” and amortized over the life of the contract.
Reinsurance Analysis - Swiss Re versus Munich Re

Munich Re and Swiss Re are two of the largest reinsurance companies. Insurance companies rely on the creditworthiness of the reinsurers for timely receipt of reinsurance claims. In fact paying reinsurance premiums to a non creditworthy reinsurance firm is not money well spent. Reinsurance is a paradoxical transaction for an insurer. If several insurers get attractive premium quotes from a reinsurer, that is less than their expected loss, for a while, it seems that the primary insurance company is getting a good deal. But writing uneconomical reinsurance policies puts at risk the solvency of the reinsurer, reducing the likelihood of servicing of reinsurance claims. So, insurance companies and reinsurance companies are part of the same chain, one cannot profit at the cost of the other over the long term. Japanese insurance company Taisei Marine & Fire filed for court protection because the company’s net exposure (post reinsurance) from the 9/11 events was 1.5 times its capital base. It had a huge reinsurance exposure to a single US aviation reinsurance agency.

Back to Munich Re versus Swiss Re and the virtues one would like in a reinsurer. Firstly, you don’t want your reinsurance company to have an adventurous investment policy. Swiss Re has had an adventurous policy for some time and it culminated in the company having huge losses from assets linked to the US subprime crisis. As at 31st December 2008, the company reported that most of its assets were in Level 2 and Level 3 categories (Level 2 assets have some observable inputs while Level 3 valuation is linked to the potency of the stuff you smoked). Munich Re had a fairly conventional portfolio- almost 63% in traditional fixed income, 23% in loans, about 2% in real estate, about 3% in equity and miscellaneous assets comprising the rest.

The second thing you don’t want your reinsurer to do is getting far away from his core competencies. Swiss Re strayed deep into credit products while Munich Re pretty much stuck to its core competencies. Thirdly you want to see as little reinsurance leverage as possible.
Reinsurance leverage is defined as the ratio of a reinsurer’s reinsurance payables plus insurance and annuity liabilities plus its unpaid claims plus its debt to its capital. Munich Re definitely scored better on this front. Finally, you want to see your reinsurer having fairly steady loss experience- that it the combined ratio should not be jumping all over the place. In this item also, Munich Re had a better record than Swiss Re.

**Key Takeaways from this chapter**

It is impossible for a credit analyst to assess the creditworthiness of a company without a clear fix on the value of its assets and liabilities. Obviously it is not possible to get a value correct to the last decimal place, but the more the uncertainty in the value of assets estimated, the greater the equity cushion that creditors should demand for providing debt capital. This is true of all companies- whether a manufacturing company or a financial institution such as a bank or an insurance company. Yet credit rating agencies and credit counterparties were ignoring the asset valuation of their clients until the credit crisis hit in 2007.

In the case of manufacturing companies, the earnings number provides some hints as to whether the asset values have been correctly stated. If earnings before interest and tax are persistently below the cost of debt and equity capital, it points to overstatement of asset values and hints at the necessity of impairment charges. This might require shareholders and even creditors to take a haircut. Once the analyst is convinced that assets have been overstated, the next step is to try to identify the source of overstatement. Was the overstatement on account of goodwill from an M&A transaction that failed to live up to the promise of an investment banker’s financial model at the time of the transaction? Was it due to intangible assets such as patents which did not deliver the expected cash flows? Or was it due to the property, plant and equipment failing to bring showers of blessing due to obsolescence creeping in? Identifying the
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part of the asset side of the balance sheet that is overstated is critical for identifying what the creditor should do next. For instance, grasping early signs of obsolescence might provide creditors attractive exit opportunities.

The other side of overstating asset valuation in a manufacturing company is understatement of liabilities. Understating of liabilities starts from non recognition of these liabilities in the income statement over a period of time- such as understatement of pension liabilities. This overstates return on capital employed because all costs have not been provided for- so adjustments need to be made to earnings to correctly estimate returns.

One of the most poignant aspects of the 2007 credit crisis was credit rating agencies assigning credit ratings to commercial and investment banks with nary an idea on the values of assets of those firms. Several times the shareholders’ equity of the banks was classified as Level 3 assets- assets for which no values were available in the market and which the banks were valuing pretty much the way they wanted. These values were justified through use of dubious financial models- completely divorced from reality and common sense. Level 3 assets are like the Cheshire cat in Alice’s wonderland- they slowly vanish leaving behind only a grin.

How rating agencies permitted such a cleavage between stated values and reality is a wonder which perhaps only those agencies are qualified to explain- hopefully at a congressional hearing. If asset values are fixed based on whims, so are the earnings because profits and losses on the asset values are recorded in earnings. The only answer, any honest credit analyst should have had till 2007, was he did not have sufficient information about the assets to assess most banks for counterparty exposure. It is amazing that the interbank market existed at all till the credit crisis hit- when banks were lending to each other without being able to assess the counterparty credit risk. Perhaps the overwhelming reason was that people living in glass houses cannot
throw stones. They could not point to the mote in the counterparty’s balance sheet, without removing the beam from their own balance sheet.

It is winter of 2009, but we still can’t assess the creditworthiness of most big US and European banks. If fact, the only basis on which one can lend to such institutions is whether they would be bailed out. And considering the increasing hostility among tax payers to such robbing the middle class to pay the rich, having likely bailout as the cornerstone of one’s investment thesis does not seem terribly smart. Besides, the SDR of many countries have spun out of control-making such bailouts less possible.

Accounting standards might permit an organization to state its debt liabilities at fair value but a creditor is not in the business of taking a haircut on what is owed to him. For analysis, the creditor must consider all liabilities at face value not fair value, and companies recording such fall in value of liabilities as earnings must be considered to be overstating their earnings (such earnings are not available for debt servicing because it is premised on the assumption that the debt will not be settled in full). The only place were a credit analyst should give the benefit to the borrower is if the borrower takes advantage of the fall in liability values to buy back the liabilities. Understatement of liabilities is a fact of life in the insurance business and creditors should superimpose management integrity on stated liabilities for estimating the amount of cushion they would require. Because insurance claims are paid much later after the claims are filed, it provides management leeway for understating technical reserves for settling claims. We discussed some checks to spot under reserving, but it is not possible to state unequivocally that reserves have been understated except by relying on past experience of how often an insurance company had to resort to “reserve strengthening”
Liquidity of assets should not be an issue for solvent financial institutions. If there is a systemic liquidity problem, the banking regulator would step in – so there is no need for creditors to plan for that scenario. And individual institution liquidity problem does not arise- it only arises from grave doubts about its solvency. When any rumor swirls around a solvent institution, it should communicate in great detail with the banking regulator to ensure that the regulator understands that it is solvent. Then, with the regulator by the side, the bank should communicate to all stakeholders in considerable detail, but in plain language, why it is solvent. Feeble communication or arrogance could be fatal. When a mortgage finance institution finances long term mortgages with funds raised in the overnight market, the problem is not one of liquidity but of solvency as rising interest rates could reduce value of assets below value of liabilities.