A year into the credit market crisis – where are we?

1. Why we need equity

In the days when the Swiss Confederation was comfortably ensconced in the bipolar tensions of the Cold War, the government regularly and persistently exhorted its citizens to lay down emergency food reserves. "Kluger Rat – Notvorrat!" ("Be smart – be stocked!") was the slogan. Looking back from a historical perspective, two things are striking: firstly, the high standard of copywriting in the days before armies of communication specialists, backed up by vast numbers of PR agencies, turned up on the state payroll. Secondly, and more importantly, the honesty with which the government admitted the potential inadequacies of its own provision. After all, encouraging the population to reserves is tantamount to admitting that public provision may experience shortages, or even collapse altogether.

Tempi passati. Today, organizations blithely continue to proclaim "normality" long after a crisis is clear for all to see, everything is adrift, the ship is going down, and nobody has a clue what to do. In today's thinking, with its euphemistic "can-do" mentality that often borders on delusion, management all too often blocks the notion of genuine crisis from its collective mind, and, when such events inevitably erupt from time to time, they claim they "could not possibly have been foreseen". And heaven forbid people should admit that crises can occasionally spiral completely out of control! This denial mentality effectively prevents us from facing the fact that crises are natural events. Yet this fallacious "zero accident" concept not only seems to have taken root not only in the mind of our esteemed transport minister, but more widely with regard to our expectations of public bodies' and their representatives.

Reality is, of course, entirely different. While there are plenty of positive developments going on all around us, wherever we look, we also encounter crises, eruptions, suppurating sores, and debris all over the place. There's no question of anyone or any institution having things entirely "under control". The state of things is mostly fragile, the ice is exceedingly thin, and the capabilities of the systems and those charged with running them are often limited. The world is complex, and our understanding very fragmentary. Technology-based controllability is an absurd concept in the face of reality.

This applies in particular to the financial system. Only a very few forecast the profound crisis over which the banks and the financial markets have now been agonizing for a good year now. Worse still, the public had begun to regard the lack of accidents over the previous five years as the normal state of affairs. In a system that excludes the possibility of accidents or serious crises, the existence of an emergency reserve, a residual source of nourishment, is obviously irrelevant. The decisions by many large banks to drastically reduce their equity ratios in the run-up to the credit market crisis were undoubtedly the result of such a misconception of "normality". But warnings that certain circumstances were being taken for granted and could not be extrapolated indefinitely were dismissed out of hand.

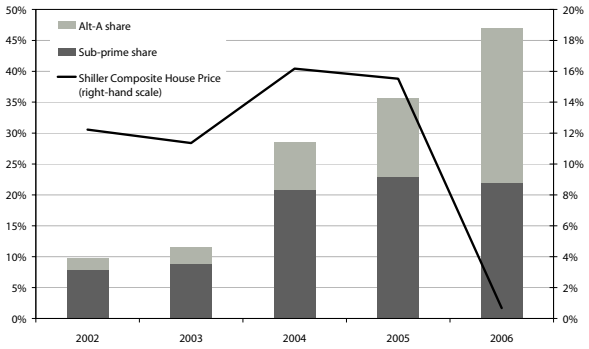
This is precisely the point as we now – faced with a very real crisis – debate the question of what constitutes adequate equity in the banking sector. The idealistic but also thoroughly self-interested notion of a completely controllable financial system is confronted by the more realistic belief that the players in that system simply cannot expect everything to be "under control" (whose control?) at all times – and that they should therefore ensure that they are in possession of sufficient equity. Whatever the final wording of the equity ratio regulations – and they should certainly be thoroughly debated –, anyone who fundamentally opposes the idea of an "emergency reserve" is displaying the same mentality as those who look to our hopelessly overstretched public institutions to provide for any and every need, even the most private. All this stems from the passage of the 1968 generation through the body politic and the substitution of paternal authority with a sense of entitlement to unlimited state support. Remarkably, this mindset seems now to have infected the management of capitalist enterprises as well.

After reviewing the current situation, this Investment Commentary addresses the problem of the liquidity shock, and the question of how much equity the banking sector needs.

2. Longer, and worse, than expected

In past Investment Commentaries we have pointed again and again to the dangers of the gathering storm, and since it broke we have certainly been among the pessimists, or rather, the realists. But there are still many elements of the crisis that have proved more serious and more intractable than we had ever imagined. Let's be clear: the main problem of the credit market crisis is that it is still impossible to see any end to it. The reason for its depressing persistence is that there is no process in sight that could sustainably resolve all the accumulated problems.

Misallocation despite warning signs



Note: 100% (left-hand scale) = total US mortgage market, incl. prime segment

Source: Bloomberg, IMF; analysis

First though, let us again review the progress of the crisis step by step. There is no doubt that the root of the evil lies in an immense misallocation of funds towards ever more questionable American debtors between 2002 and 2007. The figure above clearly illustrates this problematic development. change in the mix of high-quality and low-quality American mortgages: from 2003 onwards, significantly more funds were made available to so-called sub-prime and Alternative-A debtors, and this trend continued even after the accelerated rise in real estate prices had passed its peak (2005). Funds flowed towards a continually deteriorating substrate.

There have since been many estimates of how extensive the losses might be. The result of these efforts is sobering; there is a wide discrepancy in the estimates. Initially, official bodies, such as the Fed and the US Treasury, played the matter down, characterizing it as a small event involving some USD 50 billion. After it could no longer be denied that the crisis had occurred, the euphemists, first and foremost the affected creditor banks and the ever-optimistic OECD, reckoned with a "few hundred billion"; the International Monetary Fund with around USD 1,000 billion. Serious experts, such as the economists Shiller and Roubini, are now looking at sums of around USD 2,000 billion. One of the main problems with these estimates is defining precisely what "loss" actually means. Is it the (possibly only temporary) difference between the former collateral value of real estate and its current market value, or rather the amount that is probably irrecoverably lost, and must therefore be written off definitively? Given the fact that there has so far been no significant interest in purchasing the distressed credits, we are bound to assume that "loss" is ever more widely understood to mean "irrevocably disappeared", "squandered", "blown away", "gone up in smoke".

Our own – also high – estimate (USD 1,000 to 1,500 billion) is based partly on the assumption that the difference between the amount that normally flowed into the various high-quality segments of the American mortgage market and the amount that was enthusiastically injected into sub-prime and Alternative-A segments from 2003 onwards belongs in this category of loss. This represents a unique episode of redistribution within the financial system, to the benefit of a sector of American society that was unable to meet either interest payments or amortizations to a sufficient extent. It is also becoming increasingly clear that further segments of the US credit market, such as student loans and credit card debt, are becoming distressed. In other words, we are increasingly required to consider the increasingly excessive overall indebtedness of the American private sector.

We have commented extensively in previous Investment Commentaries on the institutional causes behind this gigantic, self-inflicted (!) exercise in redistribution. In essence, money that was available at no cost – as a result of excessively low risk premiums for big banks enjoying implicit state guarantees – was used to fuel a debt-generating machine driven by commission-oriented investment banks and distribution channels on both the debt and asset (investor!) side. This debt-generating machine was, and to a large extent still is, self-referential. Evidence for this astounding and thoroughly disquieting thesis may be found in the example of Credit Default Swaps (CDS). The CDS portfolio amounts to some USD 45,000 billion; the actual substrate of corporate bonds, however, to a mere USD 5,700 billion. In other words, the system has overinsured itself by a factor of eight.

3. Digression no. 1: A gold-mining story

Suppose that in 1840, long before the invention of the telegraph or telephony, a highly convincing adventurer had convinced a number of wealthy individuals in New York that he had found a virtually inexhaustible vein of gold in far-off California. All he now needed, he claimed, was a little capital, in order to exploit his discovery – but quickly, so as to get there ahead of all the other prospectors. As evidence for his story, he produces a handful of nuggets. And, naturally, the legendary rise of "General" Johann August Sutter is fresh in everyone's mind. So the adventurer gets his loan, and so do all the others who follow hot on his heels to get rich quick from the gold.

New York is then hit by a regular gold rush. Private individuals disappear as investors. Their place is taken by professional brokers of gold-mine bonds, options on additional stakes, and stocks of mining tool manufacturers. These brokers soon organize themselves into firms, whose stocks can of course be purchased, and are believed to have excellent prospects, as the financing of gold mines has now become a completely normal business in New York. Everyone wants a bit of the action, and is ready to part with their money to get it. The gold itself is soon forgotten, with people paying attention only to their own business success. The Big Apple flourishes on the perceived prosperity of the gold-mining community. The first skyscrapers are planned.

Sooner or later, news trickles in from California that the mineral concerned might be pyrites, or fool's gold. Then, as the rumors gain authenticity, news comes that the prospectors have in the meantime disappeared. There are long faces in New York, and no skyscrapers for the time being.

4. How much is too much?

Why did this story never happen? For two reasons. Firstly, however much sympathy there may have been for the prospectors, nobody was really unaware of the high risks involved. Long-distance gold is a risky business. No-one would bet on it in a casino, unless – secondly – the stake was more or less free, in which case it wouldn't really matter.

The principal difference between this anecdote and the developments on the credit market is that risk awareness regarding investments in American real estate was severely limited, or rather "managed" by people working within a self-referential system who had an interest in the risks not being adequately discussed. Secondly, the most important players enjoyed an implicit state guarantee – something we have repeatedly deplored in these pages. It is this guarantee that generates, for all those regarded as "too big to fail", free funds that tempt financial services players to commit errors and create a bewildering array of of self-referential, but ultimately largely hollow, constructs.

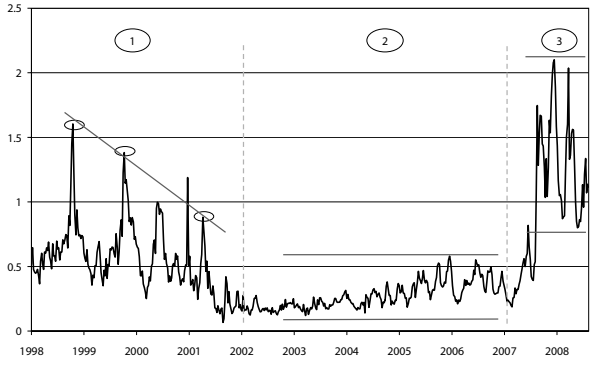
It is, however, important to acknowledge in this context that the financial system is, by its very nature, bound to be self-referential to a certain degree, and that this state of affairs is not necessarily the devil's work. For all financing – whether of prospecting for gold, a mortgage on some American shack, or a Nestlé convertible bond – looks to *future* financial performance, and thus inevitably involves some element of risk. It speculates that in due course the deal will pay off. Inasmuch as performance is to be delivered at a later date, all debt, and thus all leverage, gains time for the debtor, while the creditor's performance is delivered in advance – , and he may be disappointed by the result. All financing of financing relies on the fact that, on average and thanks to the law of large numbers, individual errors – fool's gold or sub-prime hovels – can be practically eliminated. An accumulation of errors is, however, unlikely but not impossible. The scale of the financial system and the amount of debt it generates must depend more or less directly on the known number of projected gold mines, and the likelihood of their successful exploitation. That the system will always appear "overdimensioned" in relation to the real economy is in the nature of things, on account of its inherently speculative character. It is not possible simply to equate the real with the probable – the probable requires more space than the real. But there is such a thing as "too much". That is the problem.

A single gold mine that contains little more than fool's gold is clearly not enough for a great big global financial system. The – with hindsight – staggering concentration on the "gold mine" of American mortgage business can be explained in terms of the supposedly low complexity of the substrate and the resulting consistently high level of liquidity of the instruments based on this substrate. We shall come back to this aspect.

It might perhaps be objected that it was not really a question of free stakes at the casino. The credit market crisis has shown that risk premiums in the interbank system can also go up, meaning that the financial system is not really based on an implicit state guarantee, and the fairy tale about "moral hazard" represents a baseless attack on the investment banks. So, we need to take a closer look at the data. The risk premiums in interbank business are revealed by the TED spread; that is, the difference between the interest rate for interbank

loans and the interest rate for government bonds with corresponding maturities. In our view, it is possible to distinguish three phases over the past ten years. First, the establishment of "moral hazard" between 1998 and 2001, as with every move by the central banks, and the Fed in particular, it became increasingly clear that no system-critical institution would be allowed to fail. Second, the period of certainty between 2002 and 2007 in which the banks were able to help themselves to the free funds already criticized, and during which the assets and liabilities of banks like Barclays, Deutsche Bank, UBS or Credit Suisse in some cases doubled. Third and last, the credit market crisis, with a vast TED spread – de facto, interbank business dried up completely at times – and the persisting extremely tense liquidity situation, revealed by the continuing high premiums and the enormous sums that the central banks have made available to commercial banks.

A sinister story



Note: TED spread = 3-mth US Libor – 3-mth US T-bill
Source: Bloomberg; analysis

We believe this third phase of development in interbank business indicates that there are doubts within the financial system as to whether it will be possible to resolve a crisis of this scale without a major collapse. "Too big to rescue" is what we read out of this data. If the market still believed in "too big to fail", risk premiums would be lower.

5. Real estate: From boom to bust

Now, we need to take a closer look at this "gold mine" – the American real estate market, so long regarded as unproblematic. The excessive funds pumped into the qualitatively dubious sub-prime and Alternative-A segments between 2003 and 2007 are one thing. As already stated, we expect that a large part of this seriously misguided investment is gone for good. Outstanding debt in the sub-prime segment has now reached 20 percent. This means that every fifth house must come on the market. The previous owners have no incentive whatever to repay the debt, for American mortgages are on the property, not on its owner. There is already a jargon expression for this pattern of behavior: "jingle mail" – a letter to the bank containing the house keys. Rather buy a new and cheaper property at a later date, if at all.

Unsurprisingly, given this state of affairs, there's not much building going on. The number of building permits has roughly halved since 2005, and is now at the same level as during the savings and loan crisis of the early 1990s. After a steady rise of at least five percent per year, the growth of house prices has now for the first time tipped into the negative. And we must also consider that the credit market crisis has not yet triggered any real wave of selling by the creditor banks. Sale prices are still to come.

The big question is whether, and how far, the high-quality prime segment will be affected. The balance sheet problems of the two large, government-sponsored mortgage institutes, Freddie Mac and Fannie Mae, together with the looming problems of the big credit unions – whose assets amount to some USD 800 billion – indicate some contamination of the prime sector. However it is extremely difficult to assess precisely what practices prevailed in this segment of the market. While we should not necessarily assume that aggressive salesmen have also been pushing debt at the respectable owners of middle-class housing, we should anticipate that more refinancing will be required in the prime segment too in the near future, at a time when house prices are stagnating or falling and interest rates are high. But it is hard to imagine "jingle mail" fever really taking hold of the prime segment.

This final question of a further destabilization of the mortgage business, and thus of the banking system, is closely linked to the question of further economic development in the USA. Forecasts suggest a significant weakening; indeed, a possible slide into recession. The number of job losses has risen, and the Purchasing Managers' Index is approaching recessionary levels. The key in the USA remains consumption. The rise in energy costs has now slackened somewhat, but can still be clearly felt, and will undoubtedly continue to affect consumer sentiment. However, against all these negative indicators must be set the robust industrial production, which results in an ambivalent aggregate picture. There is clearly no reason to forecast economic disaster. But the ice is exceedingly thin as far as US economic development is concerned, and the impact of that development on 's impact on the Achilles' heel of the global banking system – American mortgage debt – is still far from certain.

6. How much is under control?

One of the most spectacular phenomena of the credit market crisis is clearly the way in which the securitization of banking business resulted not in relief for banks' balance sheets but in the precise opposite. We long believed that securitizing debt and bringing it to a liquid market would "socialize" it right across the investor community, and that this would be synonymous with a better distribution of risk. Instead, the volume of outstanding debt has simply multiplied – and has essentially stayed on, or landed in, the banks' balance sheets.

The Fair Value Measurement process under US-GAAP accounting rules is used to shed some light into the dark corners of these vast bank balance sheets. It distinguishes three valuation approaches – "valued at market price", "valued with a model based on objective market prices" and "not objectively valuable" – in order to arrive at a reasonably defensible value of financial products for accounting purposes. Indirectly, it then becomes possible to estimate future write-downs. The problem with this approach is that, as liquidity dries up in the markets, so too do objective valuation criteria. The second area of uncertainty concerns the stability of the valuation models used. Anyone who has worked with them knows how sensitive they are to minor changes in assumptions (of interest rates, for example). In other words, it becomes difficult to determine what is the "fair value" of the balance sheets concerned: estimation errors of plus/minus 5 percent, for example, would not be surprising under these conditions. But when the equity ratio is significantly below the resulting range of 10 percent, it is impossible to say at any one time whether a bank is overindebted or, on the contrary, in much better shape than might be supposed.

Depending on their equity positions and the write-downs calculated for their assets, many financial institutions have been obliged to raise fresh capital over the past months. Existing shareholders have sometimes experienced painful dilution of their holdings: in some cases ownership structures have changed radically. The new owners are mainly located to the east of the 35th degree of longitude. It remains to be seen what impact this will have on the management of the institutions concerned. However, we find it difficult to imagine that investors such as a Singapore sovereign wealth fund will regard the fact that the share price of UBS or Barclays has fallen by half since the capital injection simply as business as usual.

The table below gives a summary of the current status of write-downs and recapitalizations. The analysis is ambivalent. On the one hand, it was obviously possible in the course of the crisis to mobilize funds for recapitalization quickly and on a large scale. On the other hand, precisely on account of these enormous sums and the book losses since the recapitalizations, the question arises of how much elbow room there will be for any future recapitalizations that may be needed.

The damage so far

	Write-downs	Recapitalizations
America	252.5	178.5
Europe	227.8	152.9
Asia	22.7	20.8
Total	503.0	352.2

Note: In USD billion

Source: Bloomberg

Given our estimate of "irrecoverable" losses of USD 1,000 to 1,500 billion, and the fact that these losses essentially remain on the banks' balance sheets, we believe the ability to raise additional capital over the coming months will become a matter of survival. There is very little room for maneuver: reducing the asset side of the balance sheet has become a must. However, the sale of some assets is not possible under certain circumstances. Further losses in value result in a continued need for write-downs, which burdens the P&L statement and the equity situation. At the same time sources of funds previously available are at risk of drying up on account of the crisis, and whole departments may have to be shut down. So far, some 100,000 jobs have been lost as a direct consequence of the crisis, and this trend is likely to become more acute. Faced with stagnating, falling or even collapsing business volume, only those banks able to rigorously cut their costs and operate with very lean business models will be able to convince future investors and so gain the credibility essential for survival.

7. When pools freeze over

We can already learn two important lessons from the credit market crisis. One concerns the functioning of liquidity (or what causes it to dry up); the other, the structure of the banking system. They are closely interrelated, as making liquidity available is one of the core functions of the banking system. Let's start with liquidity.

What liquidity means is at least intuitively clear, and actually easy to explain. Every trip to the supermarket confronts us with the phenomenon of liquidity on a daily basis: there are enough goods, and these goods can be obtained at a certain price. The owners of the supermarket ensure sufficient fresh supplies and clear away unsalable goods. They receive compensation for the capital

required to ensure there are enough goods, for the risk of being left with unsalable goods, and for the logistical effort involved. This takes the form of the margin between the purchase price and the selling price and is the principle on which not only supermarkets, but all other markets function.

What seems at first sight simple, however, turns out on closer inspection to be anything but. What are the necessary and sufficient conditions for the availability of liquidity? What are goods? What is price? How are prices allocated to goods? Or, the other way round: under what conditions does this allocation no longer function? Take goods: tomatoes can be red or green, large or small, juicy or fleshy. We are more or less able to assess these aspects of quality. But tomatoes may also be health hazards, as a result of invisible chemical spraying. Or they may have been stolen. These are aspects of quality that we are unable to judge. If we are uncertain about complicated health-related quality issues or the legal status of the goods, we will avoid the supermarket.

We require similar transparency in financial matters. All supermarket owners naturally try to manipulate demand via discounts, advertisements and other means. But there are strict limits to complexity; if it is not immediately clear what price applies to what goods, we simply go to the competition.

In other words, in addition to the necessary conditions of providing capital for the goods, taking the risk of unsold items and providing the logistics platform, liquidity can only exist on the condition of low complexity concerning the quality of the goods traded and adequate transparency on pricing. Why is the market for American treasury bills so liquid? Because they involve the acquisition of an uncomplicated good, namely interest-rate risk. There are no issues concerning creditworthiness or guarantees, and pricing is always transparent. The situation was exactly the same, before the outbreak of the credit market crisis, with the many liquidity pools, which no-one would ever have believed could freeze over. Big banks like UBS or Merrill Lynch und Citi are now having to spend millions buying back Auction Rate Securities (ARS). This is a substrate that, until mid-2007, was as uncomplicated as treasury bills or tomatoes. The same applies to CDOs, CDSs and many other now notorious acronyms that have become part of our vocabulary in recent months.

The problem is that "complexity" is obviously unstable, and in particular, that change in "complexity" is not a consistent process. Someone in the supermarket suddenly shouts, "The tomatoes are poisoned!", and the market for tomatoes immediately becomes illiquid. It will remain so for a while, even if the tomatoes are actually of impeccable quality. If he had shouted "The tomatoes are green!", nothing would have happened.

Changes in complexity are not the only variables in the balance between liquidity and illiquidity. The pools themselves generate shifts, for liquidity attracts liquidity, and the result can be oversaturation. Whether we go back to our gold-mining example or look at the run on real-estate-related financial instruments before the middle of 2007, there can be bubbles and excesses in liquidity too, based on a supposedly stable absence of complexity. Much has been written about real or imagined stock market bubbles; but to our knowledge, the creation of excessive, and ultimately illusory, liquidity has so far largely escaped critical attention.

8. Digression no. 2: Oversaturated solutions

From our schooldays, we may recall the chemistry laboratories, where, equipped with protective goggles, a white lab coat and a serious expression, we conducted experiments with oversaturated solutions, and unleashed just such a non-constant process. We "seeded" the fluid with a single crystal and, whoops, the test tube was suddenly full of crystals. The incautious among us then dropped it, for crystallization processes are exothermic: you can burn your fingers.

So, oversaturation, and to some extent excess, is also a natural phenomenon. It derives from the interaction of two opposing forces, the molecular need for crystallization on the one hand and surface tension on the other. The more pure (non-complex!) the solution, the greater the potential oversaturation (excess). The greater the degree of oversaturation, the denser the crystallization.

One of the fascinating aspects of this comparison is surely the oversaturation itself; that is, the way a "normally" stable medium approaches a critical point. But the way the seed crystal works is no less fascinating. Smaller and more insignificant than a mustard seed, it nevertheless causes what looks like a perfectly stable world to collapse. The critical state of the solution is not superficially apparent, nor would a non-expert attribute such power to the seed crystal. It does exactly what the presence of additional information on the financial markets can do: creates a sudden increase in complexity. Without wishing to belabor the hypothetical parallels between oversaturated solutions and excessively exploited liquidity pools, one thing seems clear enough: our understanding of the functioning of what we regard as a "stable" finance system is extremely limited.

9. Once again: Why we need equity

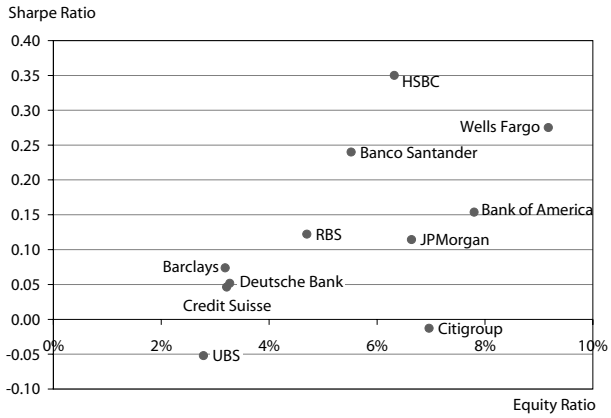
If we take this insight seriously, we must abandon the notion that a system whose structure is based on "normality" can achieve anything like "zero accident". Basle II, the recently introduced equity corset for the global banking system, is based on such a notion of normality. It is diametrically opposed to the mathematician Benoit Mandelbrot's theory that both "disastrous" and highly positive events in the financial system occur much more frequently than should be the case under the normal rules of distribution. The real-life experience of financial market players (1987, 1991, 1998, 2001–2003, 2007–200?) also points in this direction. Extreme events occur far too often.

Basle II is a regulatory structure that allows banks nominal reductions in equity for instruments and positions where market liquidity prevails. But if we accept that there can be such a thing as excessive liquidity, and if it is also the case that such excesses are not constant in nature but occur almost inevitably in surges – and, like the crystallization of oversaturated solutions, happen not slowly but suddenly –, then the whole matter needs to be fundamentally re-examined. If our analysis is correct, all the crises we have listed were triggered by these kinds of crystallization processes in large liquidity pools.

The response in economic terms must surely be the insight that pressure to reduce equity will not necessarily lead to success. Obviously, achieving a high return on equity looks good. Return-on-equity thinking dominates the management of most banks and the minds of financial analysts. And most bonus schemes are based on ROE. It is easily measurable, and easily influenceable, if not manipulable, on both the profit and the equity side. Superficially, an ideal metric for management.

If, however, we look at the returns of a company, say a bank, from the shareholder's perspective, the accounting metric of ROE is not as interesting as the performance of the stock. For the shareholder, performance is always defined as the long-term success, adjusted for the risk involved. An analysis of the risk-adjusted performance and average equity ratio of a number of bank stocks shows that an equity ratio set low to maximize ROE is by no means a success factor. The figure below reveals this "non-relationship"; indeed, with a bit of statistical bravery it is possible to read the opposite conclusion out of the figure: the lower the equity ratio, the worse the performance. We would not wish to assert this without further, more profound analysis. But we certainly suspect it.

Equity ratios and success



Note: Sharpe Ratio = (Total return – Risk-free interest rate)/ Volatility. The Sharpe Ratio and the equity ratio are based on the last 10 years.

Source: Bloomberg; Factset; analysis

Clearly, such considerations have important implications. It would mean, among other things, that the stock markets would reward a more prudent management approach. In this case, the business and remuneration models of many banks would be in urgent need of revision.

10. A note for investors

One Investment Commentary cannot address all the current questions of interest. We are aware that we have not answered the question of what may happen on the stock markets, already hard-hit this year. Very briefly: we see no reason to abandon a cautious approach. There are too many uncertainties concerning international exchange rates, inflation and recessionary tendencies. The crisis of 2007–200? is a genuine banking crisis, not just a correction of generally excessive stock prices. The stock indexes are currently at around 1998 levels, so we are definitely not experiencing any striking overvaluation. Even if profit levels are less attractive, many stocks are far from overpriced.

Finally: in our view, stocks represent an ideal means of diversification in a crisis in which depositing cash and other asset classes – at least with certain banks – must still be regarded as risky. However, we feel quite comfortable with the idea of owning shares in large ice-cream-making machines, pharmaceutical retorts or electricity generators.

KH, 18.08.2008